(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 857 316 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
08.04.2015 Bulletin 2015/15

(21) Application number: **12831334.3**

(22) Date of filing: **13.09.2012**

(51) Int Cl.:
B65B 3/02 *(2006.01)* ***B65D 77/06*** *(2006.01)*
B65D 5/00 *(2006.01)*

(86) International application number:
PCT/ES2012/000261

(87) International publication number:
WO 2013/038037 (21.03.2013 Gazette 2013/12)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **13.09.2011 ES 201101023**
18.10.2011 ES 201101148
15.03.2012 ES 201200301
11.04.2012 ES 201200401
10.09.2012 ES 201200926

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(54) METHOD AND MACHINES FOR TRANSFORMING INITIAL SEALED PACKAGINGS INTO IRREGULAR CUBIC OR POLYHEDRAL PACKAGINGS BY MEANS OF SEALING AND CUTTING FLAPS

(57) Transforming initial container with at least two sides of flexible material like film coil, which are sealed with fluids and/or pasty and with solid or not inside, into three-dimensional geometric body shape.

The process comprising of the following stages:

1-The initial container is grabbed preferably by central transversal area or one of its ends, by one or two fixing clamps (3) keeping a constant pressure force (adjustable) inward, but with adjustable damping to take back when original container increases in volume.

2-One or more impact clamps/bodys (6) hit one or two of perimeter sides, starting one, two, three, four or more flaps or triangles, and also to the same time the initial container is transforming blowing up or increasing it volume into three-dimensional geometrical body we desired [rectangular prism/cubic figure (if four flaps are sealed or sealed and cut) or irregular multi-faceted (if one, two, three flaps are sealed or sealed and cut).

3-Consecutive, one, two, three, four or more flaps or triangles created, are sealed (8) or sealed and cut (8) transverselly (or approximately) to the area that is making contact; the flap and the rest of container.

Advantages:

-All the container sides may be smooth without flaps.
-Improve Environmental and economic savings; not being necessary the use of cardboard in film and avoid flaps, further lowering the volume of waste and energetic cost and because helps the recycling.
-The possibility to produce smaller 3D containers.
-Dosage is easier and clean to increase the pressure.

*Applicant certifies at the instance its proposal to publish 8 figure attached with the summary.

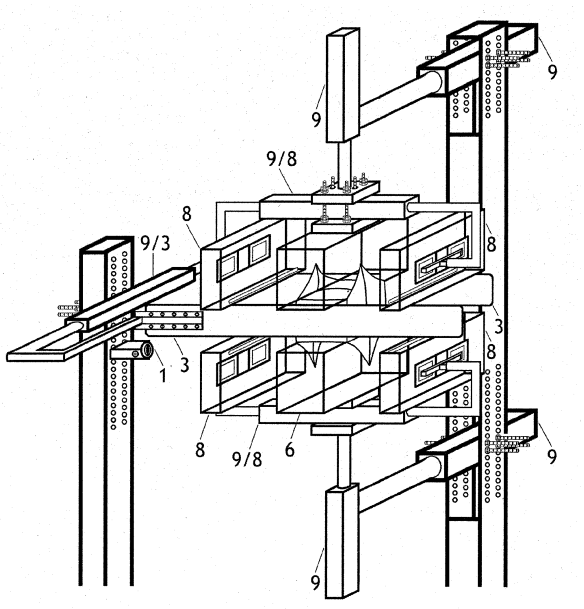

FIG8

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Description

TECHNICAL FIELD OF THE INVENTION

[0001] It belongs to the industry of packings or to the sector of the Packaging.

[0002] The machines and procedures of the new invention along with the already existing ones on the market, will take part jointly inside an integral solution, being this one essential for the new process of transforming from a packing or initial bag sealed with liquid substance or only air / gas in its interior, in a cubic packing or entirely volumetric of three or more faces smooth all of them without flaps or with one or two flaps without sealing nor to cut. - the filling machines in vertical / horizontal of liquids are those who, previously, will make the initial packing of which we divide that it is not different that a packing of two faces (can take any more secondary internal or external face as those of the packings of the type Stabilo pack ®) sealed with two or more weldings with liquid substance or / and air / gas and little or volumetric at all.

[0003] The initial packings are prepared by flexible materials (plastic; pasteboard; aluminum; etc.) type film in bobbin: in plate (monolayer or multilayers), complexes of two or more layers (plastic - aluminum; plastic - aluminum-cardboard; etc.), in pipe or semi-pipe.

- examples of products to commercialize derivatives of the invention:

  A) Organic:

  a1) cubic plastic Ices for drinks (bloodletting; beer; champagne; wine; cider; liquors), food as the cold vegetable soup or for organ transplantation.
  It is a question of cubic packings with water in its interior, of plastic material type film in bobbin, which will be sterilized and which according to the case, will be wrapped in the second bundle.
  a2) Packings similar to those of tetrabrik ® (it is not necessary that in the exterior layer of the packing, it takes pasteboard, although also it can take it), also where fluids will be packed (liquid / viscous or / and air / gas) and with solid or without them, like drinks, yoghurt, vegetables, sauces, soups, dry fruits, snacks, cereals, chips, feed, etc. They can be made of any measurement (12.5cc; 33cc; 50cc; 1litro) and of multiple forms different from geometric bodies as for example: regular hexahedron, rectangular / triangular prisms, rhomboid pyramid, the trapeze and many other irregular polyhedrons.
  a3) cubic mini-packings or polyhedrons irregular that in its interior contains sauce of between 20 to 80gramos, in which it is dosed better on having been able to give major pressure and because it stays himself standing.

  B) Not Organic: Packings for Pieces of Hardware store / toyshop, liquid Soap, Cosmetics, Perfumes, Colognes, mineral Oil, Cleaning products; etc.

THE STATE OF THE EXCELLENT TECHNICS

[0004] At present many machines manufacturers exist for not many procedures related to the manufacture and packed of packings, but none resolves, nor offers, nor is equal, to the procedure of the invention.

- machines exist in horizontal or in vertical, to pack all kinds of substances like food, chemicals, objects, liquids, solid...
- the systems and methods of packed more used, there are the following ones:

  Of flow pack; thermoformed and blister; dairy pack; I give pack; vertical; thermosealed; of retractable; welding in L; extensible film; retractable-shrink-wrapper; baling; withdrawal tunnels; bell-packer...

- there are other similar, but quite different procedures, as there are the used ones in the packings manufacture type tetrabrik ®, SIG ®, Ipl ®. But in all of them, the packings they have to make necessary with pasteboard type film of bobbin - apart from others like the aluminum and the plastic - since this material is the one that awards rigidity and resistance to the packing. Also, to this pasteboard plate, previously, a few marks or cracks are realized to him as punching and like guide, so that at a later stage, he acquires the cubic form, on having been pressed hard by rollers about its sides or perimeter, when the film flexible (plate) in bobbin that has already formed a cylindrical pipe in vertical, is falling down or moving of above to below in a machine of filling of liquids in vertical; continued, once previously there has already formed the cubic form that we wish, it will be sealed and will cut the packing transversely and for the faces of out, and where at the same time, the flaps will form.

- there exist other systems that are not entirely volumetric and are always elongated and slightly steady packings as for example: doy pack, stabilo pack, pillow pack; delta pack. In these systems that I have just named, also, they use alone plastic type film in bobbin, but there are less steady not cubic packings (especially in the base) and not volumetric at all in addition to that

its faces are not all smooth ones, and where the lines of welding of the crease of the flaps inwards, it is ineffective on not having sealed quite especially with liquids.

- it is necessary to mention, also, to the system of manufacture of packings for the method of injection of plastic by means of molds since it offers the possibility that there could be made any type of form and size (water bottles; boats of liquid soaps)..., but they have three disadvantages: a major cost of the final product because the production for unit is slower, the maintenance cost is major and the raw material that is used to make them is more expensive.
- you scheme it in vertical of liquids they will be those who make the initial packings to which later we are going to transform with the machine of the new procedure: in new packings with form of cubic figure.

[0005] It goes to use for these flexible material packings like plastic type film in bobbin, being able to be these of two types:

A) In pipe (mono-layer/multi-layer and complex) in the one that two stamps or weldings they will be able to realize.
B) Sheeting (mono-layer/multi-layer and complexes in the one that three or more stamps or weldings they will be able to realize.

[0006] Depending on the material of stiff packing (plastic / pasteboard / aluminum) that we use how, also, of the type of machine of packed of liquids in vertical that we use, will obtain a type different from initial packing; this means that there will be initial packings with more or less weldings in places and different positions (to the center or to the flaps, longitudinal or transverse). Also, these initial packings, in general, almost always have two main faces, being able to have someone more but secondary, as what happens with the faces of internal or external creases of the packings of the type stabilo pack ®. In any case, so much in one as in others, I know it will obtain, finally, the same type of cubic or completely volumetric packing.

EVALUATION OF THE STATE OF THE TECHNICS

[0007] The current moment is the most suitable to guarantee the success of this new machine and procedure, because there have been reached a few highest levels of development and evolution, as for materials, machinery, mechanisms, automatisms, skill, technology, raw material at very economic prices that will endorse this new project with entire guarantee.

[0008] The machines already known by all, named in the previous paragraph, are well placed on the market and have contributing an effective and wide solution as for models of products and services, but in fact, none focuses or takes part of the way of making of this new procedure with machine, since because the initial packings are manipulated or are processed, at a later stage or enough after having already been made, this allows that, precisely, major malleability as versatility and facility to be obtained in the production of the packings to be transformed, making possible with it that there could be made rectangular cubic and prismatic packings of all the sizes and of very limited size, and of diverse new forms like the irregular polyhedrons. They share all the fact that all its faces are smooth and flat, without flaps. Also, it is true that in any procedure of manufacture of already existing packings, the fundamental procedure of the sealed one has never been realized or sealed and cut of the flaps.

TECHNICAL PROBLEM TO BE SOLVED

[0009] It's about one new procedure and machines to make cubic packings or / and irregular polyhedrons of a possible simplest and economic way, which works with the cheapest and light materials of the market as they can be plastic type film in bobbin both in pipe and in plate and mono-layer or multi-layer and complexes and, always, without the need to have to add to this one no other type of material like the pasteboard, so that major contribution rigidity, consistency or resistance, although also, the same way, it should be valid with him. Also, it is possible to add materials as the aluminum. - it is necessary to say that everything arose for the need to want to make cubic packings entirely volumetric or cubic that were serving as ice cubics that were late in be defrosting, and that also could be all the possible measurements, and both cubic and prismatic rectangular.

[0010] The emulation was, therefore, in the beginning: wanting to throw to the market these plastic ices being these sterilized (autoclave), so that this way, all the tourists of the world were not contaminated or taking an infection. Therefore, finally I could come to the conclusion that the packings did not have to have any flaps so that, this way, all its faces were smooth.

[0011] He is going to manage to add, therefore, new services as that to himself of increasing the pressure of exit of the stiff substance inside, or that of having major stability because they could stay standing, themselves.

- they can be made at inpowderrial level, but perhaps being the most important thing, which these cubic packings they could make with, only, plastic material, since it has become possible with the new procedure to increase the stiffness or consistency of this new type of cubic packings due to the lines of welding resultant of there is realized the sealed one of the flaps by the line or transverse side that is in union or doing contacted with the trunk or the remain of the packing; independently of that they are cut completely. - therefore, a packing less harmful to the way is

obtained, finally, for the Enviroment since it will generate less residues (less packing volume on not having contained flaps) and because they will be able to retrain in a more efficient way to since on having been able to make with only plastic the recycling is easier and more economic because they do not have to separate the different layers as the pasteboard or aluminum as other packings tetrabrik ®, SIG ® or Ipl ® if they possess.

- also, packings are obtained with the only and original characteristics like that of the form of its figure and that of the lines left by the weldings. Introducing, this way, models of new packings of forms very original and varied where the consumers identify the mark with the product.

EXHIBITION OF THE INVENTION

[0012] It is a question of a procedure with machine to transform packings or initial bags sealed with two or more weldings and that in its interior contains fluid (liquid / doughy and/or air / gas) and with solid / granulated / powder or without them: in packings of volumetric three-dimensional geometric body as for example the cube (regular hexahedron), rectangular / triangular prism, rhomboid pyramid, trapeze and many other irregular polyhedrons. Previously we have to depart from an initial packing of at least two faces that is made by any of the vertical machines of packed of liquid / doughy / powder / granulate / solid already well-known or available, on the current markets.

[0013] These initial packings that in general are two faces - although it can have some face or mini-face more but it would help as for example those of the packings type Stabilo pack ®-are almost flat and are slightly volumetric.

[0014] The materials with which these initial packings are made are the flexible type film in bobbin like the plastic, aluminum, pasteboard in plate / complex or in tubo/semi-tubo, and mono-layer or multi-layers. Therefore, depending on every case, a few times it can be prepared by only plastic, others with plastic and aluminum or also other times for plastic aluminum and pasteboard.

- the Procedure of the invention, it is the only one with which it is possible to make three-dimensional packings of geometric body of the one that Plastic or plastic and aluminum have used or used only: as flexible material with which to prepare the packings, since the lines of welding of the sealed one or sealed and they award of the flaps to the packing enough rigidity / consistency.

[0015] Also, this Procedure of the invention, it is the only one with which three-dimensional packings of geometric body can be made with all the smooth faces without flaps or triangles and, also, of very small sizes as for example that of a rubber or a dice of playing, making possible this way the one that can be made -apart from all kinds of packings- threedimensional packings for sauces (ketchup; mustard; liquid chocolate; etc.) as for example of only ten grams or also twenty, thirty, fifty grams.

Next, explanation in two stages, of different Machines models transformers of initial packings in packings of three-dimensional geometric body.

1-Modelo A of Machine transformadora:

[0016] The first Stage: to cause in the initial packing of at least two faces, of an inductive and spontaneous way: one, two, three, four or more of the flaps or triangles that any initial packing possesses and, also, at the same time, that the initial packing transforms in the shape of three-dimensional geometric body.

[0017] By means of a few set of clamps that shape a perfect cubic cavity where the initial packing that is inside these clamps gets conceited when these clamps block it and compress or press for all its sides, so that this way, in a natural and spontaneous way, himself, he acquires the cubic form on having adapted itself this one to the cubic space that it has been about to shape across these clamps.

[0018] The second Stage: continued there will drive two impact clamps / bodies (6) arranged ones of a way perpendicular to the clamps self-centering and for below or not, of the two/one (as one wants) free clamps of top ceiling (3). These, they will be located just between the flaps or arisen triangles, and they will be driven by means of a pneumatic or electrical cylinder; in turn, these might be individuals, one for every side of the packing that contains the flaps, or but, be joined in the same pneumatic or electrical cylinder of double shoot and double effect, so that this way, they work simultaneously.

- they will fulfill two assignments: to help to that the packing acquires a form of perfect cubic figure, and to that the flaps or triangles, they have all, the same size and homogeneous form in every packing. Also, these will serve as it bases or supports so that the clamps of sealed and they shock cut against her.
- and finally, one, two, three or four will be driven actuators or electrical or pneumatic cylinders - one for every flaps - where, each of them, it will have incorporated a clamp of sealed or sealed and cut (8), which across heat (resistance; ultrasound; friction; laser) they will seal or seal and will cut (cutting) one, two, three or four of the flaps or triangles that had already arisen, spontaneously, in 1ªfase [to].

2-Modelo B1 and B2 of Machine transformers:

[0019] The first Stage: to cause in the initial packing of at least two faces, of an inductive and spontaneous way:

one, two, three, four or more of the flaps or triangles that any initial packing possesses and, also, at the same time, that the initial packing transforms in the shape of three-dimensional geometric body.

[0020] By means of one or more subjection clamps or for one or more sets of two or more clamps of subjection clamps, which will seize / block and / or immobilize the initial packing but being supported in him a pressure of constant force with adjustable muffling, towards the interior or inwards of the same initial packing, in which this one can be ready / placed in the position desired (in vertical; in horizontal knocked down; in vertical of side; vertical in different inclination degreess; etc.): for continued by the action of beating of a clamp / body of impact on one, two or more of the side sides perimetrales arise one or two flaps, or but also for beating of the contiguous areas of one, two, three, four or more apexes or peaks of the initial packing: arise from a natural and spontaneous way, a flaps.

[0021] At the same time, the initial packing gets conceited or increase of volume (as suflé), acquiring this way this one the form of three-dimensional geometric body to which we have wanted to be necessary.

[0022] The second Stage:

> Next, immediately later and so that it remains definitely with the form which one has wanted to give or be necessary three-dimensional geometric body: the clamps will be driven of sealed or sealed and cut (8), this way to seal or to seal and to cut the flaps or triangles: for the transverse line (or brought near) of the flaps that is doing contact or joining, the flaps and the trukor the rest of the packing.

3-Modelo D of Machine transformer by means of a robot:

[0023] The first Stage: to cause in the initial packing of at least two faces, of an inductive and spontaneous way: one, two, three, four or more of the flaps or triangles that any initial packing possesses and, also, at the same time, that the initial packing transforms in the shape of three-dimensional geometric body.

[0024] In that the claw of the robot that has subjection clamps takes hold or / and blocks and also it directs and/or manipulates to the initial packing, this way to lead one or more times any of the side sides or apexes of the initial packing: with / in / against / on one or more immobile clamps / bodies of impact or / and mobiles of one or two pieces, this way to cause one or two flaps every time.

[0025] The initial packing can be taken so much by the transverse area of the half or towards the half as by the same center, or also but: for any of its sides and/or ends it opposite put up of the side where the flaps or triangles are going to originate.

[0026] This clamp will have the breadth and length that loves or is needed like so that it should be possible to cause a flaps or triangle, which depending on the width of this one: To major width of the clamp / body of major impact it will be the flaps. For what, at the same time of there originate one or more of the flaps or triangles, the initial packing of at least two faces: there will get conceited the part that corresponds (to major flaps: major is the volume of the packing, because the size of the bundle diminishes but on the other hand there keeps on being the same quantity of of the stiff content inside) transforming this way, in an inductive / natural and spontaneous way, the initial packing into a packing with the form that loves of volumetric three-dimensional geometric body.

[0027] The second Stage: the flaps or triangles that have originated or those that wanted of these: by means of two clamps of sealed or sealed and cut that they line up, to seal or to be sealed and to cut transversely (or approximately) one, two, three, four or more of these flaps or triangles, for the side of this flaps that is exactly opposite the peak or apex, or said otherwise, for the area or the line that is doing contact or is in union so much of the flaps as also of the trunk or the rest of the packing already transformed in the shape of three-dimensional geometric body.

[0028] In all the previous cases or in any of the Procedures of the Invention, all they can cause the flaps simultaneously, or also in a random way: by turn, of two in two, of three in three, of four in four or of the quantity that existed.

[0029] To major caused, major flaps it is the volume of the trunk or the rest of the packing, since with the same content (fluid and with solid or without him) packed inside the packing: it diminishes or diminishes (the part that there corresponds for every flaps) the size of the bundle of the packing.

[0030] Depending on the flexible material that we use / use to make the initial packings how, also, of the type of model of vertical or horizontal machine of filling (available already on the market of nowadays) that makes the initial packings: packing initials will be obtained different, prepared with only plastically, plastically more aluminum or plastic more aluminum and more pasteboard, like also initial packings with major or less number of weldings: so much in the side sides perimetrals as longitudinal to half of one or / and two of the faces of the initial packing, in which also these can be ready in horizontal, vertical or in different inclination degrees.

4-Modelo E of Machine Transformers by means of two robots:

[0031] The first Stage: to cause in the initial packing of at least two faces, of an inductive and spontaneous way: one, two, three, four or more of the flaps or triangles that any initial packing possesses and, also, at the same time, that the initial packing transforms itsef in the shape of three-dimensional geometric body.

[0032] The first robot has or has fixed in its claw, one or more sets of two or more clamps of subjection.

[0033] The second robot has or has fixed or joined so much one, two or more sets doubly/ triple/fourfold of

clamps set as also anyone of the pieces, elements or devices of any of the Machines of transformation of initial packings in packings in 3D, of the invention.

[0034] The first robot of 5/6 axes, therefore, has the function to direct to the initial packing towards a certain fixed place and in the correct position [also also the robot, if it was the case or the machine transformers that it goes to use, can make to turn on itself to the packing: this way to place any of its side or sides in the position that wanted], once the initial packing is held - fixed-blocked and/or immobilized but with adjustable - adaptable muffling. - also three robots can be used: in the one that one takes, directs and/or immobilizes to the initial packing and another two robots that have clamps sets in its claws, strike with the impact clamp / body two of the sides (one opposite other) of the initial packing.

[0035] The second Stage: the same procedure as the explained one in the previous paragraph, in the Machine transformers by means of a robot.

5-Modelo F of Machine transformers of empty packings:

[0036] Transformers of initial packings of at least two faces, in packings of three-dimensional geometric body that in its alone interior contains air or / and gas. In this case, only, the Machine one tries to adapt / modify of packed in vertical/horizontal that makes the initial packings and that is available on the market of nowadays, so that instead of that it is possible to pack or to fill - (liquid / doughy) fluid and with occurred rarely / granulated / powder or without them, it is packed or there fills only inside the initial packings fluid (air or / and gas).

[0037] This will be obtained, placing cannulas or (pneumatic) filling bombs (arranged for the occasion), that insuflate air / gas inside the bags or packings that the same "machine in vertical"makes for sealed thermos flask, for what realizes the filling of air or / and gas exactly before there is realized the final welding that will seal and cause, finally, the initial packing of at least two faces. You are Machine vertical / horizontal that make initial packings: insuflate the air quantity that we wants or is needed in every case: according to the packing with form of geometric body that let's want to obtain, by means of any of the Machines of the invention.

[0038] In conclusion, the result of the forms of the packings in 3D there will be the same, but in this case: gaps will make packings in 3D, with only air packed in its interior, and that finally and at a later stage, will empty it will extract the air so that this way they serve as "basic packings", where once double and empty packagings, they are distributed to other plants of production of packings, which will have an adapted machine specially (cupping glasses it opens packings / bags; posicionadores; mouthpieces; cannulas; valves; filling bombs; etc.) that will be taking and one will opening every empty packing after other, for continued to pack//to fill in its interior the quantity desired of fluid (liquid / doughy or / and air / gas) and with solid / granulated / powder or without them.

[0039] Concluding, this way, the cycle of manufacture of this flexible empty basic packing.

- Also one can adhere / give in the top part of this type of packing a "stopper - dispenser" tetrabrik, for this way on the one hand: to allow an easy and practical one filled / stiff with the packing and, on the other hand: to facilitate the emptying of the air of the packing with form of three-dimensional geometric body.
- anyway, these "stoppers" are optional, since it would be enough, only, to introduce any substance or contained by some of the necks dispensers or projecting tops, which previously, would have been created for such an end or for the occasion. Therefore, the Machine in vertical of filling, it will perforate the plastic of any of the necks or projecting tops as dispensers, for continued to introduce for them what it is about to pack and, finally, once of these end of filling, concluding with the sealed one or sealed and of this neck, peak, top or projecting hole / mouth perforated.

[0040] **6**-Modelo G of Machine Transformer of packing in vertical: Vertical machine of sealed or sealed and cut of flaps or triangles for from initial packings of at least two faces that in its interior it contains fluids (liquid / doughy or / and air / gas) and with solid / granulated / powder or without them, in packings with form of volumetric three-dimensional geometric body. It comprises the elements and following devices:

[0041] This one machine is thought so that the initial packing should be placed and should be transformed, being this one in standing vertical position, where, also, all the clamps and elements that compose it are faced in movement and position, as regards the initial packing. In some of the cases, since it happens with the clamps, trap-door, platform or fixing bars will go suspended in the air and joined to the actuators that impel them, with the exception of the fixing bars that will go, only, suspended in the air; and in the cases, since it happens with elements or devices as the optical sensors or of infrared, air shooter, units of linear movement, cylinders of draft or cylinders will be supported or subject to columns or pillars plumbed in entire vertical position.

[0042] In turn, these columns to be able to regulate the level of height to which they should
be located: both the clamps (3,6,8) and the elements that compose it, take or have a few orifices of interior thread or without it, which these columns will cross from side to side forming parallel coupleds one under the other, occupying this way stretches and different heights, according to the transformation machinein vertical of an initial container into a cubic packing, which it goes to use.

[0043] Therefore, the clamps as any other element or device of the machine will be screwed or with any other system of anchoring (for example: props with orifices to introduce pins) to these props or columns so much in vertical as in horizontal. Also, these columns can appear by every machine in vertical: one [to a side straight, ahead

or behind the initial packing], two [I faced one of other one and to left and right of the clamp of subjection (3) or initial packing] or more than two [to left and right, ahead and behind some opposite others respectively].

[0044] The cylinders that are anchored or fixed straight in a column or platform, in some of the cases, they will have or they have a few orifices with interior thread or not and forming parallel couples or more than two, some after others. The screws will wind in the orifices with interior thread and props will go anchored in orifices without thread (fig18, 19, 20).

- in any case, both the screws and the orifices are designed to guarantee one perfect immobilization of the elements, devices or pieces that are subject to the columns and, at the same time, they will prevent the one that they could incline or tilt not even (the most minimal thing) towards any side.
- these clamps, elements or devices, also, can be anchored or fixed to the same columns, but being these in perfect horizontality position. These will hold or they will be moored of different forms: well screwed to a wall by means of a deck, welded to a metal iron, or cemented to a wall. All of them will be in perfect horizontalidad position without any inclination (bubble leveler).
- they can be added to this Machine in vertical, without being necessary, different elements, devices or pieces in multiple possible combinations in that, also, they can be built-in: one/two/three/four/five/six/seven or all simultaneously. Also any of these, they might appear in each of the machines and in some of the cases, for copy or being more than two.

[0045] The elements, devices or pieces are the following ones:

A) Trap-door (10fig9, 10, 11, 12, 13, 14) that is placed under the clamp of subjection (3) or of the initial packing, and is adaptable in height.
This one is driven by a cylinder linear (9) or of pneumatic or electrical draft and that, also, is anchored or fixed to one of the columns.
B) Fixing bars (11fig12, 13) that comprises two ways of supporting itself and of placing itself between the clamps of subjection (3):

b1) they are placed between the clamps with a few ceilings in the ends so that they do not fall down or separate.
b2) they are placed between the clamps but, also, they support to these fixing bars (11) a few cylindrical rods perpendicular to these, and that drill or they cross for a few orifices that are in the side ends of these fixing clamps (11).

C) Blockade fence (12fig10, 11) anchored or fixed in vertical on the trap-door forming with it an angle of 90 degreess.
They can have different heights, but limited always, to the space that could exist or stay between the clamp of subjection (3) and the trap-door (10). Also they will be placed, always, towards the opposite side of where the initial packing, it is introduced between the clamps.
D) Clamp guides (13fig18, 19) joined to the shoot of a linear cylinder (9) or of a cylinder of draft pneumatic or electrical (16) and, in turn, these, they are anchored or fixed so much to the columns in vertical as in horizontal.
This clamp (13) has form of straight line, or has, towards the half of this straight line, a curvature with an angle of 20th more or less.
E) Bristles sweeppers (14fig9, 10, 15) that are hooked or connected, to rim of one of two sides that has major length, of the trap-door (10).
These hair or bristles are semistiff with flexibility to move towards ahead and backwards.
F) Air shooter (15fig14) that one anchors and it fixes to the column, and placed
in height, towards half of the height in which the packing already is transformed in the shape of cubic figure .
It can go inside the column and stand out or not of the column, or go on the outside of the column and, also stand out or not of the column.
G) Draft cylinder / engine for tipper (16fig14,15,16,17) pneumatic or electrical that is anchored or fixed to one of the columns.
To the shoot of this cylinder of draft there are joined so much the cylinders that activate any of the clamps, any frame that is joined to any of the clamps as, also, straight to any of the clamps.
H) Units of linear movement (17fig20,21) pneumatic or electrical that is anchored or fixed to one of the columns, and they can do it in two ways:

h1) units of linear movement in couple that will move a platform (18) (17fig14,15) and that will be parallel and will do couple to left and right.
In the platform (18), in turn, the clamps (6,8) are placed or fixed well by means of a cylinder, straight across the clamp or for
way of a frame that they are joined to these clamps (6,8).
h2) unit of individual linear movement (17fig20) that will move the subjection clamp (3) and that will be placed, anchored or fixed to one of the columns.

I) optical sensors, of infrared or of force...
J) valves that control the movements and intensity of the cylinders.

7-Lines of welding the only and originals of the Packings transformed into forms of three-dimensional geometric body by means of any of the Machines transformers in 3D of the invention.

[0046] To welding line perimetral (1): in vertical, in horizontal or with different inclination degrees.

[0047] These lines of welding (1), they are ready or are placed with regard to the packings already transformed in the shape of volumetric figure in 3D: to the half or in the middle of every packing or every face of the packing, for what if we were cutting for this line of welding (1) to the packing: this one would split into two longitudinal always equal segments or equal halves, being these two halves and whenever we have to the packing opposite to us (see to the detail) and in standing vertical position: A twin part of the side of in front of the packing, and another twin part of the side of behind of the packing already transformed with the form of volumetric figure in 3D that it has been about to obtain or to be necessary.

[0048] These lines of welding (1), they are ready or can be placed with regard to the initial packings: in any of the side sides perimetrales (1) that could have the initial packing. Being able to have for every packing: one, two, three, four or all the side sides perimetrales (1) could have the initial packing whenever the initial packing has form of irregular figure, that is to say, that does not have form of square or of rectangle.

[0049] This line of welding (1) can leave with more or less millimeters of rough burrs/edges to itself or small flap, always depending this on the type of packing that is transformed in 3D: that is to say: if we want to obtain a flexible cubic packing so that it serves as ice block, there will be left a line of welding (1) of less size as for example of approximately three millimeters wide, for an esthetic motive; If on the contrary, we want to make packings in 3D of those who are packed in its interior products that are going to be consumed or extracted from the packing, they will be left by the milimeters that we want or small flaps or of rough edge, as for example of approximately five, six, seven or more millimeters.

[0050] More extended information: in the following paragraph with the n° 8.

[0051] B-The line of welding perpendicular (2): as turned out from the sealed one or sealed and of the flaps or triangle. He can have had in every packing transformed in 3D: all the flaps or triangles could be caused, sealed or sealed and cut (8).

[0052] Also, in the center of this line of welding (2) it is possible to appreciate the detail of how just there exist a few marks perpendicular to the same line of welding (2), because on having originated, having been sealed or having been sealed and after the flaps or triangle are cut: they cross the welding line perimetrales (1) [done by the vertical / horizontal Machines of filling that make initial packings of at least two faces] with the line of welding perpendicular (2).

[0053] C-Las lines of welding of edge (3): small flaps or rough edges created by the system of pinching clamps(19).

[0054] These weldings, they are optional, since they are realized once of having already created or transforming the initial packing in a packing of volumetric three-dimensional geometric body of three or more faces.

[0055] These have the function to provide - moreover if it fits - major stability, rigidity or consistency to the packing transformed in 3D.

[0056] For this motive, it is possible to choose all the lines of welding (4) wanted on any of the edges of a packing transformed in 3D, for what these can be vertical, horizontal or of any inclination degrees.

[0057] D-Line of longitudinal welding (4): it is ready vertically and to half of one or two faces of the initial packing of at least two faces, therefore these are never transverse or perimetrales as it happens with the welding line perimetral (1). There can be for every initial packing: one or two lines of welding (4) [one for every face of the initial packing].

[0058] E-line of multiform welding (5): described and explained in the following paragraphs with the number 9 and 10.

Next, different processes and technicals of the invention

8-Lines of welding of sealed and cut flaps, and multiform.

[0059] In the packings already transformed to forms of three-dimensional geometric body: there can be appreciated the only and typical lines of welding, like for example the lines of welding as the result of the sealed one or sealed and flaps cut , or also the multiform welding lines in the one that is sealed and cuts - he foresaw after the initial packing was transformed - on plane the parts that wanted of the initial packing.

[0060] Depending on the flaps or triangles that originate, seal and cut of an initial packing, they can be appreciated in the faces of the packing already transformed where there have been one or more sealed and cut flaps, the silhouette of the following lines of welding from a point of view cenitas:

- the form of one <H>, being two parallel ice lollies (lollies sticks the line of welding of the sealed one and cut of two flaps, and the transverse ice lolly stick being the welding line perimetral in horizontal of sealed and cut of the part of more above of the initial packing.
- the form of one <T>, being the transverse ice lolly stick the line of welding of the sealed one and cut of a flaps, and the ice lolly in vertical being the welding line perimetral in horizontal of sealed and cut of the part of more above of the initial packing.
- the form of one <I>, being the ice lolly stick in vertical the welding line perimetral in horizontal of sealed and cut of the lateral side perimetral of the part of

more above of the initial packing.

- the lines of welding of the sealed one or sealed and cut of the flaps, they can be realized also not rectilinear, that is to say: curvilinear, semicircular, elliptical, diagonal, sinuous, of saw teeth, circular saws, etc.
- the welding lines by means of multiform clamps, which seal and cut the parts that love of the initial packings, can be realized also of very diverse forms (rectilinear in horizontal, vertical, diagonals or in different inclination degreess; curvilinear; semicircular; elliptical; sinuous; of saw tops; circular letters; etc.

9-Multiform clamps of sealed and cut on plane.

[0061] A process for which, any of the initial packings of at least two faces, they are going to transform in packings of multiple and varied forms of three-dimensional geometric body (the only and spectacular packings for its forms polihedral complex and because, also, in most cases, necks or / and projecting tops / peaks are created as dispenser, with that they can serve one to themselves the content packed inside the packing: on having torn the crack that previously has been realized in the rough edge or small flap perimetral that tacks to any of these tops or peaks.

[0062] Therefore, it is a question of realizing only to the initial packing - also one can once the initial packing has been already transformed, but never on the face where flaps have originated cut or sealed and cuts with a set of two clamps (FIG22, 23, 24) [one of sealed and cut (8) and other one of impact (6) or normal clamp: that line up in parallel and that, on having been driven, are placed on plane by both faces of the initial packing], one or more of the parts that love or of the transverse part of the part of above (also it is possible to realize in the lower part or in any of the sides that it could have the initial packing and adding the sides that wanted) of the initial packing, in which it can be caught to squash two or three of the contiguous sides if it is a question of an initial packing of four sides and of square or rectangular form, or but also of more contiguous sides, if it is a question of an initial packing of irregular form in which there are more than four sides / apexes.

[0063] They can become sealed and cuts of multiple and varied forms and combinations between them, of different types different from lines: oblique (FIG22/23), rectilinear, curved, curvilinear, elliptical, diagonal, sinuous, of saw, etc.

[0064] Also there can be circular saws and of the size that loves, taking place with it: an orifice that can serve like a handle in / where it is possible to hang to the packing already transformed into packing of three-dimensional geometric body.

- this procedure and processes explained in the previous paragraph, in which there are cut the parts that one wants of the initial packing, also it is possible to do - to equal method / mechanism / functioning - connecting or replacing straight this type of multiform and multidirectional clamps, to the sets of two clamps of the Machines of filling or packed in vertical: that are those who make the initial packing of at least two faces.

10-Impact clamps (6) and of sealed or sealed and cut (8) multiform.

[0065] The sealed one or sealed and cut of the flaps or triangles that in general it is transverse and that are realized by the area or line that is in union or doing contact between the flaps and the trunk or the rest of the packing: it can be realized or originate being is not only rectilinear, but also it can be in diagonal, in curve, of elliptical curve or of semicircle and hollow (looking at its apexes inwards) or convex (looking it was doing out), in the shape of saw tops, etc. Depending on an option or other one and also if it is realized in four (or the maximum quantity that they could originate) of the flaps or only in one, two or three of these: we will obtain a packing that although it has or differs principally, the form of the packing already transformed to the form of three-dimensional geometric body that one was trying from a beginning to make, nevertheless these lines of welding of diverse and irregular forms, will transmit or produce an effect on the packing, which will do that the volume, the form or the silhouette of the packing transforms again. In most cases, the already transformed packing will alter again its form (more rounded, vaulted; with apexes; peaks or projecting tops; etc.) although not in much, since the packing will maintain or there will keep on appreciating in it the same form of the first transformation; but in other cases, the already transformed packing will alter completely its form, since it will not continue or will be supported with the same form of the first transformation, as for example it happens: if we use clamps of sealed or sealed and cut and a clamp / body of impact in which two types of clamps (6,8) have the same form of elliptical semicircle arranged in horizontal position with regard to every flaps or triangle, since these on having been driven and after one mates with other one: they are going to seal or seal and cut four of the flaps doing that every flaps arches towards out, with which to do goes or is going to produce the rounding effect in the initial packing (of two faces and four side sides and with form of square rectangle: causing with it, that the initial packing transforms into a three-dimensional geometric body with form of cylinder or of elliptical cylinder.

11-Ejector clamps (20FIG34):

[0066] A process or method to control the exact fluid quantity (liquid / doughy or / and air / gas) that we want that it is packed inside the initial packing.

[0067] Therefore, it will be regulated or it will control the size of the bundle of initial packing with regard to the

quantity of fluid (liquid / doughy or / and air / gas) that we want that it is packed inside the initial packing of at least two faces. - this is possible, on having installed for below and along with the clamps or the clamp of sealed or sealed and cut: a ejector clamp (20) arranged in horizontal position and standing out slightly more with regard to the clamp of sealed (8) or sealed and cut (8), this way to be able to exercise a crushing of a controlled and adjustable way (to the exact measurement that it is about to predispose) on two faces of out of the initial packing of at least two faces.

[0068] This way, there will be expelled up and also of the interior of the initial packing, which is still not sealed on the part of above, the quantity that we want of fluid (liquid / doughy or / and air / gas).

[0069] In turn and at the same time, also we expel completely or in its majority: any bubble of residual air that could stay or be inside the initial packing of at least two faces.

- therefore, this method has two functions: to calculate the volumetria that let's want that it has the initial packing and, also, reducing or removing of the interior of the initial packing the air bubbles.

12-Ejector clamps (20) of flaps or triangles.

[0070] Optionally, the same system already explained in the previous paragraph, also it is possible to use or to apply with each of the flaps or triangles before these are sealed or sealed and cut, on having joined or after the clamp mates of sealed or sealed and cut with / together with the impact clamp / body. Although in this case it will not be so necessary: if the clamps (6,8) are equal or more wide or big than the size of the flaps or triangle that has originated, since in a natural and spontaneous way, two faces of the flaps (after the clamp joins of sealed / sealed and cut with the impact clamp / body) bend and are joined completely, expelling this way the content (packed inside) that he could remain caught between two faces of the flaps. Therefore, this process can provide in a more effective way, moreover if it fits, the fact that there does not stay absolutely any fluid (liquid / doughy or / and anger / gas) or solidly caught inside the flaps or triangle.

13-Pinching Clamps (19).

[0071] I have developed, also, a system or process so that the packings, once they have been already transformed to the form of geometric body that wanted, to confer major stability, rigidity or consistency awards them (although it is not necessary), by means of what I have named pinchings clamps and that next I describe:

[0072] It is a question of realizing, therefore, to any of the edges a rectangular cubic, prismatic packing or polyhedral irregularly: a crease or hem in which a rough edge and/or line of welding always stays standing out was doing out of the edge. This is obtained, by means of a set of pinching clamps (one of impact and other one of sealed), that they will catch (the part that desired) to left and right of the edge, therefore it will cause the fact that a rough edge or line of welding arises standing out of the packing.

[0073] And whenever the sealed one of the packing is guaranteed, it is possible to leave this resultant rough edge with the millimeters that desired standing out of the packing.

ADVANTAGES OF THE INVENTION

[0074] The first one: that rectangular cubic and prismatic packings can be made (if four of the flaps are sealed) or polyhedrals irregular (if one, two or three of the flaps are sealed), using only initial packings made with plastic, since the lines of welding of the process of sealed and cut of the flaps, he awards to the packing rigidity and consistency. Therefore, there is not necessary the use of materials as the pasteboard punching or marked with cracks already prearranged in the plates, which later in - bobinan and get in the vertical machines of packed.

- the second one: that we can make this type of completely volumetric packing of very small or limited sizes, being this a big advantage if there are packed products as sauces, water so that they serve as little cubes of ices of plastic, perfumes, etc. We must clarify, also, that it is the only one that can make up to the date of today volumetric packings of plastic type film, of very small size or limited dimensions, as there can be the 15,20,25,30,35,40,45,50 millilitres packings or grams.
- the third one: that, on not having contained flaps, all the faces of the packing are smooth there being obtained, this way, packings more hygienic that will generate less residues, and those that it generates will be able to be easily recycable since there will be used neither glue, nor pasteboard or pulp of the wood of the Northerly forests, as it happens in the system procedures of packed like that of Tetrabrik ®, where, also, a lot of energy is consumed on having extracted it and to distribute it.
- the fourth one: that it is possible to enable or to adapt, also, this process to other systems or production processes like the Tetrabrik ®, SIG ® or ipi ®, him being able, this way, to contribute benefits in the field of the logistics, since flaps will not have to take the packings of these systems previously renowned, they achieving with it, that these occupy less space and weigh less.
- the fith one: that products can be made at industrial level like:

  a) packings of three-dimensional geometric body with the form for example of cube, rectan-

gular prism, of cylinder or of irregular polyhedrons: of a limited size as for example 20x20mm, 30x60mm, 40x20mm, 70x70mm; and in that only it goes to tipple in its interior water and that, also, all its faces are smooth without flaps or triangles: we obtain a transformed packing that is suitable and very useful to use it as an Ice block, once this one is frozen this way to use it at Inpowderrial level in the field of the feeding or in human transplantations, and at a very low cost.

These packings ice cube, they are completely innocuous because they are going to be sterilized by means of autoclave and wrapped in the second bundle.

b) Mini-packings of sauces of 20/25/30/50ml that will be used as the envelopes or sachets of two faces that contain for example ketchup or mustard. In this case, it will be very notable in this new type of mini-packing, two qualities or characteristics that the traditional ones do not possess, as they are: the fact of being able to maintain themselves standing and, also, to the form of its figure entirely cubic or completely volumetric, being obtained by it, be dosed better since it is possible to give to the content of interior, major pressure. Also, it will be possible to use more comfortably and all the times wanted, since they will be able to be supported or settle, themselves, in vertical.

Also, this will bear that generate less residues, because cubic mini-packings of 20/25/50/etc will be able to be made..., that could substitute the 9 grams traditional ones, for what, one of the new cubic mini-packings would substitute three envelopes of the traditional ones of two faces.

c) Cubic packings for the sector of the sale of fresh milk, since they use sealed bags of two faces of only plastic, and that easily will be able to be transformed into cubic packings with the new machines of this invention.

- the sixth one are other significant advantages:

  a) To increase the consistency - rigidity to packings of major size (½ and 1Litro) that have been made by only plastic and for products like: drinks, broths, olives, oils, mineral oils, liquid soaps, perfumes...

  b) It would publicize, since it will contain major space to exhibit the publicity, owed this to that none of its faces will take flaps and, also, because these new cubic packings can be made - if this way it is predisposed - with a more square form, a major visual impact being obtained, this way.

  c) For making a saving possible in logistics of 25 % both in transport and in the storage, since the packings will not take flaps, achieving with this, that all the faces of the new cubic packings are completely smooth, circumstances these, which do that they could join or be piled up completely, without staying space between them.

  d) On having dosed, after there do not go out to stumbles the liquid substances of the interior of the cubic packing, since it is possible to make - if this way it is predisposed - only, with flexible materials rigid at all like the plastic (without pasteboard), allowing this circumstance that the material of the packing adapts itself with rapidity to the space or to the void that arises or stays inside the packing, when it is going out or there to being dosed the liquid substance or fluid of the interior, they achieving this way, that the product or liquid substance of the interior does not go out to stumbles. Example: four messmates sit down to eat a few hamburgers in an establishment, and instead of asking for eight envelopes of 9grs of ketchup or sauce, ask three of 25grs, so that this way, also, of not having to get dirty the hands, they could be dosing little by little, since this mini cubic packing without flaps, will be able to be deposited on the table all the times love.

  e) To make cubic packings with form of regular hexahedron.

  f) The versatility of the machines transformers of the invention, since with the same machine without having to add new elements or pieces can be made of very different forms and sizes of three-dimensional geometric bodies.

  g) The machines of the invention, together with other already existing machines in other productive processes of manufacture and filling of packings, will integrate into the same production system in chain, like part of an integral solution, making this way the integration possible (mating) of this new procedure and machines of the invention.

EXHIBITION OF AWAY OF ACHIEVEMENT OF THE INVENTION

[0075]

Fig1: it shows a perspective as a whole of the machine of the model [to].

Fig2: it shows a sight in detail of the elevation of the machine of the model [to].

Fig3: it shows a sight in plant of the system of subjection of packings with adjustable muffling in horizontal: models [b1/b2].

Fig4: it shows a sight in plant of the system of subjection of packings with adjustable muffling in vertical: models [b1/b2].

Fig5: it shows a sight in plant of the machine of cubic

transformation of the model [b1] with clamps fourfold / triple: sealed / cut and I crash.

Fig6: it shows a sight in plant of the machine of cubic transformation of the model [b2] with clamps in diagonal of sealed / cut and I crash.

Fig7: a sight shows in detail of the elevation of the machine of the model [c] that is in vertical, where a packing or initial bag of two faces and sealed with water in its interior, is caught between the clamps of subjection (3) or starting point, or of beginning.

Every set of triple clamp (6,8) is joined to a shoot of a pneumatic / electrical cylinder; in turn, these two sets (above and below) are joined to the same frame that will be impelled by another pneumatic cylinder that will have the function to make them carry back, to make possible this way, that there could be space exactly on the subjection clamps like so that the arm of a robot or another device, it places to the initial packing in the exact place or in indicated of between these clamps (3).

Two clamps / bodies of impact (6) have form of rectangular prism.

Fig8: it shows a sight in detail of the elevation of the machine of the model [c] of figura7, but in this case two clamps / bodies of impact (6) have driven so much the same as above as the same as below, with what the initial packing has got conceited, acquiring this way, it forms of cubic figure but with four flaps still without sealing nor to cut to (cut).

Fig9: it shows the same sight in detail of the elevation of the machine of the model [c] of figura7, but in this case there has been added to it a trap-door (10), which will be placed just under the clamps of subjection (3); this way, it will facilitate more if it fits, that the initial packings place in straight right angle and, also, to the correct height with regard to these clamps (3), that is to say: towards the half just of the initial packing.

Fig10: it shows a sight in detail of the elevation of the machine of the model [c] where, also, a trap-door (10) has been added to support and to level to the height, that the initial packing should be. This one has incorporated bristles swippers14) that they will guarantee that the already cubic packing, he does not remain deposited on the clamps (6,8) and, also, on this trap-door (10) transversely from side to side, a fence of blockade (12) that it will help to that the initial packing that has been introduced by the side street and over the trap-door, is given birth just: in the place where it will be or fence of blockade (12) will collide slightly with this one, since the set of three clamps of the part of above has not cylinders with which to be able to move to enable, this way, free space on the subjection clamp.

Fig11: it shows the sight in detail of the elevation of the machine of figure 10, but that in this case have driven the clamps / bodies of impact (6), with what the initial packing has got conceited, acquiring, this way, the form of cubic figure but with four flaps still without sealing nor to cut.

Fig12: it shows a sight in detail of the elevation of a machine of the model [c] with the clamps / bodies of impact (6) with form of rectangular prism. Also, there has been added a trap-door (10) and two fixing bars (11) that will delimit the exact place where the initial packing will have to be deposited.

Two clamps sets triple (6,8) are joined in the same frame that will be driven by the same cylinder, being enabled this way, sufficient space so that the initial packing could be deposited without difficulty between the fixing bars (11) and on the trap-door (10).

Fig13: it shows the same sight in detail of the elevation of the machine model [c] of figura12 but with the difference of which the clamps of sealed and cut (8) they are joined to the clamp / body of impact (6) by means of a few pneumatic or electrical mini-cylinders that precisely are fixed, to two of the side faces (previous and later) of this one.

The trap-door (10) can be opened towards different directions.

We have added, also, two vertical supports to itself to the sides, so that this way, there could support in him the sensor of infrared or optical (1) and the rods that support the fixing bars (11) and, also, it will serve so that there could rest the trap-door (10) and the sbjection clamps(3).

Fig14: it shows a sight in detail of the elevation of a machine of the model [c], to which it has been added by an air shooter (15) that it will dismiss towards out or towards a conveyor belt (it will pass exactly for below, to the packing already transformed into a new form of cubic figure.

Also, the set of clamps (6,8) of the part of above is joined to a cylinder / engine of draft for tipper (16), and the set of clamps (6,8) of the lower part is static anchored to the columns and of cylindrical form (more adapted for initial packings of big sizes like those of half a liter or one liter).

Fig15: it shows a sight in detail of the elevation of a machine of the model [c],

to which (14) has added a trap-door (10) and a few bristles barredoras, but also, the set of clamps (6,8) of above is joined to the shoot of a cylinder / engine of draft for tipper (16), so that this way, space could be enabled, as so that the initial packing could be introduced between the subjection clamps or to the point of set or of beginning.

Fig16: it shows a sight in detail of the elevation of a machine of the model [c], in that only there is a triple set of clamps (6,8), where the clamp of impact (6) performs cylindrical form; these are joined to the same shoot of a cylinder / engine of draft for tipper (16) with what will be able to move a quarter of draft up and down. Also, also, the clamp of subjection (3) that is joined to a shoot of a pneumatic / electrical cylinder in vertical position, it will be possible to move

up or below to liberate, this way, the sufficient space so that the initial packing could to be thrown towards a conveyor belt that opportunely will pass below this machine.

Fig17: it shows a sight in detail of the elevation of the machine of the model [c], that takes two sets of triple clamps with form of rectangular prism and that in turn are fixed each one to the shoot of a cylinder / engine of draft.

In this case, they will only be sealed and will cut two flaps, being obtained this way, a cubic packing with form of figure of a helmet of a ship.

Fig18: it shows a sight in detail of the elevation of the machine of the model [c], that only takes clamps static (6,8) (that cannot move not up nor down) in the lower part, but where, also, two clamps of sealed and cut (8) each of them are anchored, to one of two columns that support the machine in themselves. The only clamp / body of impact that exists is cylindrical (6) and, also, also, it is anchored to the columns but in an independent way, and that in this case, it looks like a sail in V.

The clamp guides it is joined to the shoot of a cylinder of draft.

As in a figura19, it is not necessary that it is this one, rectilinear.

Fig19: it shows a sight in detail of the elevation of a machine of the model [c], that only takes a triple set of clamps static (6,8) in the lower part. The impact clamp / body is cylindrical (6). The clamp of subjection (3) will be able to move, also, up and down, to allow, this way, that to be able to be expelled the initial packing towards out - finally it will fall down down - for a clamp it guides (13) joined a shoot of a pneumatic / electrical cylinder and, that in this case, is in straight line and with form of rectangular racket, although well it might have, towards half of this straight line, a curvature with an angle of 20th more or less, conditioned this way, so that the initial packing already transformed into a new form of cubic figure, it goes out dismissed it pushes for the clamp it guides (13) in straight line.

Fig20: it shows a sight in detail of the elevation of the same machine as that of figure 18, but that in this case, there has been added to him a unit of linear movement (17) who will drive or move with a left movement to right to the clamps of subjection (3), with the only purpose - once of having already transformed the initial packing into a packing with the form of cubic figure - of displacing to this new packing so that it is not exactly on the clamps (6,8) when the clamp of subjection (3) is opened, so that this one new cubic packing is deposited or falls down down or towards a conveyor belt that opportunely will have settled exactly below.

Fig 21: it shows a sight in detail of the elevation of the same machine that is in figure 20, but in this case, has added two units of linear movement (17) parallel bars to left and right, since they will have to displace in the part of above to a set of triple clamp (6,8) that precisely, in this case, all the set of clamps (6,8) is joined to the platform by means of a central pneumatic or electrical cylinder in vertical, that will be anchored to this one, with (adjustable) screws to the halfway line and central point of this platform; although in fact, they might go every clamp (6,8) separately, in an independent way, anchored to the platform on the same area of the half or intermediate longitudinal line (the one that it divides in two equal halves to this platform). These two units of linear movement with platform only fulfill the function to enable or to leave a free space exactly on the clamp of subjection (3), so that this way, the initial packing could be deposited or

placed between these subjection clamps or if it is preferred in the point of initial set or at beginning.

Fig22: Set of two multiform clamps of rectilinear three arranged in different directions, which are going to seal and cut (cutting) for two faces of the initial packing, this way to create multiple forms of irregular polyhedrons and, also, projecting tops or necks dispensers: in the packings that later will be transformed into volumetric packings of form of three-dimensional geometric body.

This sectional part, once this packing is transformed on having originated, having been sealed and having been cut in it: two flaps of the part of below, this initial packing goes to transform to the form of three-dimensional geometric body of the figure number 8.

Fig23a: Set of two multiform clamps of rectilinear only one arranged in diagonal, in that this one is sealing and cutting for two faces of the initial packing, which has four sides and square form.

This sectional part, once in the lateral side that does of base of this packing they originate, seal or seal and cut two flaps (to left and right): this initial packing goes to transform to the form of three-dimensional geometric body of the figure number 28.

Fig23b: the Set of two multiform clamps (parallel bars and twins of rectilinear only one arranged in diagonal) and the square initial packing: corresponding to the set of clamps and to the initial packing represented in the 23rd figure, in which it is sealed and cutting for two faces and in two of its contiguous side sides of this initial packing.

Fig24: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to that of a Casserole.

The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, more across that to the high thing), since it has sealed and cut him with multiform clamps by its two faces and on the part of above of this one, as it is indicated by the lines of welding (5); in the part of further down of the initial packing, it has sealed and cut the rectilinear

one arranged in horizontal position corresponding to the line of welding (1).

Later it has originated, sealed and cut two flaps or triangles [lines of welding (2)] in the lateral side that does as a base: therefore it has transformed this initial packing, in a packing polyhedral irregular of geometric body in 3D with form similar to that of a Casserole.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side on the left as at the right side.

Fig25a: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to that of a Body of Bison / cow.

The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, more across that to the high thing), since it has sealed and cut this one with multiform clamps by its two faces and on the part of above, as it is indicated by the lines of welding (5); in the part of further down of the initial packing, there has sealed and cut the rectilinear one arranged in horizontal position corresponding to the welding line perimetral (1).

Later, to this initial packing it has originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base: therefore it has transformed this initial packing into a packing polyhedral irregularly of geometric body in 3D with form similar to that of a Body of a Bison or of a Cow.

As another option, the number 1 (discarding the number 5) of the side side of the part of more above of the packing, indicates that from a beginning - before being transformed - this initial packing had the form of a square or of a rectangle, for what the sealed one and cut by two faces corresponding to the line of welding (5) in vertical of the side of the right of the packing: it has been realized at a later stage with multiform clamps, once the packing had been already transformed by form of three-dimensional geometric body.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig25b: the same packing that that of the figure 25, but in this case the sealed one has been realized and cut more with multiform clamps, as it is appreciated in the line of welding (5) in diagonal that is looking down, in the part of the left and of more above of this packing polyhedral irregularly.

This line of welding (5) can be realized: at the same time of the initial packing is made, or also but, once the initial packing has been already transformed into three-dimensional geometric body.

Fig26: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to that of a Dinosaur.

The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, more across that high or more square than rectangular), since it has sealed and cut this one by both faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1).

Fig27: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with form similar to that of a Pitcher.

The initial packing of which it breaks to be transformed, has an irregular form (not of four sides in angles rectum and, in this case, more across that high or more square than rectangular), since the rectilinear one has sealed and cut this one in diagonal with few degreess of inclination (of approximately 10 or 15) with a set of two multiform clamps: two contiguous side sides of the part of above (well of the side of the left or of the side of the right), as it is indicated by the line of welding (5); in the part of further down of the initial packing, there has sealed and cut the rectilinear one arranged in horizontal position, corresponding to the welding line perimetral (1).

Later, to this initial packing he has originated, sealed and been cut by three flaps or triangles [lines of welding (2)]: two of the side side of the part of further down that does of base, and a (well in the side of the left or in the side of the right) in the side side or in the part of more above of this packing (or of the initial packing).

Like another option, also it is possible to seal and to cut once the packing has been already transformed in the shape of three-dimensional geometric body: with a set of two multiform clamps with the same form, this way to realize the same line of welding (5) or rectilinear in diagonal of approximately 10 or 15 degreess of inclination, already explained previously.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig28: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron,

with form similar to that of a House with roof to three waters.

The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, more across that high or more square than rectangular), since it has sealed and cut this one by both faces and on the part of above with multiform clamps: two rectilinear ones in diagonal, as it is indicated by the lines of welding (5); in the part of further down of the initial packing, the rectilinear one has sealed and cut in horizontal correspondent to the welding line perimetral (1).

Later, to this packing he has originated, sealed and been cut by three flaps or triangles [lines of welding (2)]: two of the side side of the part of further down that does of base, and a well in the side of the left or in the side of the right of the part of more above of this packing (or of the initial packing).

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig29: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to that of a Flying saucer. The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, more to the high thing that breadth or more rectangular than square), since it has sealed and cut this one by both faces and on the part of above with multiform clamps: two rectilinear ones in diagonal, as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one has sealed and cut in horizontal correspondent to the welding line perimetral (1).

Later, in this initial packing they have originated, sealed and cut two flaps or triangles [lines of welding (2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to that of a Flying saucer.

As another option, the number 1 (discarding others two numbers 5) of the side side of the part of more above of the packing: it indicates that from a beginning and before being transformed, this initial packing had the form of a square or of a rectangle, for what the sealed one and cut by two faces corresponding to the lines of welding (5) in diagonal of the side of the left and right of the packing: it has been realized at a later stage with multiform clamps, once the packing had been already transformed in 3D.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig30: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to that of a hull of a ship, but turned or of the flapse.

The initial packing of which it breaks to be transformed, has regular form (of four sides with all its straight angles and more across than high place), since it has sealed and cut this one by both faces so much in the part of above like the lower one: with the rectilinear one in horizontal correspondent to the welding line perimetral (1).

Later, in this initial packing it has originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to that of the Helmet of a ship, but of the flapse or turned.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig31 a: packing transformed in the shape of three-dimensional geometric body with the form of a rectangular Prism, higher than wide.

The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum), since this one has rectangular form; in the part of further down and of more above of the initial packing, the rectilinear one has sealed and cut in horizontal position, corresponding to the line of welding perimetral (1).

Later, to this initial packing he has originated, sealed and been cut by four flaps or triangles [welding lines (2)]: two of them so much in the side side (or in two of the faces of the packing already transformed into rectangular Prism or in 3D) of the part of further down as in the same as more above.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) with longitudinal lines of welding (4) of the face of ahead and/or of the face of behind, and with lines of welding (1) rectilinear arranged in vertical in the side side of the left and/or of the right of the initial packing not also.

To this packing Parallelepiped, there him can adhere a stopper or a straw of those of absorbing, whenever in the face of above previously an orifice has been realized where to introduce the straw or where the

stiff content could go out inside like for example a drink.

Fig31 b: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron with a form similar to that of a jug.

The initial packing of which it breaks to be transformed, has an irregular form (not of four sides in angles right) rectangular (two side sides of the sides have three times major length than the side sides of above and below), since the rectilinear one has sealed and cut this one in diagonal with few inclination degreess (of approximately 10 or 15) with a set of two multiform clamps: two contiguous side sides of the part of more above (well of the side of the left or of the side of the right), as it is indicated by the line of welding (5); in the part of further down of the initial packing, there has sealed and cut the rectilinear one arranged in horizontal position, corresponding to the welding line perimetral (1).

Later, to this initial packing it has originated, sealed and been cut by three flaps or triangles [lines of welding (2)]: two of the side side of the part of further down that does of base, and a (another in the side of the left or in the side of the right) in the side side or in the part of more above of this packing (or of the initial packing).

Like another option, also it is possible to seal and to cut once the packing has been already transformed in the shape of three-dimensional geometric body: with a set of two multiform clamps with the same form, this way to realize the same line of welding (5) or rectilinear in diagonal of approximately 10 or 15 degreess of inclination, already explained previously.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig32: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with form similar to that of a magic Lamp.

The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum and, in this case, more across than high place), since it has square or rectangular form to this one; in the part of further down how in the part of more above of the initial packing, has sealed and cut the rectilinear one arranged in horizontal position, correspondents to the lines of welding perimetral (1).

Later, to this initial packing it has originated, sealed and been cut by three flaps or triangles [lines of welding (2)]: two of the side side of the part of further down that does of base, and a (well in the side of the left or in the side of the right) in the side side or in the part of more above of this packing (or of the initial packing).

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig33: packing transformed in the shape of three-dimensional geometric body of regular polyhedron, with the form of a Cube.

The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum), since this one has square form; in the part of further down and of more above of the initial packing, the rectilinear one has sealed and cut in horizontal position, corresponding to the line of welding perimetral (1).

Later, to this initial packing it has originated, sealed and been cut by four flaps or triangles [welding lines (2)]: two of them so much in the side side (or in two of the faces of the packing already transformed into a cube or in 3D) of the part of further down as in the same as more above of this initial packing.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) with longitudinal lines of welding (4) of the face of ahead and/or of the face of behind, and with lines of welding (1) rectilinear arranged in vertical in the side side of the left and/or of the right of the initial packing not also.

Fig34: Set of two ejector clamps (20) twins who line up and who can be driven by means of a linear clamp (9) or draft (16) or double shoot and double effect.

In the drawing it is appreciated, how before two clamps are driven of sealed and cut that they are placed exactly on the ejector clamps, two ejector clamps (20) have already been driven and have begun to squash two faces of the initial packing, which is just in way and between these two ejector clamps (20).

Fig35: a clamp / body of immobile impact and two clamps sealed (8) or sealed and cut (8) that line up placed to the left and right respectively of the clamp / body of impact that in this case is immobile.

Two clamps of sealed or sealed and cut (8) shoot and double effect can be driven by means of a linear clamp (9) or draft (16) or tweezer / double.

In the drawing it is appreciated, how before (8) drive two clamps of sealed or sealed and it cuts (8) that they will seal or seal and cut two flaps or arisen triangles, it is just on the impact clamp / body and arranged in vertical position: an initial packing, in which its side side of the part of further down, is Incrusted between the clamp / body of immobile impact, having originated this way two flaps or triangles to every side (to left and right) of the clamp / body of immobile

impact.
This initial packing could have placed just above or on of the clamp of impact, of the following ways:

- falling down straight and to the gap from a conveyor belt or also but from a vertical Machine of filling that makes initial packings at least two faces, which are placed strategically exactly above.
- directed by the claw of the arm of a robot, which previously it has taken and/or blocked to this initial packing for the area or part of above, this way to direct this one: against or on the clamp / body of impact (6).

Fig36: a bag or initial packing of pipe of two faces with liquid substance or air in its interior, being this one of two stamps (1) or weldings and made by the vertical Machines of packed of liquid already existing the market.
Fig37: it shows a perspective as a whole of the elevation of a packing of six faces, being in this case of plastic. The cubic packing belongs to the sector of the "Packaging", and ride given, in the top part, a stopper type tetrabrik ®. In this concrete case, this new flexible cubic packing, it does not take any rough edge or additional projecting rim in any of the edges; only it goes, a central welding (1) arrives and below belonging to the stamps of the initial packing (fig35) of two faces, and four lines of welding or rough edges (2) of four flaps or triangles that have been sealed and cut, because it has been submitted, this initial packing, to the cubic transformation by any of Machines transformers of the invention.
Fig38: it shows the same perspective as a whole of the same type of cubic packing as that of the previous figure, but that in this case, has less height and is more horizontal.
Fig39: it shows a sight of an elevation of a flexible cubic packing of less size, which is conceived this way, so that it could serve like ice block, therefore in its interior, it will contain, just, waters down. It is necessary to emphasize that it has been made, deliberately, so that scarcely the corresponding welding lines are appreciated so much to those of the sealed one and cut of four flaps (2) like, also, two head offices corresponding to two stamps (1) or weldings of the initial packing (fig35). This it stems, from the fact that it has been realized after the sealed one with the line of welding, a cut much fitted this way to cut almost completely the rough edge resultant from every weldings (2).
Also, in this concrete case, we have made it - without being obligatory - with form of figure of regular hexahedron, or if he loves, of a perfect cube.
Fig40: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with form similar to that of a magic Lamp.
The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum and, in this case, more across), since this one has rectangular form, in that the length of the width of the face that exists as a base: it is still the half or minor that the length of height of the packing; in the part of further down of the initial packing, the rectilinear one has sealed and cut in horizontal position, corresponding to the line of welding perimetral (1).
Later, to this initial packing he has originated, sealed and been cut by three flaps or triangles [welding lines (2)]: two of the side side of the part of further down that does of base, and (well in the side of the left or in the side of the right) in the lateral side or in the part of more above of this packing (or of the initial packing).
Also, in two side sides (where they have not originated, sealed and cut a flaps) parallels of the face that does of base: they have originated and sealed with a set of two pinching clamps (19) twins and parallel ones, a line of welding of edge (3).
Also, in this case, we have not incorporated or given any type of stopper, with what it will be opened for torn, thanks to a crack in the rough edge.
In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.
Fig41: there shows a sight of an elevation of a flexible cubic packing of equal characteristics that the explained one in the figure 38, but that in this case, have caused four rough edges or perpendicular - vertical creases (3).
Also, any stopper has not joined, and if it takes an orifice for straw.
Fig42: there shows a sight of an elevation of a flexible cubic packing of equal characteristics that the previous ones, but that in this case, in addition to type is of a size similar or equivalent to that of an one litre packing tetrabrik ®, have been applied in each of its eight possible edges, the crushing of these, with sets of two pinching clamps (6,8fig68,69) that create, this way, the rough edges or creases pinched (3) that will give major consistency - stability to this new type of cubic packings. It has incorporated a mouthpiece - stopper.
Fig43: a bag or initial packing of two faces with liquid substance in its interior, being this one of two weldings stamps perimetrales (1) and a head office (4).
Fig44: the same perspective shows as a whole of the same type of cubic packing that that of figure 37, but in this case, it is a question of a packing that has a line of sealed more: side, vertical and to half of the face (4).
Fig45: it shows the same perspective as a whole that

the figure 37, but with a line of sealed more: side street, in vertical and to half of this face (4).

Fig46: the same perspective shows as a whole of the same type of packing that that of the figure 39, but in this case, it is a question of a cubic packing that has a line of sealed more: side, vertical and to half of this face (4).

Fig47: it shows the same perspective as a whole that that of the figure 40, but with a line of sealed more (4): side, vertical and to half of the face. Also, they have not pinched him - pinzado the vertical edges (rough edges) but if the horizontal ones. And it has four flaps sealed and cut.

Fig48: it shows the same perspective as a whole that that of the figure 42, but with a welding line more (4): side, vertical and to half of the same face; where, also, it has not given any type of stopper.

Fig49: it shows the same perspective as a whole of the same type of cubic packing as that of the figure 41, but with a welding line more: side, vertical and to half of the face (4). Also it takes a mouthpiece - stopper with filter.

Fig50: a bag or initial packing of two faces with some liquid substance or air in its interior, but of three stamps perimetrales (1) and the central one (4).

Fig51: it shows the same perspective as a whole that that of the figure 44, but
with a line of welding (1) more to a side street.

Fig52: it shows the same perspective as a whole that that of the figure 47, but with a line of sealed more: side, vertical and to half of the face (1).

Fig53: the same perspective shows as a whole that that of the figure 46, but with a line of sealed more: side, vertical and to half of the face (1).

Fig54: a bag or initial packing of two faces with some liquid substance or air in its interior, but with four weldings perimetrales and a head office (4) line more of sealed: vertical, to the center and in one of two wings (4).

Fig55: it shows the same perspective as a whole that that of the figure 45, but with two welding lines more: side, vertical and to half of the face (1).

Fig56: it shows the same perspective as a whole that that of the figure 49, but with two welding lines more: side, vertical and to half of the face (1).

Fig57: it shows the same perspective as a whole that that of the figure 48, but with two welding lines more: side street vertical (1) and to the half. It has stopper.

Fig58: a bag or initial packing of plastic of two faces with liquid substance or air in its interior, being this one of four stamps of weldings (1).
surrounding perimetralmente the whole packing. Made, also, by someone or any of the Machines of liquid / solid in vertical already existing.

Fig59: it shows a perspective as a whole of the elevation of a disposable packing of only plastic, already transformed with the form of a cubic packing, where also it takes clinging to it and in the top part, a stopper dispenser type tetrabrik ®. In this concrete case, this flexible cubic packing, it does not take any rough edges (3) or additional projecting flange in any of the edges; only it goes, the central welding (1) of the initial packing of two faces for all its perimeter, and four lines of welding or rough edges (2) of four flaps or triangles that have been sealed and cut, because this initial packing has been submitted, to the cubic transformation for any of the machines and by means of the sealed one and cut of the flaps that have originated previously the sealed one.

Fig60: it shows the same perspective as a whole and the same type of cubic packing as it in fig 59, but with a form of cubic figure more in horizontal.

Fig61: it shows a sight of an elevation of the same flexible cubic packing as the previous figure but of small size and of alone plastic type film and in pipe. It is conceived this way, so that it could serve as ice cube since there is water packed in its interior.
It is necessary to emphasize that it has been made, deliberately, with four lines of the weldings (2) of each one of four flaps or triangles, without they differ scarcely, since after the sealed one of these flaps these have been cut without leaving scarcely the rough edge of the welding.
Also, for this concrete case, we have made it - without being obligatory - with form of figure of regular hexahedron or, if we want, of a perfect cube.

Fig62: there shows a sight of an elevation of a flexible cubic packing of equal characteristics that the explained one in figure 59, but that in this case, have caused only four rough edges or creases horizontal (3) to the packing, and contiguous to the weldings or rough edges (2) lets for the flaps or triangles; with what it has become possible, this way, to form two rectangles (one arrives and other below) surrounded perimetraly for continued welding lines.

Fig63: it shows a sight of an elevation of a flexible cubic packing of equal characteristics that is explained one in figure 59, but that in this case, they have caused four rough edges or perpendicular - vertical creases (3).

Fig64: there shows a sight of an elevation of a cubic packing of equal characteristics that theit is explained in figure 59, but that in this case, in addition to type is of a size similar or equivalent to that of an one litre packing tetrabrik ®, has applied itself in each of its eight possible edges, the crushing of these with a set of two clamps (of sealed and of impact but not mobile) pellizcadora (19) to create or to cause, this way, the rough edges or creases (3) that will give major consistency or stability to this type of cubic packings.

Fig65: geometric body of rectangular prism shows a sight of an elevation of a packing transformed into form in position of horizontal: that departs from a rectangular initial packing of three stamps or lines of welding (1).

In it is appreciated, as in the face of above two flaps they have been sealed and cut, and in the lower face (opposite others two flaps) two flaps have been given or adhered to the trunk or to the rest of the packing. Also, it has clinging or adhered a thread stopper in the top face.
The following welding lines differ:

a) Lines of welding (1) that proceed - in this case - of an initial packing of three stamps (fig43) made by the vertical machines of packed.
b) Lines of welding (2) that result from the sealed one and complete cut and sectioning of two flaps that have originated in one of the faces.
c) Lines of welding (3) that result from the achievement, after the packing has been already transformed in the shape of cubic figure, rough edges or hems by means of the pinching clamps system (fig68,69).

Fig66: geometric body of rectangular prism shows a sight of an elevation of a packing transformed into form: with the same characteristics as that of the figure 65 [so much in the welding lines (1,2), the flaps that are in the face that does of base and for the stopper], but in this case a (elongated) rectangular initial packing has been used happening as turned out a packing in vertical with form of rectangular prism.
Also, (19) have realized four vertical rough edges to him with the pinching clamps system.
Fig67: A geometric body of rectangular prism shows a sight of an elevation of a packing transformed into form: with the same characteristics as that of the figure 65 [so much in the welding lines (1,2), the flaps that are in the face that does of base and for the stopper], but in this case a (elongated) rectangular initial packing has been used happening as turned out a packing in vertical with form of rectangular prism.
Fig68: it shows a sight in detail extended of the elevation of a set of two pinched clamps that they prepare to seal and cut one of the edges in vertical of a cubic packing. In the middle of these clamps there appreciates the rough edge or crease arisen by the action of the pinched clamps (19), who according to the case, get ready to the sealed one or to the sealed one and cut of this edge.
Fig69: there shows the general sight of the elevation of the cubic packing of the figure 68, in which two pinched clamps (19) have caught, squashed or pinched one of the vertical edges of the cubic packing.
Fig70: the same packing as that of the figure 30, but in this case the initial packing from which we depart so that it is transformed: it has one more form to the high thing and less across or more rectangular than square, for what the packing already transformed with the form of the hull of a turned ship, is more lengthened up or more of the double of high place that the length of the breadth of the face that does of base of the part of further down of the already transformed packing.
Fig71: the same packing as that of the figure 40, but in this case the initial packing from which we depart so that it is transformed: it has one more form to the high thing and less across or more rectangular than square, for what the packing already transformed with the form of jug with a neck dispenser, is more lengthened up or the double or more of the double of high place: that the length of the breadth of the face that does of base of the part of further down of the packing.
Also, in this case, in two side sides (where they have not originated, sealed and cut a flaps) parallels of the face that does of base: they have not originated and sealed or sealed and cut with a set of two pinched clamps twin and parallel, a Line of welding of edge (3).
Fig72: packing transformed in the shape of three-dimensional geometric body of regular polyhedron, with the form of rectangular Prism.
The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum), since this one has rectangular form; in the part of further down how in the part of more above of the initial packing, has it sealed and cut the rectilinear one in horizontal position, correspondents to the lines of welding perimetral (1).
Later, to this initial packing it has originated, sealed and been cut by four flaps or triangles [welding lines (2)]: two of them so much in the side side (or in two of the faces of the packing already transformed into cube or in 3D) of the part of further down as in the same as more above of this initial packing. Also, in two lateral side sides (where they have not originated, sealed and cut a flaps) parallels of the face of the part of more above: they have originated and sealed with a set of two pinched clamps (19) twins and parallel ones, a line of welding of edge (3).
Also, this packing with form of rectangular Prism or also the initial packing of which it breaks to be transformed: they take or have a line of longitudinal welding (4) in one of the side faces arranged in vertical.
In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made by lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.
In this packing rectangular prism, to give gone out for the content (when more it is optimized it is with solid as for example: dry fruits, potatoes, snaks) packed in its interior: the face is going to get up of more above of this packing, seizing and stretching this face or top lid up, in such a way that this lid will become detached with serviceability on having sep-

arated or to become aligned of the welding lines perimetrales (1) and of edge (3).

Fig73: packing transformed in the shape of three-dimensional geometric body of regular polyhedron, with the form of a cube.

The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum), since this one has square form; in the part of further down how in the part of more above of the initial packing, has it sealed and cut the rectilinear one in horizontal position, correspondents to the lines of welding perimetral (1).

Later, to this initial packing it has originated, sealed and been cut by four flaps or triangles [welding lines (2)]: two of them so much in the side side (or in two of the faces of the packing already transformed into cube or in 3D) of the part of further down as in the same as more above of this initial packing. Also, this packing with form of Cube or also the initial packing of which it breaks to be transformed: they take or have a line of longitudinal welding (4) in one of the side faces arranged in vertical.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made by lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

In this Cubic packing, to give gone out for the content (when more it is optimized it is with solid as for example: dry fruits, potatoes chips, snaks) packed in its interior: there is going to give itself opening to any of two lines of welding (2 more) placed ones in the face of the packing above, therefore it will be enough to take hold only and to stretch simultaneously for out, you divide it contiguous to line of welding (2) (which is chosen to give opening): so much of the face of above as of the side face that is contiguous, at the same time, of the face of above and of the line of welding (2) which one wants to give opening. This way, this line of welding (2) will separate or detach with serviceability, originating this way a side open opening mouth where to be able to serve the content of the interior.

Fig74: Part of the material that is used to tipple or of two packings made by a vertical machine of filling that makes packings of two faces.

In him they are appreciated, two packings of two faces that have been made by a set of two multiform clamps (twin and parallel) with form of the rectilinear one arranged in position of diagonal and, also, getting together and one being alternated cyclically after other, by a set of two clamps (twin and parallel) with form of the rectilinear one arranged in horizontal position. Therefore, one is the initial packing "ON", and the different one is the initial packing "OFF", in which in this concrete case, two packings have the same form but one arranged the flap on regard to theother.

The packing of above still has not been sealed and cut, for the set of two clamps (twin and parallel) rectilinear arranged in horizontal position.

Fig75: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to that of a nautical Sail.

The initial packing of which it breaks to be transformed, has an irregular form (not of four sides in angles rectum and, in this case, more to the high thing that across or more rectangular than square), since the rectilinear one has sealed and cut this one in diagonal of approximately 45 to 60 inclination degreess, with a set of two multiform clamps: two of the contiguous side sides of the part of above (well of the side of the left or of the side of the right), as it is indicated by the line of welding (5).

In the part of further down of the initial packing, there has sealed and cut the rectilinear one arranged in horizontal position, corresponding to the welding line perimetral (1).

Later, in this initial packing they have originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to that of a nautical Sail.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig76: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with the form similar to that of a rhomboid Pyramid.

The initial packing of which it breaks to be transformed, has regular form (of four sides with all its straight angles), since it has sealed and cut this one by both faces so much in the part of above like the lower one: with the rectilinear one arranged in horizontal position corresponding to the welding line perimetral (1).

Later, in this initial packing a flaps or triangle have originated, sealed and cut [welding line (2)]: in one (or anyone) of its side sides that it does of base (or of the part of further down): therefore it has transformed this initial packing, in a packing polyhedral irregular of three-dimensional geometric body with form of rhomboid Pyramid.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Two segments that there divides the line of welding

(2) of the face of further down or of the face that does of base, they can be ready one with with regard to other: in that the two are flat, or also but in the one that one finds arranged with approximately 5 degreess (or approximately) of inclination up or down.
Fig77: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to the silhouette of a Sunflower with three tops for above. This packing transformed in 3D, it is the Positive or the packing named "OFF", of figura78 that next is described.
The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case equal of high place that of breadth), since it has sealed and cut this one by both faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1).
This initial packing, also it is named "the Positive" or the "OFF": of the initial packing of figura78, that next is described.
Later, in this initial packing they have originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to the silhouette of a Sunflower of three tops.
In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.
Fig78: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to the silhouette of the representation or of the icon of one Heart. This packing transformed in 3D, it is "the Positive" or the packing named "ON", of figura77 described previously.
The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, it is equal of high place), since it has sealed and cut this one by both faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1). This initial packing, also it is named the "Negative" or the "ON": of the initial packing of figura77, previously described.
Later, in this initial packing they have originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base (or of the part of further down): therefore Heart has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to the silhouette of the representation or the icon of one.
In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.
Fig79: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to the silhouette of the Shield of a Club or of a Cartel I Announce. This packing transformed in 3D, it is the Positive or the packing named "ON", of the figure 80 that next is described.
The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case equal of high place that of breadth), since it has sealed and cut this one by both faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1).
This initial packing, also it is named "the Positive" or the "ON": of the initial packing of the figure 80 that next is described.
Later, in this initial packing welding lines have originated, sealed and cut two flaps or triangles [(2)] in the side side that does of base (or of the part of further down): since it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to the silhouette of the Shield of a Club or of an advertising poster Announce.
In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.
Fig80: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to the silhouette of the Head of a Bull or of any mammal with its two flagstaff horns.
This packing transformed in 3D, it is "the Positive" or the packing named "OFF", of figura79 described previously.
The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, it is equal of high place), since it has sealed and cut this one by both

faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1). This initial packing, also it is named the "Negative" or the "OFF": of the initial packing of the figure 79, previously described.

Later, in this initial packing they have originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to the silhouette of the Head of a Bull or of any mammal with its two flagstaff horns.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig81: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to the silhouette of the Head with its comb of a Hen. This packing transformed in 3D, it is the Positive or the packing named "ON", of the figure 82 that next is described.

The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case equal of high place that of breadth), since it has sealed and cut this one by both faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1).

This initial packing, also it is named "the Positive" or the "ON": of the initial packing of the figure 82 that next is described.

Later, in this initial packing welding lines have originated, sealed and cut two flaps or triangles [(2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to her to the silhouette of the Head with its comb of a Hen.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig82: packing transformed in the shape of three-dimensional geometric body of irregular polyhedron, with a form similar to the silhouette of the icon of the Statue of the Freedom. This packing transformed in 3D, it is "the Positive" or the packing named "OFF", of the figure 81 described previously. The initial packing of which it breaks to be transformed, has irregular form (not of four sides with all its straight angles and, in this case, it is equal of high place), since it has sealed and cut this one by both faces and on the part of above: with multiform clamps as it is indicated in the lines of welding (5); in the part of further down of the initial packing, the rectilinear one arranged in position has sealed and cut in horizontal correspondent to the welding line perimetral (1). This initial packing, also it is named the "Negative" or the "OFF": of the initial packing of the figure 81, previously described.

Later, in this initial packing they have originated, sealed and cut two flaps or triangles [welding lines (2)] in the side side that does of base (or of the part of further down): therefore it has transformed this initial packing into a packing polyhedral irregularly of three-dimensional geometric body with form similar to the silhouette of the icon of the Statue of the Freedom.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig83: packing transformed in the shape of three-dimensional geometric body of round polyhedron, with the form of an elliptical Cylinder.

The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum and that, in this case, is higher than wide), since it has a rectangular form; in the part of further down of the initial packing, the rectilinear one has sealed and cut in horizontal position corresponding to the line of welding perimetral (1).

Later, to this initial packing he has originated, sealed and been cut by four flaps or triangles [welding lines (2): two of them so much in the side side (or in two of the faces of the packing already transformed into cube or in 3D) of the part of further down as in the same as more above, of this initial packing] with an impact clamp / body (6) {in the one that this one has to have in the face or side side that is going to hit or to be assembled inside the clamp of sealed and cut (8): a convex elliptical semicylindrical form} and clamps of sealed and cut (8) {in the one that these have to take as the face or side side where it goes to hit or to be assembled by the impact clamp / body (6): a hollow elliptical semicylindrical form}: in those that both will assemble or connect, after the clamp / body of impact (6) interferes inside or inside the clamp of sealed and cut (8).

These welding lines (2) curled elliptical semicylindri-

cal ones it was doing out, it causes or produces the effect of rounded or of semicircular curvature: of the trunk of this three-dimensional elliptical cylindrical packing.

These lines of welding elliptical (2) or curled inwards, it causes or produces the effect of rounded or of elliptical curvature of the trunk of this three-dimensional elliptical cylindrical packing.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig84: packing transformed in the shape of three-dimensional geometric body of round polyhedron, with the form of a Cylinder.

The initial packing of which it breaks to be transformed, has a regular form (of four sides in angles rectum and that, in this case, is more wide than high and also of less size than the packing of the figure 83), since this one has a square form; in the part of further down of the initial packing, the rectilinear one has sealed and cut in horizontal position corresponding to the line of welding perimetral (1).

Later, to this initial packing he has originated, sealed and been cut by four flaps or triangles [welding lines (2): two of them so much in the side side (or in two of the faces of the packing already transformed into cube or in 3D) of the part of further down as in the same as more above, of this initial packing] with an impact clamp / body (6) {in the one that this one has to have in the face or side side that is going to hit or to be assembled inside the clamp of sealed and cut (8): a convex semicylindrical form} and clamps of sealed and cut (8) {in the one that these have to take as the face or side side where it goes to hit or to be assembled by the impact clamp / body (6): a hollow semicylindrical form}: in those that both will assemble or connect, after the clamp / body of impact (6) interferes inside the clamp of sealed and cut (8).

These welding lines (2) semicylindrical ones or of half moon curled it was doing out, it causes or produces the effect of rounded or of semicircular curvature of the trunk of this three-dimensional cylindrical packing.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Fig85: packing transformed in the shape of three-dimensional geometric body of round polyhedron, with the form of one convex Cylinder or in the shape of Anklebone in that two of its parallel side sides are curvatures that interfere towards the interior (hollow) of the packing and also they have elliptical semicylindrical or semicylindrical form.

The initial packing of which it breaks to be transformed, has a round form (of four sides in angles rectum and that, in this case, is more wide than high and also of less size than the packing of the figure 83), since this one has a square form; in the part of further down of the initial packing, the rectilinear one has sealed and cut in horizontal position corresponding to the line of welding perimetral (1).

Later, to this initial packing he has originated, sealed and been cut by four flaps or triangles [welding lines (2): two of them so much in the side side (or in two of the faces of the packing already transformed into cube or in 3D) of the part of further down as in the same as more above, of this initial packing] with an impact clamp / body (6) {in the one that this one has to have in the face or side side that is going to hit or to be assembled inside the clamp of sealed and cut (8): a convex elliptical convex or semicylindrical semicylindrical form} and clamps of sealed and cut (8) {in the one that these have to take as the face or side side where it goes to hit or to be assembled by the impact clamp (6): a hollow elliptical hollow or semicylindrical semicylindrical form}: in those that both will assemble or connect, after the clamp of impact (6) interferes inside the clamp of sealed and cut (8).

These welding lines (2) semicylindrical or curved elliptical semicylindrical ones inwards, they cause or produce the effect of rounded or of semicircular curvature: of the trunk of this three-dimensional cylindrical packing.

In this case, the initial packing of which it breaks later to be transformed in the shape of three-dimensional geometric body: it has not been made (although also it can take them) not with longitudinal lines of welding (4) and not, either, with lines of welding (1) rectilinear arranged in vertical so much of the side of the left as of the side of the right.

Procedure of the Invention

[0076] To be able to realize this procedure, we must take or depart previously for its later manipulation, of the packings (made with flexible materials type film in bobbin as the plastic or others of similar characteristics as for the flexibility-maleability-resistence as the aluminum or the pasteboard type film in bobbin) sealed by one or more weldings of at least two faces, and that in its interior fluid has packed (liquid / doughy or / and air / gas) and with solid or without them: in packings of three-dimensional geometric body as for example the cube (regular hexahedron), the rectangular prism or the elliptical cylinder {if four of the flaps or triangles are sealed or sealed and cut}, or like also the irregular polyhedrons {if one, two, three or more than four of the flaps or triangles are sealed or sealed and cut}.

[0077] Since we have to cause first one, two, three or four or in more (whenever the packing has irregular form) of the flaps or triangles in an initial packing of at least two faces, for continued to seal them or to seal them and to cut them, in that if we seal or seal and cut two of the flaps of the same side side they can (without having the initial packing the square form or of rectangle) to obtain many types different from packings transformed in the shape of three-dimensional geometric body, and if we seal or seal and cut three of the flaps also there is obtained a packing transformed with forms of different irregular polyhedrons, but in this case standing out in the part of above and of any of its two sides (left or right) a neck or top as dispenser. It is possible to seal or to seal and to cut, only, one of the flaps or triangle, with what also the initial packing will increase in volume, although slightly less, this way to transform or to acquire the form of body geo - metrically three-dimensional of rhomboid pyramid.

[0078] Therefore, the lines of welding of the sealed one of the flaps or triangles, it causes, transmits or contributes major consistency, steadfastness and rigidity to the form that it is about to transform of volumetric three-dimensional geometric body. - the initial packing is made by the machines of packed or filled in vertical or in horizontal of liquid, doughy, granulated, powder or solid, already well-known and available on the current market, being able to be these monolayer or multi-layer or of sheet / complex or of tube/semitube.

Explanation of the procedure in stages:

[0079] The first stage: it holds and/or is supported or / and is blocked to the initial packing by means of one or more of clamps of subjection (6) impelled ones by cylinders (9,16) or sets of two or more clamps of subjection (3) impelled ones by cylinders of double effect and double shoot, and is done preferably by the average area or towards / in the intermediate transverse line of the initial packing, although also it is possible to take or to hold for the ends or for the opposite or parallel to lateral side, where one or two flaps are going to originate.

[0080] Holding it for the area of the way or intermediate transverse line of the initial packing: it is due to the fact that, on the one hand, space will be enabled this way so that they could operate in perfect symmetry the sets of clamps (6,8) and, on the other hand, to achieve that the liquid content of the interior, is distributed towards the corners or periphery of this bag or sealed initial packing; with the only purpose, of which it could help (although it cannot be necessary), this way, to that wrinkles or creases do not form at the moment of the flaps originate (to see the second stage).

[0081] The above mentioned is obtained because these clamps of subjection (3), in addition to seizing the initial packing, will do it exercising and maintaining, at the same time, a (constrictive) constant pressure inwards or towards the interior of the same initial packing, but that in turn this one also will have a system of adjustable muffling, so that this way the clamp of subjection (3) could carry back this way to leave that the initial packing could get conceited or increase of volume when the impact clamp / body beats on him, propitiating finally with it, which he acquires or transforms the initial packing into a form of three-dimensional geometric body like for example the cube, rectangular prism or you form poliédricas irregular.

[0082] Therefore, it is possible to be said that in this first stage, it will be a fundamental part so that the following stages could be executed successfully, since it will facilitate more if it fits and at a later stage, that the flaps originate correctly with the homogeneous form of triangle and, also, without creases or folds that could make difficult the weldings that later will be realized.

[0083] Also one can without doing pressure inwards and without being even held, but it would not be so effective since wrinkles can form, in the plastic or in the material / it is with the one that every initial packing has been prepared, precisely in the union line / region between the flaps and the trunk / rest of the packing.

[0084] The second stage: to the initial packing it is struck or collides with one or more clamps of impact (6) or vice versa: in the intermediate area (the part that loves of between two apexes or corners), partial area (always stopping without striking the part that wants of one of the corners or apexes) the area of the ends (striking only the part that loves of the apex or corner) or the totality (the whole finished part) of one or more of the side sides that border perimetralmente on the initial packing. Also, this clamp (6) will serve like surface of support or of shock for the clamps of sealed and cut (8).

[0085] By means of this beating with the clamps / bodies of impact (6) two facts or very excellent reactions happen, at the same time:

A) in an inductive and spontaneous way the initial packing gets conceited (independently of that it is sealed or cuts the flaps) increasing its volume as suflé, being this because it has turned out to be limited or diminish the size of the bundle of this packing or bag, just after the flaps originate.

B) at the same time, in a spontaneous way, they originate or arise for / in every direct beating (hood; skew, diagonal or in different inclination degreess) realized by the clamp / body of impact (6): one or two flaps with form of triangle standing out to its left and/or to its right for two of the side sides of the clamp / body of impact (6).

- of an initial packing of two faces and with form of square or rectangle, they arise or can originate - whenever wanted - one, two three or four flaps or triangles (a flaps for every apex or top).
- if the packing has irregular form, and there were more apexes more flaps or triangles can originate.
- therefore, it is possible to affirm that in any apex

or top it is possible to cause, to seal or to seal and to cut a flaps or triangle.

- once of have sealed and , any that is the flaps or triangle of an initial packing: it is possible to cause again, to seal or to seal and to cut a new flaps or triangle precisely in the new apexes or peaks that have arisen or have been caused in the already transformed packing after it has originated, sealed and cut a flaps or triangle, as we have quoted previously.
- to major width of the clamp / body of impact (6) with regard to the breadth that could have any of the side sides of the initial packing that is going to be Struck: minor will be the flaps, since this one will be able to interfere or embed itself less towards the interior of the packing or towards the central point of the packing.

[0086] According to the size of this flaps, which depends of to the depth to which we leave that I incrusted / advanced / penetrate the clamp / body of impact (6) inwards with the same initial packing or, also, with the part that is taken / caught of two contiguous sides about an apex or peak, the following thing happens:

[0087] To major flaps, major inflated or transmitted volume, by what there will be obtained, therefore, packings of three-dimensional geometric body with major volumetry and major quantity of suppressed pressure inside.

[0088] The final dimensions of every edge or if it is preferred, the real size that will have the packing already transformed in the shape of completely volumetric figure:

[0089] They will prearrange it in advance, the dimensions or real length that could have each of the three, four or the quantity that was: of the sides of an initial packing of at least two faces.

[0090] The behavior of every flaps with regard to others, it is completely independent: being able to cause this way the flaps or triangles by turn, of two in two, of three in three, of four in four or of that there could be, since each one individually transmits separately the proportional part that corresponds to him of inflated or inflated of the sealed initial packing that in its interior contains fluid (liquid / doughy or air / gas) and with solid or without them, for what the most minimal thing will never turn out to be shaken, either in the size or in the form, the final result of the packing of three-dimensional geometric body that from a beginning we have wanted to obtain or be necessary.

[0091] Third stage: immediately later, one or more they will be sealed or will seal and there will cut one, two, three, four more of the flaps or triangles, sealing or sealing and cutting (cutting it) for the line or the transverse side (or approximately) of the triangle or flaps that is close or doing I contact with the trunk or remain of the packing that would be already transformed in the shape of three-dimensional geometric body as for example that of a cube, rectangular prism or that of a lot of and varied forms different of irregular polyhedron. To achieve this action, one or more clamps will be used of sealed or sealed and cut (8) that into the end will have incorporated a device of heat source (laser; friction; resistance; rotation; ultrasound) with the one that will be sealed (welding) or will seal and cut the material - according to the case - with which it has prepared every initial packing, as for example: with only plastic; plastic and aluminum; plastic, aluminum and pasteboard; etc.

- this is obtained, when this clamp of sealed (8) or sealed and cut (8), on having been driven, joins or does contact with the end or side surface of the clamp / body of impact (6) that serves as support base, so that this way there remains this way trapped the flaps or triangle that has just been caused and in that two twin faces on both sides that every flaps or triangle contains: it stays in the middle of these two clamps (6,8).

[0092] Continued, to the moment and simultaneous, / one or more flaps/or triangle / that wanted will be cut - after they have been sealed - with a clean cut, by means of a way of cut as for example a blade, where also it will stay like result standing out it was always doing out over the line of welding of the sealed one of the flaps that exactly earlier had just been realized: a remaining rough edge that can be almost invaluable of one, two, three, four, five millimeters or the millimeters that want to be left, since this rough edge serves to guarantee that the welding line is not opened, guaranteeing this way the watertightness and steadfastness of the packing already transformed to the form of volumetric three-dimensional geometric body which it has been about to obtain.

The examples of the Machines to make packings of the invention, which express themselves next, they do not try to be limitative of its scope.

1) MODEL [A].

[0093] Transformer by means of a cubic cavity, with clamps of sealed (8) or sealed and cut (8) of flaps double by means of clamps sets, triple or fourfold, and across the blockade or immobilized of the initial packing by means of clamps self-centering (2) and of top / low ceiling adjustable (4).

1st phase [A]: (1, 2, 3, 4, 5, 6, 7, 8, 9fig1, 2).

[0094] It is a question of transforming an initial packing into cubic packing, creating for it previously, a cubic cavity (fig1) perfect, where to this one one will have left connected and inside, the initial packing. At the same time, there will arise in a natural and spontaneous way four maximum possible flaps, which thanks to the clamps / bodies of impact (6) will stop forming well; so that finally the clamps of sealed or sealed and they end up by sealing cut (8) or sealing and cutting one, two, three or four of

the flaps or triangles.

[0095] This way this way summed up, it will be obtained definitely, a cubic packing of three or more faces and smooth all of them, without flaps.

- for this assignment they will need to use the following types of clamps:

  Two clamps self-centering (2).
  One or two free clamps of top ceiling in horizontal (3).

  One or two clamp / body of impact (6) for every face that contains flaps.
  Clamps of sealed or sealed and cut for every flaps.
  A surface that does of base or clamp of low ceiling.
- explanation for steps of the development or functioning of the machine: Two clamps self-centering (2) driven ones by the same cylinder of tweezer / double shoot and double effect, once the conveyor belt has stopped (optical sensor of infrared) or, but also, that the initial packing has fallen down from the vertical machine or from another conveyor belt to the point of beginning or interval, so that the initial packing remains centred to half of these two clamps (2), it will be closing, finally to manage with it:

  a) posicionar the initial packing in parallel to these clamps (2), since, on having been dragged, independently of that position had, it will move until self-centering (2) is placed exactly in parallel to these clamps.
  Also the initial packing can be placed in the point of exact beginning, between two auto-next clamps (2), of the following two ways:

  - by means of a mechanical arm or robot.
  - falling down straight, from a conveyor belt or of any of the machines in vertical / horizontal that make the initial packings, to a hopper that they will put in the exact place and correct position.
  - falling down from a Trap-door (10).

  b) it will be led, in turn, towards the half, I just, of the conveyor belt or on the base of support of the machine.

  - continued, they will continue these clamps (2) joining, with what they will exercise, this way, pressure on the wings and top part of the initial packing, so that finally this one, end up by mating in a natural and spontaneous way, to the cubic cavity created by the clamps self-centering and of top and low ceiling, in which the last one can be a fixed or mobile surface (trap-door). - these two clamps (2), in turn, will go each of them in the part of above and interior face a free clamp of top ceiling in horizontal position (3) with adaptable muffling and/or brake with adjustable ceiling (4).
    These depending on in that height they are and which height they stop, there will be obtained a new cubic packing of square or rectangular form.
    Also, it is preferable that these free clamps of top ceiling (3) exercise a pressure with adjustable muffling on the top part of the initial packing, because with it, it will slow down the transformation movement, to obtain, this way, the one that they form better, without creases or folds: both the flaps and the trunk of the cubic packing.

2nd phase [to]: (1, 2, 3, 4, 5, 6, 7, 8, 9fig1, 2).

[0096] Followed by Phase1ª : there will drive two impact clamps / bodies (6) arranged ones of a way perpendicular to the clamps self-centerings and for below or not, of the two/one (as one wants) free clamps of top ceiling (3). These, they will be located just between the flaps or arisen triangles, and they will be driven by means of a pneumatic or electrical cylinder; in turn, these might be individuals, one for every side of the packing that contains the flaps, or but, be joined in the same pneumatic or electrical tweezer / double cylinder shoot and double effect, so that this way, they work simultaneously.

- they will fulfill two assignments: to help to that the packing acquires a form of perfect cubic figure and to that the flaps or triangles have all of them the same size and homogeneous form in every packing. Also, these will serve as it bases or supports so that the clamps of sealed and they shock cut against them.
- the clamps / bodies of impact (6) can be of two types:

  1 - of only one piece, and without gum or with her adhered to left and right in the wings, to muffle the shock of the clamp (8), and to facilitate the sealed one.
  2 - of two pieces with a space between them, and without gum or with her adhered in the side end to left and right.

[0097] These two pieces might be joined of the following way:

a- joined both for two fixed rods.
b- joined both for a pneumatic mini-cylinder of double effect and double shoot, with the purpose like that, of moving-opening outside up to doing almost with - tact with the interior face of two clamps self-centering (2), this way, will help to remove any possible wrinkling / crease of the plastic or flexible material of every flaps, since one manages to bring two plastic in

parallel over and to every side, which every flaps contains.

[0098] This does also that it comes out mostly, the water contained inside every flaps, since they are activated before the clamps of sealed and cut (8) realize its function to seal transversely the flaps or triangles.

- and finally, four will be driven actuators or electrical or pneumatic cylinders
- one for every flaps - where, each of them, it will have incorporated a clamp of sealed or sealed and cut (8), which across heat (resistance; ultrasound; friction; laser) they will seal or seal and will cut (cutting) one, two, three or four of the flaps or triangles that had already arisen, spontaneously, in 1 ªfase.
- each of them will move on a rail, to be able, this way, to place just in the precise position: in the union line, between the cubic main body of the packing and the flaps or triangle. This will obtain by means of sensors, for example of infrared or optical, (7) that will detect, this way, the exact place, where exactly the clamp / body of impact (6) will have been placed.
- nevertheless, also, they will be able to be joined on the same frame along with the Clamp or clamps of impact, this way shoot and double effect were driven jointly - it will not be necessary the sensors, for example of infrared or optical, - by a tweezer / double cylinder, or but also every set of clamps (6,8) that are located two of the sides or side faces of the packing that contain the flaps: to be independent on having been driven, themselves, by means of a cylinder.
- in any of the cases, these clamps of sealed and cut they will be placed in parallel and aligned (exactly opposite) to the clamps / bodies of impact (6), which will serve this way, also, as support to squash or to join two faces of every flaps with form of triangle. Continued and to the moment, they will be sealed or will seal and cut (cutting) the flaps that wanted.
- these clamps of sealed and cut (8) they will be placed in the exterior face or to the side street - the one that does not contact the packing - of out of two clamps self-centering (2), with what they will have to cross the walls of these, since they will have arranged, for such an end, orifices (fig1) with the sufficient gap like so that they could happen or cross because of it, the clamps (8).

3rd phase [to]:

[0099]

The flaps or triangles either (sectional) cut separate of the packing either transformed to the form that has loved of volumetric three-dimensional geometric body, for the different following means:

a) by means of an air shooter (15) facing or directioning this way to expel to the packing already transformed towards a concrete place.
b) on having happened from one conveyor belt to other one, since there will be a space between them the sufficiently big thing like so that the flaps that they will be always smaller, they fall down to the soil or on a receptacle.
c) across a grill conveyor belt, since he arranges it of sufficiently wide hollows like so that, themselves, the flaps fall down to the soil or on some receptacle, which will be placed exactly below.
d) by means of a guide clamp (13).

- the packings already transformed to the form that has wanted of three-dimensional geometric body, can be manipulated of the following way:
  - a) falling down by means of a Trap-door (10) or from another conveyor belt, straight to one / other one conveyor belt or also to a box or receptacle.
  - b) to be trapped / fixed (selected) and directed by the claw of the arm of a robot or also for fixing clamp expert of a mechanical arm.
  - c) by means of an air shooter (15) facing or directioning this way to expel to the packing already transformed towards a concrete place.
  - d) by means of a guide clamp(13).

2) Model [B1].

[0100] Transformer by means of the sealed one (8) or sealed and cut (8) of flaps double across clamps sets, triple or fourfold, and with the blockade or immobilized of the initial packing by means of clamps of subjection (3) with adjustable muffling.

1ªfase [b1]: (1, 3, 4, 9).

[0101] The "initial packing" that moves for the conveyor belt, has to be neutralized just in a point or certain transverse line.

[0102] This obtains with sensors, for example of infrared or optical, (1) that they will make stop or not the conveyor belt, so that continued two clamps self-centerings (2) or clamps he guides (13) close or they displease to the initial packing in parallel to these and, also, the initial packing is placed between the clamps of subjection (3) or to the point or intermediate central line of these clamps self-centering (2), or of the conveyor belt. The clamps self-centerings (2) and clamps it guides (13) they will have a length with sufficiently width, as to guarantee these actions to move to the initial packing.

[0103] Also the initial packing can be placed or placed in the point of exact beginning between the clamps of

subjection (3) or between two clamps self-centerings (2), of the following ways:

- by means of a mechanical arm or robot.
- falling down straight, from a conveyor belt or of any of the machines in vertical / horizontal that make the initial packings, to a hopper that they will put in the exact place and correct position.
- falling down from a Trap-door (10).

[0104] Next, once there have separated the clamps or devices that they had placed to the packing in the exact place and correct position, the initial packing for one or two faces of the initial packing and for one or more subjection clamps (3) impelled ones by means of a way like that of a linear cylinder (9) or of tweezer / double shoot and double pneumatic or electrical effect, and that have a way of adaptable muffling (like for example a spring or by means of adjustable opening valves) and with adjustable tapped (4) or without it: they will take - agarrarán- bloquearán to the initial packing immobilizing or not it, exercising towards the interior of the same packing a constant pressure but with adjustable muffling, so that this way the clamps of subjection (3) could be carried back when the initial packing gets conceited or increases of volume, as suflé, when they exercise or transmit pressure on one or more of the side sides of the initial packing, on having been struck or to be struck against / with/, fixing clamp / expert of impact (6) or piece of rigid surface or semirrígida.

[0105] Therefore, the clamps of subjection (3) will take hold and/or block to the initial packing, on the transverse part / region of the way, preferably, although also one can for the rest of the packing, but always excepting the next area of the side sides, where the clamps / bodies of impact (6) and the clamps of sealed and they are going to operate cut (8). This way, it becomes possible to distribute, the fluid packed inside the packing, towards the corners, tops or ends perimetrales of this one, with the only intention of preventing one from being able to form creases, wrinkles or unnecessary folds, exactly in the area where there are going to originate the flaps, which spoil or make difficult the weldings that later will be realized of the sealed and cut the flaps. - this way, it will be guaranteed that the initial packing could transform or acquire perfectly the form of rectangular cubic or prismatic figure (if four of the flaps are sealed) or polihedral irregularly (if one, two or three of the flaps are sealed).

[0106] This last process of exercising pressure on the packing can be optional, although without him the cost of major serious production, since there would be many units or packings that would not be well sealed.

[0107] Also it is necessary to say, that using simultaneously, in multilayers, materials as the plastic and the aluminum, less cases of imperfect packings are great.

- the clamps of subjection (3) can be located or be ready:

  a) in closeness: to be placed exactly nearby above and/or below or to right or / and to left of one or more of the faces or sides of the packing.
  b) over a distance: to be placed removed (impelled by a cylinder) above and/or below or to right or / and to left of one or more of the faces of the packing.

2ªfase [b1]: (3, 4, 6, 8, 9).

[0108] Once let's have to the initial packing in the place and correct position, they will act or it will be activated by one or two of the side sides of the initial packing, one or more clamps / bodies of impact (6) or one or two sets of triple or fourfold clamps that clamps / bodies of impact (6) consist every set of one/two for the center and two clamps of sealed and each one cuts ready (8) or placed on the outside, to left and right of the clamp / body of impact (6) and hence of the flaps. Also, these sets of clamps (6,8) are placed or they will be placed at the time of be activating, in parallel and face or opposite to the sides perimetrales where the flaps are going to originate.

[0109] In turn, each of these two sets (to left and right or above and below of the packing) of three or four (two pieces are the impact clamp / body) clamps (6,8), can go separately one of other, or be both two sets joined by the same frame and pneumatic or electrical cylinder of double shoot and double effect, so that this way, they could be driven simultaneously to save with it production time and also after a set rests against facilitating other the volumetric transformation of the packing.

[0110] All these clamps (6,8) that are joined in the same frame, will be to the same height and they will be able to maintain the same distance to left and right or above and below, of the side sides of the initial packing.

They work of the following way:

[0111] The sets of four or three clamps (6,8) of two side sides can be activated simultaneously, jointly on the same frame or separately, since every flaps is independent one of other one on having transmitted - insuflate separately, the quantity of fluid or volume that corresponds in function, always, to the size of flaps that it has been about to cause: to major major flaps transmitted volume.

[0112] When the set of clamps (6,8) is driven: only the clamp of impact (6) is who beats to the side sides or contiguous areas of four apexes of the initial packing, penetrating or embedding itself inwards or towards the interior of the initial packing.

[0113] In every action of beating and for every clamp / body of impact (6), one or two flaps or triangles will originate, causing at the same time, that the packing gets conceited or increases of volume, as suflé, acquiring this way the volumetric form of cubic figure or of rectangular prism (if four of the flaps are sealed) or polihedral irregularly (if one, two or three of the flaps are sealed).

[0114] This way, therefore, the clamp (6) or surface riggid or semiriggid according to what it interferes inwards (to major major flaps volume transmitted to the rest or trunk of the packing) and, also, as in the part or area of the side side where it does contact or pushes inwards the lateral side: one or two flaps will arise or triangles standing out it was always doing out and in the part of the apexes, corners or ends, and of major or less size as it is needed. The flaps or triangles form because one of two contiguous side sides in which every apex consists or forms a corner, bends inwards or towards the interior up to doing contact or going so far as to join almost or do I contact with another part of another side side contiguous to the same apex, corner or end. The flaps or triangle, therefore, remains ready or is placed, standing out outside of the packing, in position of perpendicularity or vertical position (completely or almost completely) with with regard to the side sides or faces of the already transformed packing.

[0115] The transformation of initial packing of two faces to volumetric packing, does that this second has a less size in height that not in volume, because the bundle of the initial packing has turned out to be limited (at the moment of originating, be sealing and the flaps were cut) being supported the same quantity of substances or / and fluid inside the packing.

[0116] Also, since it is logical, they will influence other parameters as the size or the measurement of the sides of the initial packing, or the quantity of substance and/or fluids suppressed or packed (previously) inside the same initial packing.

[0117] In any case, the action of direct beating - shock of the clamps of impact (6) on the side sides, causes or produces in a natural and spontaneous way, that the initial packing gets conceited like a suflé, independently of that they are sealed or cut the flaps.

- the clamps / bodies of impact (6) can be of two types:

  1) of a piece.
  2) of two separated pieces and that line up, in that both remain joined between themselves, of the following way:

     a - joined both (6 for two or more fixed rods.
     b - joined both (6 for a pneumatic or electrical tweezer / double mini-cylinder shoot and double effect, for this way moverse-abrirse it was doing out (up to going so far as to contact almost with the clamps of sealed and cut (8) that will be placed and aligned exactly faces) so that the flaps form well: on having prevented or having facilitated the fact that wrinkles or creases do not form in the area of the packing or line of union, between the flaps and the rest of the packing. Also it can help that forms well or completely the flaps and, at the same time, to expel from the flaps or triangle the fluid (liquid / doughy or / and air / gas) and with solid or without them.

- also, the clamps / bodies of impact (6) can go, adhered to the surface or exterior lateral sides where they receive the shock of the clamp of sealed and cut: a gum, not to take it, or to be of any other piece or material that it is suitable to guarantee the good use or functioning of the system or method of welding which goes to use.
- but in any case, all the types of clamps / bodies of impact (6) it has the same purpose: in addition to serving to cause flaps and to give volumetric form to the packing, to serve as support surface for a clamp of sealed and cut (8). Also, if the clamps (6,8) were not joined in the same frame, the clamp / body of impact (6) will serve to indicate where it must be located or stop (the clamps to line up in line) of sealed and cut (8).
- continued, to the moment, and so that it remains definitely with the form of volumetric figure that we have wanted to give: the clamps will be always driven of sealed and cut (8) to seal or to seal and to cut two, three or four of the flaps or triangles, in function this of the form of figure that let's want to obtain: cubic or prismatic rectangular if four of the flaps are sealed, and polihedral irregular if one, two or three of the flaps are sealed.
- the clamp of sealed and cut (8) has by means of a system way as for example ultrasound, laser, plate thermogenic, for friction, rotation...

3ªfase [b1]:

[0118] It is the same procedure and development that the presented one in 3ªPhase.

3) Model [b2].

[0119] Transformer by means of the sealed one (8) or sealed and cut (8) of flaps across double sets of clamps (6,8) in diagonal, and with the blockade and/or immobilized of the initial packing by means of the clamp of subjection (3) with adjustable muffling.

1st phase [b2]: (1, 3, 4, 9).

[0120] It is the same procedure and development that the presented one in 1ªfase [b1].

2nd phase [b2]: (3, 4, 6, 8, 9).

[0121] Next of 1ªfase [b2]; once we have to the initial packing in its place by the selfcentering clamps (2) or mechanical arm on the base of the machine or / and conveyor belt or between the clamps of subjection (3), these will separate to leave that one or more clamps of

subjection (3) and for one or more of its sides or faces, they take hold blocking to the initial packing but, in turn, at the same time, he will be exercised towards the interior or inwards of himself, a constant pressure but with muffling this way to be able to carry back, to leave that the packing gets conceited or increases of volume. Continued, there will be activated one, two, three, four or more double sets of two clamps (6,8), in which every double set they are ready on the outside and in - opposite to left and right of every apex, corner and peaks of the initial packing of at least two faces.

[0122] These consist of the following types of clamps:

1) The clamp / body of impact (6) that is equal and he will exercise the same function as those of the model [b1], but with the exception of which it can be only of a piece.
2) The clamp of sealed (8) or sealed and cut (8), which is equal and which also exercises the same function as those of the model [b1].

- four sets of two clamps (6,8) can be driven separately, individually, one by one or, also but, of two in two, three in three or of four in four or each time more (if the packing had more apexes that four, after the initial packing has irregular form); since in any of these options, regular / cylindrical cubic / prismatic packing will be obtained the same final result of packing of volumetric three-dimensional geometric body ((four of the sealed or sealed and cut flaps) or of varied and multiple types of irregular polyhedrons (one, two, three, five or more of the sealed or sealed and cut flaps): that from a beginning it was about to obtain.
- each of these four sets of clamps (6,8fig6) will be impelled by pneumatic or electrical cylinders.
- these sets of two clamps are ready in diagonal with regard to each of four corners or apexes of the initial packing (fig6).

[0123] They work of the following way:

[0124] The clamp / body of impact (6) and the clamp of sealed or sealed and cut (8) that are placed in diagonal and to left and right of every apexes, corners or peak of the initial packing of at least two faces: they will be driven or will be impelled ahead by a linear cylinder (9) or of draft (16), this way to beat or to hit each of them in / with / against one of two contiguous sides of every apex, corner or peak of the initial packing, therefore will originate flaps.

[0125] Continued the clamp of sealed or sealed and cut (8): it will seal or seal and the flaps will cut for the transverse line (or brought near) that is doing contact with the flaps and in turn with the trunk or the rest of the packing.

[0126] This way, they will arise in a natural and spontaneous way for every set of these two clamps (6,8) and to the moment of closing, a flaps with form of triangle and also, at the same time and simultaneously, it will do that the initial packing gets conceited or increases of volume, as suflé, in the quantity of measurement that corresponds after this depends on the size of the flaps that originates: Major flaps inflated or increase of the volume of the packing. Every flaps answers in an independent way with with regard to others; that is to say, they can originate, seal or seal and cut the flaps: by turn, of two in two, of three in three, of four in four or each time more.

- this way, therefore, with this set of two clamps (6,8) and according to the part that is caught or one squashes inwards the side sides contiguous to the apexes or corners, it will arise or only one flaps will originate or triangle of major or less size (to major major flaps volume transmitted to the rest or trunk of the packing) standing out was doing out of the trunk or the rest of the packing.
- the flaps or triangles form because one of two contiguous side sides in which every apex consists or forms a corner, bends inwards or towards the interior up to doing contact or going so far as to join almost or do contact with another part of another side side contiguous to the same apex, corner or end. The flaps or triangle, therefore, remains ready or is placed, standing out outside of the packing, in position of perpendicularity or vertical position (completely or almost completely) with regard to the side sides or faces of the already transformed packing.

3rd phase [b2]:

[0127] It is the same procedure and development that the presented one in 3ªfase [a/b1].

4) Model [c].

[0128] Transformadora in vertical by means of the sealed one or sealed and cut flaps across double, triple or fourfold clamps, and with the blockade and/or immobilized of the initial packing by means of clamps of subjection (3) with adjustable muffling.

1st phase [c]:
(1,3,9,16,17fig7,8,9,10,11,12,13,14,15,16,17,18,19,20, 21).

[0129] We have to place the initial packing, in standing vertical position, between the clamps of subjection (3).

[0130] It comprises different ways of realizing it:

A) The conveyor belt that moves the initial packing, is articulated appropriately, how so that it is possible to turn of side and in vertical when just placed object under this conveyor belt, hinders its trajectory, so that this way, this way, also, it turns the initial packing putting itself, in vertical position but being, still, of

side or sideways.
It will be then, when the second tape linear conveyor belt (this one will not turn and, also, it will have to every side a few rigid rods or surface risen up to the sufficient height like so that the initial packing one could not incline to tilt towards any side, and it could, at all times, be supported this way in vertical) that it passes next to the first conveyor belt, receive to this initial packing in vertical position but sideways.

- continued so that this one could put himself in vertical (it is already) but standing and not sideways: there will be an object or transverse bar, as lever, and almost touching the top surface of the second conveyor belt, so that this way, while the initial packings move or are in movement, they turn a quarter back on having been united on the low part, for this projecting bar placed transversely with regard to the second conveyor belt.
- once we have already to the initial packing in vertical and standing position, one will be accumulated behind other, so that finally, they settle or fall down exactly between the clamps of subjection (3) by means of a retractable arm or a trap-door that will be opened; also one can, being or falling down the initial packing in the second conveyor belt in vertical where there are dividers or supports; or but also for example: by means of the arm or the claw of a robot of 4/5/6 axes that takes the initial packing on the part of above and deposits it, also, between the clamps of subjection (3).

B) The initial packing that moves in horizontal position knocked down in the first conveyor belt, will be gathered straight by the arm (claw) of a robot of 5/6 axes, so that this way, this way, it is deposited exactly between the clamps of subjection (3).

- for any of two options:
  There will be able to be in the machine and under the clamps of subjection (3) a Trap-door (10) that it will be possible to regulate in height, with the only function to set to the initial packing to the precise height, like so that, precisely, the clamps of subjection (3) catch the initial packing that is in vertical, exactly on the part of the half or average area of this one, so that this way, it stands out at the top and for below of these clamps of subjection, the same quantity of initial packing.

[0131] In the option of the letter (A) the trap-door will be indispensable.
[0132] In the option of the letter (B) it will not be necessary - although it might take it - since the movements of the arm of the robot, they can be detailed (introducing parameters for computer and with digital camera) to the millimeter, facilitating, this way, the exact place to him (to left or right) and to the precise height that the robot will keep suspended to the initial packing, so that continued the clamps of subjection (3) catch it, exactly on the part of the half or average area of this one.

2nd phase [c]:
(3,6,8,9,16,17fig7,8,9,10,11,12,13,14,15,16,17,18,19,20,21).

[0133] It will transform the initial packing into a form of volumetric three-dimensional geometric body, for the action of frontal, oblique beating or into diagonal of the clamps / bodies of impact (6) that are impelled or driven by cylinders líneales (9) or of draft (16), and that are posicionadas or placed superficially and/or below the initial packing or clamps of subjection (3), in this type of machine.

- continued the clamps will be driven of sealed or sealed and cut (8), this way to seal or to seal and to cut / cut one, two, three, four or even more of the flaps whenever the initial packing from which we depart to transform has irregular form with more than four apexes.

[0134] This way, the already transformed packing will remain definitely in the time with the form of three-dimensional geometric body which it has been about to give, to add or to obtain.

- both two types of clamps (6,8) can be joined or be fixed in / on the same frame or go individually separately some of others.

[0135] In any case, they can be ready of the following ways:
[0136] The clamp / body of impact (6) can be fixed or anchored straight to one or two of the Columns in vertical / horizontal / different inclination degrees and, also, in turn, this one clamp can be fixed or anchored to the shoot both of a linear cylinder (9) or of draft (16), of a platform (18) impelled by Units of movement (17), and to a frame or chassis in which in turn this one is joined or fixed to a linear cylinder (9) or of draft (16).
[0137] The clamps of sealed and cut (8) they can be joined or be fixed: to one of the columns in vertical / horizontal / different degrees of inclination of the right or left; to the clamp / body of impact (6) by means of a linear tweezer / double cylinder shoot and double effect; joined to the platform that is directed by two units of linear movement. Also, in turn, this one clamp (8) can be fixed or anchored to the shoot both of a linear cylinder (9) or of draft (16), and to a frame or chassis in which this one, also, can be joined or fixed to a linear cylinder (9) or of draft (16).

- on the other hand, both clamps also can be joined or fixed to the same column.
- the different clamps sets (6,8) joined or not ones on the same frame, can be ready or placed with regard to the initial packing, the following ways:

[0138] Double set of clamps that are placed in diagonal with regard to the tops of the initial packing, and it consists of a clamp / body of impact (6) and a clamp of sealed and cut (8).

[0139] Triple set of clamps that is placed faces (hood) and parallel to the side street, edge, line of welding of two of the sides (of above and the lower one) of the initial packing. It consists of a clamp / body of impact (6) in the center and two clamps of sealed and cut (8) to left and right of the clamp (6).

[0140] Fourfold set of clamps that is placed faces (hood) and parallel to the side street, edge, line of welding of two of the sides (of above and the lower one) of the initial packing.

[0141] One composes of two miniclamps of impact (6) joined ones if and in the center, and two clamps of sealed and cut (8) to left and right of the clamp (6). They work of the following way:

- continued to the first phase and to the moment, it will be driven impelled by a cylinder or actuator (linear or of draft) the clamp / body of impact (6) to penetrate or to incrust - on / in the intermediate region / part of the sides or areas contiguous to four apexes of the initial packing, and on the part of above and/or of under this initial packing (6fig1,2,4,5).
- it is possible to add to this clamp (6) between the union of the shoot and this clamp (6) a system of adaptable muffling as a spring, like a method this way to guarantee the homogeneity of the made packings, since this way the clamp / body of impact (6) can beat against the clamp of subjection (3), because it withdraws, therefore there will always stay this clamp (6) given to the clamp of subjection (3), serving to him this way as measurement so that the clamp (6) pushes or introduces inwards: the same quantity or part of the side sides perimetrales of the initial packing.
- in every action of beating and for every clamp / body of impact (6) one or two flaps or triangles will arise and, at the same time, it will cause that the initial packing gets conceited, as suflé, so that he acquires this way the form of three-dimensional geometric body which it has been about to transform or obtain.

[0142] Therefore, depending on to the deep thing that we leave that I penetrated the clamp of impact (6) towards the interior of the initial packing: the flaps that originate will be of major size, therefore we will obtain a packing transformed with major volume or more volumetric and, on the contrary, the bundle of the packing has diminished in size. Also for the fact that they have originated, sealed or sealed and cut bigger flaps, it will influence this so that the initial packing transforms towards a more square form of three-dimensional geometric body and with less height.

[0143] In turn, also they influence other factors as for example: the size or the breadth of the clamp / body of impact (6) with regard to the breadth of the sides of the initial packing (to major width, minor flaps); or the stiff fluid quantity (liquid / doughy or / and air / gas) and with solid / granulated / powder or without them, inside the initial packings.

[0144] In any case, the action of beating of frontal shock by means of the clamps of impact (6): it will produce, of equal way and in a natural and spontaneous way, that the initial packing gets conceited as suflé, with independence of which the flaps or arisen triangles are sealed or sealed and cut.

- the clamps / bodies of impact (6) can go or have, in its ends on both sides side and in the surface that serves as support or as base of the clamp (8): of a gum or any other piece or material that is suitable as to guarantee the good functioning of the system or method of welding which goes to use or use.
- the clamps / bodies of impact (6) can be of two types:

  1) of a piece.
  2) of two separated pieces and that line up, in that both remain joined between themselves, of the following way:

     a - joined both (6 for two or more fixed rods.
     b - joined both (6 for a pneumatic or electrical tweezer / double mini-cylinder shoot and double effect, for this way it moves to open, going out, (up to, going so far as to contact almost with the clamps of sealed and cut (8) that will be placed and aligned exactly opposite) so that the flaps form well: on having prevented or having facilitated the fact that wrinkles or creases do not form in the area of the packing or line of union, between the flaps and the rest of the packing. Also it can help that forms well or completely the flaps and, at the same time, to expel from the flaps or triangle the fluid (liquid / doughy or / and air / gas) and with solid or without them.

- also, the clamps / bodies of impact (6) can go, adhered to the surface or exterior side sides where they receive the shock of the clamp of sealed and cut: a gum, not to take it, or to be of any other piece or material that it is suitable to guarantee the good use or functioning of the system or method of welding which goes to use or use.
- but in any case, all the types of clamps / bodies of impact (6) it has the same purpose: in addition to serving to cause flaps and to give volumetric form to

the packing, to serve as support surface for a clamp of sealed and cut (8). Also, if the clamps (6,8) were not joined in the same frame, the clamp / body of impact (6) will serve to indicate where it must be located or stop (to line up in line) the clamps of sealed and cut (8).

- next, to the moment and simultaneous, the clamps of sealed and cut (8) they will be driven impelled by an actuator or linear cylinder (9) or of draft pneumatic or electrical (16), this way to beat or to hit the clamp / body of impact (6) and in turn to catch to roll between two clamps (6,8) the flaps, for continued by means of a heat source or system of welding (resistance, compress of ultrasound, laser, of rotation, sheet thermogenic, by friction.) to seal or to seal and to cut the flaps on the part or the transverse side / line that is doing contact or in union both of the flaps and of the trunk or the rest of the packing already transformed with the form of volumetric three-dimensional geometric body.

[0145] So that the clamp cuts the flaps or triangle of sealed (8) or sealed and cuts (8) to have a cut system by means of a way as for example that of a chopper.

[0146] This clamp (8), also it can go between the shoot and her, a muffling system by means of a way like for example a spring this way join or to be struck without brusqueness against the clamp / body of impact (6). Also, also, it can have to the end of the shoot, a ball that is fitted or gets in the hollow semispherical hood / bearing (slightly more than half of a hollow sphere) that will be fixed in the back of the clamp of sealed (8) or sealed and cuts (8).

- in all this process the clamps of subjection (3), they always maintain seized to the packing, only to release it when this one has already been sealed or sealed and cut by the flaps that correspond, depending on every case.
- all the types of clamps, elements, devices or pieces of this machine they can regulate to fit both in height and in linear length.
- the clamps (6,8) or clamps sets double, triple or fourfold or also every flaps or triangle: they can be driven or all be sealed - those who existed in every machine in vertical - simultaneously or separately individually: by turn, of two in two, of three, of four in four or each time more, since this does not affect in anything the final result of the packing of three-dimensional geometric body that from a beginning we had wanted to obtain.
- also to this Machine in vertical of this model [c], they can be added or it can understand in multiple possible combinations: other different elements, devices, pieces or clamps, in that these can be all simultaneously or, only, one/two/three/four/five/six or seven of these, or but also any of these can be for copy or being more than two.

[0147] The elements, devices, pieces or clamps, there are the following ones:

A) Trap-door (10fig9,10,11,12,13,15) that is placed under the clamp of subjection (3) or of the initial packing, to serve like support base for the initial packing, which along with that it will be possible to adjust (different heights), will serve, also, so that the clamps of subjection (3) remain aligned exactly towards the intermediate line (the one that it divides transversely in two equal halves) or central average area of the initial packing that will be in vertical position position. This one will be driven by a cylinder pneumatic or electrical (9) how, also, for a cylinder of draft pneumatic or electrical (16) that is anchored or fixed to one of the columns.

B) Fixing bars (11fig12, 13) that delimit the exact place where the initial packing is deposited.

This way, it will help more if it fits, to that the initial packing, before being held and pressed by the subjection clamps, is in perfect vertical position without it doubling or the lower part of the packing flattens itself.

Only it is necessary in some types of initial packings inclined to bend or flexionate: well for being made by materials of few clamps (50-60) or, because there are initial packings of a size or considerable weight like those of the packings of half a liter or one liter.

C) Blockade fence (12fig10, 11) that it helps to that the initial packing, which has been deposited by the side street and over the trap-door, is given birth just in the place where it indicates this fence. This one system is used when the clamps (6,8) of the part of above of the clamp of subjection (3) cannot move not backwards not forward to clear, this way, this area or place.

D) Clamp guides (13fig18, 19) that serves only to expel towards out from the machine the packings already transformed in the shape of cubic figure that remain supported on the clamps (6,8) of the low part, since there does not arrange the machine of devices as the units of movement (17) draft cylinders for tipper (16) or simply not to have any more linear cylinders.

The clamp guides (13) it is joined to the shoot of a linear cylinder (9) or of draft pneumatic / electrical (16).

This clamp (13) has form of straight line or has, towards half of this straight line, a curvature with an angle of 20th more or less, conditioned this way, so that the initial packing already transformed into a new form of cubic figure, it goes out dismissed - pushed by the clamp it guides (13) - in straight line, so that, finally, it falls down on a conveyor belt, receptacle or box.

E) Blistles swippers (14 fig9, 10, 15) that will exercise the same function as the clamp guides, that is to say, to expel towards out from the machine the packings

already transformed in the shape of cubic figure, but that in this case, these bristles are hooked or fixed at the edge of one of two sides that has major length, of the trap-door (10). These fall down down.

F) Air shooter (15fig8) that serves to dismiss or to remove the packings already transformed into a form of cubic figure, was doing out or towards a box, receptacle or conveyor belt that, precisely, are placed under the machine in vertical.

This one is anchored to the column, and is located or places: to the same height in which the packing already transformed in the shape of cubic figure is.

G) Draft cylinder / engine for tipper (16fig14, 15, 16, 17) pneumatic or electrical that is anchored or fixed to one of the columns. They have two functions:

g1) if it meets above the clamps of the top part, to serve to enable space (turning up) so that the initial packing interferes between the clamps of subjection (3) without difficulty.

g2) whenever there is this one placed below in the low part, to serve to make to overturn to the packing - once it has been already transformed in the shape of cubic figure - turning it down, so that himself, finally, it ends up by falling down on a trasportadora tape, receptacle or box.

H) Units of linear movement (17fig20, 21) pneumatic or electrical that they anchor or they fix to the columns. Depending on its function they are of two types:

h1) two units of linear movement (17fig21) with a platform (18) that are parallel and do couple to left and right of the machine.

The clamps (6,8) are placed or installed on / in this platform to facilitate, this way, that on the one hand (whenever these are installed in the top part) leave free space so that the initial packing is deposited between the clamps of subjection (3); and on the other hand, if the platform (18) with two units of linear movement it will move the clamps (6,8) of the low part, these will serve so that the packings already transformed into a form of cubic figure and the flaps that have wanted to be sealed and cut, could fall down without making difficult and without it hindering nothing to them, towards a conveyor belt (opportunely placed under the machine), receptacle or box.

h2) a unit of individual linear movement (17fig20) that moves the clamp of subjection (3) and, in turn, to the initial packing, for this way, to be able to remove to both of being located exactly on the clamps or set of clamps (6,8), so that this way, when these clamps open subjection (3) to themselves: The cubic packing falls down on a conveyor belt, box or some receptacle. 3rd phase [c]: (1, 3, 9, 10, 13, 14, 15, 16, 17).

The flaps or already sealed triangles and (sectional) coffees with a dash of milk, they separate of the packing already transformed to form of volumetric three-dimensional geometric body, of the following ways:

a) for blown, facing or direccionated towards a concrete place.

b) falling down straight to the soil or on a receptacle - box, since under the machine in vertical there is no conveyor belt or anything that it prevents.

In case he installs a conveyor belt to himself under the machine in vertical, these possibilities happen:

c) going from one conveyor belt to other one, since a space stays between them, the sufficiently big thing like so that the flaps that will be always smaller, fall down to the soil or on a receptacle.

d) across a grill conveyor belt, since it arranges with sufficiently wide hollows like so that, themselves, the flaps fall down to the soil or on some receptacle, which will be placed exactly below.

- the packings already transformed with the form of volumetric three-dimensional geometric body, separate of the packing of the following ways:

  a) falling down straight on a receptacle or box, since under the machine in vertical there is no conveyor belt or anything that it prevents.

  b) falling down straight on a conveyor belt that exactly happens or is installed for below and/or next to the machine in vertical of the invention: by means of a Unit of linear movement (17) that moves or directs the clamp of subjection (3) and also to the packing - since these are fixed or anchored to this Unit of movement (17) - of left to right, freeing this way the area of below where they are or there are placed the clamps (6,8) or any of the elements, devices or pieces of the proper machine in vertical.

  c) falling down by means of a Trapdoor (10) or from another conveyor belt, straight to one / other one conveyor belt or also to a box or receptacle.

  d) to be trapped / fixed (selected) and directed by the claw of the arm

of a robot or also for / grasp clamp / expert of a mechanical arm.
e) by means of an air shooter (15) facing or direccionated this way to expel to the packing already transformed towards a concrete place.
d) by means of a clamp he guides (13).

5) model [D].

[0148] Transformater in vertical by means of the sealed one or sealed and cut flaps , across a robot for beating of the packing on one or two impact clamps (6) immobile / mobile ones, and with one or more clamps of sealed and cut (8).

1 st phase [d]:

[0149] The initial packings that have been made by a vertical or horizontal machine of filling, available on the current market: they move for a conveyor belt (it can be of circular circuit) this way to be fixed / trapped and directed by the Claw of the arm of a robot - also it is valid with a mechanical arm - of 4, 5 or 6 axes, in that the packing can be fixed and hold by this claw by means of different devices and ways, as for example next they are described:

A) by means of a tweezer (at the top and for below) with or without air aspiration.
B) by means of only one top clamp (it is located on the packing) with orifices with vacuum cleaner of air incorporated in each one.
C) By only suction cap hold(it will become just in the central point of the packing) or you change simultaneously in parallel in the same line (with air vacuum cleaner) where they will be able to rest on half of the packing.
D) for anyone another system of similar answer and functioning.

[0150] Depending on the movements to be realized we will need robots with 4,5 or 6 axes, being the last one most indicated for this type of application.

[0151] To the robot it will indicate him to itself and/or will introduce the precise or exact parameters and guidelines (also the Robot arranges of the system of photographed digitalis by means of digital cameras, in that it is photographed repeatedly to the initial packing which moves for a conveyor belt, this way to facilitate the coordinates of the exact place and in the correct position in which the initial packings are, so that continued every initial packing is taken, seized, fastened, blocked and/or immobilized by the claws of the robot for the area and the correct form) of where and of how it is necessary to take and to guide to the initial packing and to the packing already transformed to the form of volumetric three-dimensional geometric body, which it has been about to give or to obtain.

- all these systems of subjection (3), they have a double function:

  a) to hold and to immobilize the packing so that it is not possible to move towards any side, but if leaving that could get conceited or increases of volume, as if it was a question of a balloon of those of inflating to lung.
  b) to be directed on the different reports - axes that compose a <robot>, to do that the packing turns, rises, descends or handling, so that this way this packing is placed above or on one or more clamps / bodies of impact immobile (6) / it is or / and mobile / is and with one, two or more clamps of sealed or sealed and cut (8).

- the options more outstanding of how and where the packings must be taken hold or held, are there the following ones:

  The initial packings of at least two faces that are in knocked down position, can be taken of the following two ways:

  1 - for one or two of its faces and by means of a way of air sucking as for example a cupping glass or clamp with orifices with vacuum cleaner.
  2 - for two of its faces by means of a tweezer or one or more clamps of subjection (3) or sets of one or more clamps of subjection (3), where they line up the top and low part or are aligned, for power like that to exercise a constant pressure towards the interior of the packing but with adjustable muffling, so that this way the initial packing could get conceited or increase of volume, and so that the flaps could form correctly, without creases that could make the welding of the sealed one difficult or sealed and cut of the flaps.

  The initial packing can be taken or seized: for the area of the half, for the center or average point of the packing, or but also for the area or sides put up nearby where they are going to originate, seal or to seal and to cut the flaps; this way to expel the content packed inside the packing, on the extremities - vertices-picos or areas perimetrales of the initial packing, and that next I explain in a more detailed way, in some of the cases.

  a) on the whole part or transverse line of half of the packing (3fig22), crossing it of a side to other.

b) only for a central point of the packing (4,9fig23). In this case, in turn, it can go also, incorporated in the last axis, the second hook - object of grip with or without air vacuum cleaner like for example a cupping glass, in which this one will be located in the same central point but of another opposite face of the initial packing of at least two faces. This second hook will be fastened by means of a mechanism way as for example that of a hinge with form of arch, or of any other form in the one that could escape to the packing without touching it; this one will be driven once the initial packing by means of the arm of robot or mechanical arm begins to raise the initial packing. Therefore, the purpose of this device, it is that of trying on the one hand, that the packing holds better for both sides for a better handling and a major speed of prosecution and, on the other hand, so that it is possible to exercise major pressure on the content packed in interior of the initial packing: towards the apexes, corners or extremities of the same initial packing, so that this way later the flaps or triangles form well.
c) for any other side or area of the packing, whenever a correct maneuverability of the packing is guaranteed and that also it is possible to exercise pressure on the stiff content of the interior of the initial packing: towards the apexes, corners or extremities of the same initial packing, so that this way later the flaps or triangles form well.

- the fact of forming well the flaps is fundamental so that these later could be sealed or seal and cut correctly without creases and wrinkles that make the welding difficult.
- the force with which the packing will hold, be at all times adaptable and adjustable but, in turn, it will have incorporated a system of adjustable muffling by means of a way as for example that of a spring or delay valves, so that this way the initial packing could get conceited or increase of volume when the clamp / body of impact (6) strikes to any of the side sides perimetrales of the initial packing.

2nd phase [d]:

[0152] Continued, at the same time, the robot will lead the initial packing towards one or more impact clamps - bars (6) immobile ones with one or two clamps of sealed (8) or sealed and cut (8) on both sides, this way to lead or to place any of the side sides of the initial packing: on / against the clamp / body of impact immobile (6) and in the position that loves (vertically in 90 degrees; inclined in 45 degrees or with the degrees of inclination wanted) in every case, in which this can depend: of the type of packing with form of volumetric three-dimensional geometric body which it is about to transform or obtain.

[0153] In any case, whenever a side side is struck or incrusted against / in the clamp / body of impact immobile (6): they arise or there originate one or two flaps or triangles [which seem how to be embracing to the impact clamp (6) for one or two of its sides] and, at the same time, the packing will be transforming on having been get conceited or having increase of volume (as it corresponds to him: to major major flaps volume of the packing) in a natural and spontaneous way as they are originating (by turn, of two in two, of three in three, of four in four or each time more the flaps or triangles. Continued, to the moment, the flaps that love, will be sealed or sealed and cut, so that this way and thanks to these perpendicular lines of welding (2) who award steadfastness and consistency: the packing with form of three-dimensional geometric body, which from a beginning we wanted to obtain, will stay continued in the time, with the same form of volumetric three-dimensional geometric body.

- the sets of clamps (6,8) or the clamps - bars of impact (6) and of sealed or sealed and cut (8), they can be ready or placed of the following way: One or two Sets triple / fourfold of clamps (an impact clamp / body (6) in the center and two clamps of sealed (8) or sealed and cut (8) that line up with the first one, to left / right or above / below) or / and one or two Sets clamps double (an impact clamp / body (6) in the center and other one of sealed (8) or sealed and cut (8) that lines up with the first one, to left / right or above / below).

[0154] Functioning to transform the initial packings into packings of form of three-dimensional geometric body, by means of sets of two or three clamps (6,8) in which the clamp - bar of impact (6) is immobile:

<u>Double clamp in horizontal or vertical and in parallel:</u>

[0155] It consists of a clamp - bar of impact (6) that is fixed or is immobile, and for a clamp of sealed or sealed and cut (8), where this one can be placed for below or superficially or to left or right. Also, on having been driven, it will seal the last one or will seal and cut the flaps or triangles that have wanted to originate: for the action of beating of any of the sides of the initial packing in / on / with this clamp / body of impact immobile (6).

[0156] For this type of set of clamps (6,8), in which the clamp - bar of impact (6) is immobile, the movements and following actions can be realized:

Once the claw of the arm of the robot has already

fixed to the initial packing, one will direct him to this one or / and will make to turn so that one, two or more of its side sides beat against / in / on the clamp - bar of impact (6) and in that this one can be ready or placed so much in a horizontal upwards or downwards and also of side towards the left or right; but in any of the cases, to every lateral side of the initial packing can posicionar with regard to the clamp - bar of impact (6), of the following way:

- with 90 degrees of inclination or completely frontal in parallel, in which they originate or two flaps or triangles arise in every beating: one to every side of the clamp - bar of impact (6) or clamp / body of impact immobile (6).
- in any degree of inclination, in which the most ideal are understood between 20 to 60 being them 45 inclination degrees the most effective as for that it originates better and with major facility: the only flaps or triangle that in this case, in every beating originates or arises.

[0157] The same action of beating in the degrees of inclination that wants, it is possible to repeat on having been turn (as for example 180 or 90 degreesor, approximately) the packing: in one, two, three or four of the side sides of the initial packing, or but also in more than four whenever the initial packing has more than four side sides or apexes. Therefore this will depend, of the packing of form of three-dimensional geometric body which it is about to obtain, as he explains himself next, in the following examples:

- in case let's want to obtain a packing with form of cube or of rectangular prism, the action of beating will recur four times in two or in four of the side sides of the initial packing: this way to cause, to seal or to seal and to cut four of the flaps or triangles.
- in the case we want to obtain a packing with form of hull of a craft overturned, will realize this action of beating only once, in the same lateral side or in two of the lateral sides of the initial packing, this way to cause to seal or to seal and cut two of the flaps or triangles.
- in the case we want to obtain a packing with form of jug, with only one neck dispenser, the action of beating will recur three times in two or three of the lateral sides of the initial packing, this way to cause, to seal or to seal and cut two of the flaps or triangles. In the same lateral side and repeating two times the beating: they can originate, seal or seal and cut two flaps.
- the arm of the robot or mechanical arm, when more it pushes or incrusts any of the side sides with the initial packing in / against / on the clamp - bar of impact immobile (6): major will be the flaps or triangle that originates, therefore, major will be the implemented / transmitted volume or that acquires the packing,

since, on having originated, having been sealed or having been sealed and after every flaps is cut, one reduces in the measurement quantity that there corresponds, in every case, the size of the bundle of the packing on having removed his part: for what, on not having had diminished or removed any quantity [fluid, (liquid / doughy or / and air / gas) and with solid / it granulates

- two / powder or without them] of the content packed inside the initial packing, the packing it gets conceited more or more volume increases.

[0158] Also it influences or affects straight to the size of the flaps or triangle which one wants to cause: the factor of the length in width that could have the clamp / body of impact immobile (6) with with regard to the length of any of the side sides of the initial packing: to major width of the clamp / body of impact (6) immobile, less will be one or more of the flaps or caused triangles.

<u>Triple or fourfold clamp in horizontal or vertical and in parallel:</u>

[0159] It consists of a clamp - bar of impact (6) of one or two clamps or pieces: that is fixed or is immobile, and for two clamps of sealed or sealed and cut (8) where these can be placed for below or superficially or to left or right. Also, the last one, on having been driven, they will seal or seal and will cut the flaps or triangles that have wanted to originate: for the action of beating of any of the sides of the initial packing in / on / with this clamp of impact immobile (6) of one or two clamps or pieces.

[0160] For this type of set of clamps (6,8), in which the clamp - bar of impact (6) is immobile and of one or two clamps or pieces, the movements or following actions can be realized:

[0161] Once the claw of the arm of the robot has already fixed - stingy to the initial packing, one will direct him to this one or / and will make to turn so that one, two or more of its side sides beat against / in / on the clamp - bar of impact immobile (6) of one or two clamps or pieces, and in that this one can be ready or placed so much in a horizontal plane mouth arrives or mouth below as also of side towards the left or right; but in any of the cases, to every side side of the initial packing him one can posicionar with regard to the clamp - bar of impact (6), of the following way:

- with 90 inclination degrees or completely frontal in parallel, in which they originate or two flaps or triangles arise in every beating: one to every side of the clamp - bar of impact (6) or clamp / body of impact immobile (6).
- in any degree of inclination, in which the most ideal are understood between 20th to 60th, being them 45 inclination degrees the most effective as for that it originates better and with major facility: the only flaps or triangle that in this case, in every beating origi-

nates or arises. In this concrete case, one of the clamps of sealed (8) or sealed and cut (8) is not used, after a flaps or triangle originated only.

[0162] The same action of beating in the degrees of inclination that loves, it is possible to repeat on having been turn (as for example 180 or 90 degrees or approximately) the packing: in one, two, three or four of the side sides of the initial packing, or but also in more than four whenever the initial packing has more than four side sides or apexes. Therefore this will depend, of the packing of form of three-dimensional geometric body which it is about to obtain, as he explains himself next, in the following examples:

- in case let's want to obtain a packing with form of cube or of rectangular prism, the action of beating will recur two times in two of the side sides of the initial packing: this way to cause, to seal or to seal and to cut four of the flaps or triangles.
- in case let's want to obtain a packing with form of hull of a craft overturned, this action of beating will be realized only once, in the same lateral side of the initial packing, this way to cause, to seal or to seal and cut two of the flaps or triangles.
- in case let's want to obtain a packing with form of jug with only a neck dispenser, the action of beating will recur two times in two of the side sides of the initial packing, this way to cause, to seal or to seal and cut three of the flaps or triangles, since in the same side side for every beating: they can originate, seal or seal and cut one or two flaps.
- the arm of the robot or mechanical arm, when more it pushes or incrusts any of the side sides with the initial packing in / against / on the clamp - bar of impact immobile (6): major will be the flaps or triangle that originates, therefore, major will be the implemented / transmitted volume or that acquires the packing,
  since, on having originated, having been sealed or having been sealed and after every flaps is cut, one reduces in the measurement quantity that there corresponds, in every case, the size of the bundle of the packing on having removed his part: for what on not having had diminished or removed any quantity [fluid (liquid / doughy or / and air / gas) and with solid / granulated / powder or without them] of the content packed inside the initial packing, the packing it gets conceited more or any more volume increases.

[0163] Also it influences or affects straight to the size of the flaps or triangle which one wants to cause: the factor of the length in width that could have the clamp / body of impact immobile (6) with with regard to the length of any of the side sides of the initial packing: to major width of the clamp / body of impact (6) immobile, less will be one or more of the flaps or caused triangles.

Machine transformer of initial packings in packings of three-dimensional geometric body, in which the initial packings are manipulated or / and directed by a robot or mechanical arms, and where also there are two impact clamps / bodies (6) immobile ones or two sets of clamps 6,8):

[0164] There can be, simultaneously, two sets of clamps (6,8) one next to other (as for example above and below or to left and right) but with the necessary separation between them as so that like minimum the initial packing could enter or happen between these two sets of clamps (6,8), so that this way, the Claw of the arm of the robot or mechanical arm that has gather - subject to the initial packing: direct and beat incrust first to one of the side sides with the initial packing against / in / on one of the clamps / bodies of impact (6) immobile ones of one of two sets of clamps double / triple / fourfold (6,8) that exists in every Machine transformer, and so that immediately later: any of other side sides of the same initial packing, also is directed and struck or incrusted against / in / on other one with the impact clamps / bodies (6) immobile ones of another set of clamps double / triple / fourfold (6,8) that exists in every Machine transformer.

Machine transformer geometric body, in which the initial packings are manipulated or / and directed by a robot or mechanical arm, and where also there are two sets of clamps (6,8) in him that, in one of the sets the clamp of impact (6) is immobile and in other of the sets, is mobile:

[0165] For what, the robot or the mechanical arm once there is attached one to the initial packing, in the first phase: it will direct it and will beat will incrust to any of the side sides of the initial packing against / in / on the clamp of impact immobile (6) of a double / triple / fourfold set so that this way there originate one or two flaps which one or the two will be sealed (8) or (8) sealed and cut; so that continued and in the second phase: another clamp / body of impact (6) that in this case is mobile and in which this one by means of a way of being impelled can be fixed so much to the shoot of a linear cylinder (9) or of draft (16), as also to a platform (18), in which in turn this one is impelled by one or two Units of linear movement (17); but in any of the assumptions, on having been driven, this clamp / body of impact mobile (6) will beat or / and will embed itself against / in / on any of other side sides of the initial packing, so that finally also they originate, seal or seal and there cut other one one or two of the flaps of the initial packing.

- in the case, of which the initial packing had more than four apexes, they can originate, seal or seal and cut more than four flaps or triangles, repeating again any of the phases, where also the Claw of the arm of the robot or mechanical arm: it can make to turn again (180th; 90th; 45th; etc.) to the initial packing,

this way to set to shot or in the correct position to others of the side sides of the initial packing, with the intention like that from which again they could originate, seal or seal and cut all the flaps or triangles love.

- the clamps (6,8) or clamps sets (6,8) and other elements that can exist or arrange any of the Machine transformers in packings of three-dimensional geometric body: they can be placed or fixed well on a conveyor belt, or you separate and nearby but not above, of a conveyor belt.

3rd phase [d]:

[0166] The flaps already sealed triangles and cut (sectional), are separating of the packing already transformed to form of volumetric three-dimensional geometric body, of the following ways:

a) for blown, facing or direccionado towards a concrete place.
b) falling down straight to the soil or on a receptacle - box, since under the machine in vertical there is no conveyor belt or anything that it prevents.
In case it installs a conveyor belt under the machine in vertical, these possibilities happen:
c) spending from one conveyor belt to other one, since a space stays between them, the sufficiently big thing like so that the flaps that will be always smaller, fall down to the soil or on a receptacle.
d) across a grill conveyor belt, since he arranges it of sufficiently wide hollows like so that, themselves, the flaps fall down to the soil or on some receptacle, which will be placed exactly below.

[0167] The packings already transformed with the form of volumetric three-dimensional geometric body, separate of the packing the following ways:

a) falling down straight on a receptacle or box, since under the machine in vertical there is no conveyor belt or anything that it prevents.
b) falling down straight on a conveyor belt that exactly happens or is installed for below and/or nearby.
c) falling down straight on an immobile or mobile surface - base, which exactly happens or is installed for below and/or nearby.
d) by means of the same claw of the arm of the robot or mechanical arm, which there will deposit to the packing already transformed with the form of geometric body in 3D who has loved: on a conveyor belt, a box or receptacle.
e) by means of an air shooter (15) facing or directionated and whenever the Claw of the robot or mechanical arm has released previously to the already transformed packing: expelling this one towards a certain place.
d) by means of a clamp it guides (13), whenever the Claw of the robot or mechanical arm has released previously to the already transformed packing and of that also this packing is placed on a surface - base or conveyor belt: this way to push or to move to this packing towards a concrete place.

6) MODEL [E].

[0168] Transform in vertical across two robots, by means of the sealed one or sealed and cut flaps with clamps of sealed (8) or sealed and cut (8), and also for beating of the packing in one or two impact clamps / bodies (6) immobile or / and mobile ones.

[0169] There are realized the same processes or procedure of transformation of initial packings in packings with form of three-dimensional geometric body, that already explained ones previously in the model of machine [D], but with the difference that in this case, the transformation is going to be realized by means of the claws of two Robots that jointly act in synchrony or they will interact jointly, this way to cause the flaps or triangles, which continued will be sealed or sealed and cut, this way finally to obtain the packing that desired with form of volumetric three-dimensional geometric body.

1 st phase [and]:

[0170] The first robot of 5/6 axes, it has the function to direct to the initial packing towards a certain fixed place and in the correct position [also the robot, if it was the case or the machine transformadora that it goes to use, can make to turn on itself to the packing: this way to place any of its side sides in the position that wanted, once the initial packing is held - agarrado-bloqueado and/or immobilized but with adjustable - adaptable muffling, by means of a way like for example a claw in which he can have had or in which it is possible to connect, the following thing:

a) one or more clamps of subjection (3) or sets of one or more clamps of subjection (3).
b) with tweezers / clamps or / and cupping glasses with aspiration or without it, as been described in the 1 st phase in the model of machine [D].

- the functioning of any of these options of the previous paragraph as also of any other process or procedure that could be related to this Machine of the model [D] of the invention, already they have been explained and developed previously, in 1ªfase [d] of the machine transformadora across only one Robot.

2nd phase [and]:

[0171] The second robot of 4/5/6 axes, it has the function to cause, to seal or to seal and to cut the flaps or triangles that love. Therefore, this claw has fixed or an-

chored on it:

a) one or more clamps / bodies of impact mobile (6) / it is or immobile / it is or / and one or more clamps of sealed (8) or sealed and cut (8), or / and also one, two or more sets of clamps (6,8) {double and/or triple} and/or fourfold in that the clamp of impact (6) they can be mobile or / and immobile.

b) one or more clamps tweezer that composes of two clamps close (6,8) an axis cross street - hinge that allows him to develop a movement similar to that of a common tweezer, this way to hook and/or to squash the apexes - peaks or two contiguous side sides that an apex always has both of the initial packing and of the already transformed packing. This way, it originates, seals or seals and cuts one, two, three, four or more of the flaps or triangles. The clamps tweezer, therefore, can develop the following movements: To open two clamps (6,8) to close tweezer of every set on having had one or two linear mini-cylinders (9) or / and draft (16) that impels them or gesticulates, so that this way and on having been supported and position of opened two clamps tweezer, to advance these forward impelled by a linear cylinder (9) or of draft (16) this way to cause flaps or triangle on having shocked to beat these against / in the apexes.

Continued the clamps tweezer will close and to the moment they will seal or seal and will cut the flaps. Also, before the flaps or triangle is sealed or sealed and cut: two clamps can step back or a certain length be carried back backwards as to help, this way, to that there could be formed better the form of the flaps or triangles without any wrinkle or crease about the transverse line that it is doing contacted both with the flaps and with the trunk or the rest of the packing.

c) there can be, in turn, any of the elements, devices, pieces or other clamps (2,4) of anyone of the Machines of the invention.

[0172] Therefore, if in the claw of the second robot it has one or more impact clamps (6) mobiles: the first robot has the function principally to take, to hold and to direct to the initial packing towards an exact place and in the positions that wanted or that they correspond, so that followed this second robot causes, seals or seals and cuts the flaps that love; and if for the opposite, the claw of the second robot has one or more impact clamps (6) immobile ones: the first robot has the function principally to take, to hold and to direct to one, two or more of the side sides of the initial packing towards the clamp / body of impact immobile (6) / it is, so that this way they originate, seal or seal and cut the flaps that love.

3rd phase [and]:

[0173] It is the same procedure and development that the presented one in 3ªfase [d].

7) Model [F].

[0174] Transformer of initial packings that in its interior contains only air or gas, in packings of three-dimensional geometric body, by means of the sealed one or sealed and cut of one or more flaps or triangles with clamps of sealed (8) or sealed and cut (8).

[0175] Of this case, the distributed and available vertical / horizontal filling machine on the market of nowadays for already many years, is going to make the initial packings of at least two faces with only air or / and gas packed in its interior, by means of a way like the cannulas or (pneumatic) bombs of filling - arranged for the occasion - that insuflate the quantity that wanted this depends on the packing of form of three-dimensional geometric body that it is about to obtain) of air or / and gas in interior of the packings or bags.

- the transformation of this type of initial packing with only air or / and gas packed in its interior: it is going to be realized by means of the same procedures and processes of any of the Machines transformers in packings of three-dimensional geometric body of the invention.
- the final result of the packings transformed with only air or / and gas packed in its interior: it is going to be the same, but with the difference that in this case, these packings are going to serve or go to use like "basic packings", since there will be extracted from these the air or / and gas contained in its interior, so that this way these could be squashed, folded up or doubled, and later to be packed some after others.

[0176] Next, these packings are sold and taken without containing anything packed in its interior: to producers of filling and manufacture of packings, which by means of its production lines and with an adapted and specific machine for it: one is going to be taking one (aspiration cupping glasses to open an opening mouth; clamps) each of these empty packings for continue to introduce (dispensers; hoppers; weighings, cannulas that interfere inside the stoppers or mouthpieces that previously have been adherent to the packing; valves; supports; etc.) in its fluid interior (liquid / doughy or / and air / gas) and with solid / granulated / powder or without them.

- there can be used, at a later stage, systems or different ways from filling of these packings that, beforehand, are empty or that inside do not contain anything:
- by means of a Stopper - dispenser type those of tetrabrik, clinging or adhered in the faces of the part of above of the already transformed packing or of the initial packing, for this way once a just orifice has been opened under the stopper: to extract all the air of this one, on having pushed to squash down the already transformed packing since this one is flexible, therefore it will bend easily this way to serve later

as basic packing.

In this form or system of packing, it is more appropriate or effective that later are used so that they are packed or fill in its interior, solid products as for example: snaks, potatoes, dry fruits, fruit, caramels, pieces of toyshop or hardware store, olives, etc.

- by means of Necks dispensers or projecting tops, which definitely have been created so that they could interfere or tipple for the tops or peaks of the end of these necks dispensers, since previously on this part or area: an opening or orifice has originated by means of a way of perfo - ration or strip, this way to be able to introduce or fill the products that love, inside these packings. Finally, once it has concluded the filling of the packing, the perforated or torn part will be sealed or will seal and cut.
- by means of leaving the part of above of the already transformed packing and of the initial packing, without they originating, seal or seal and cut no flaps or triangle.

[0177] This way, there will stay a mouth of very wide or wide transverse opening in that, also, previously never have been sealed nor sealed and cut, so that this way and later: interfere, fill or be packed by this opening or wide or wide mouth, any product that loves. Finally, once it has concluded the filling of the packing, this opening or wide mouth that from a beginning the initial packing was already arranging or had: it will be sealed or will seal and cut this way to try the watertightness of the packing.

[0178] Elements, devices, clamps and pieces that can exist or any comprehension of the Machines transformers in vertical (also it can be in horizontal or in any other inclination degree) of sealed or sealed and cut flaps or triangles. They go to prepare / make packings with volumetric forms three-dimensional geometric body of three or more faces: from the transformation of sealed initial packings of at least two faces and of flexible material, which in its interior contains fluid (liquid / doughy or / and air / gas) and with solid / granulated / powder or without them.

[0179] The elements, devices, clamps and pieces that next are described, are developed and explained as they express themselves in the drawings, about that in the beginning they are designed or thought, so that the initial packing should be transformed into packing of volumetric three-dimensional geometric body: being this one placed and posicionado in vertical standing, therefore all the clamps, elements, devices and pieces that could exist in each of these machines transformers in 3D, also are placed or fixed and positioned in vertical standing.

[0180] For this motive, the Clamps (3, 6, 8, 13), Trapdoor (10), Platform (18) or fixing Bars (11): they are suspended like in the air, on having been joined or fixed to the shoots that impels or of the actuators that drive them, but with the exception of the fixing bars (11), since these support themselves above or between the clamps of subjection (3).

[0181] In the case, of elements or devices as the optical Sensors or of infrared (1), Shooter of air (15), Fence of blockade (12), Bristles swippers barredoras (14), Units of linear movement (17), linear Cylinders (9) or of draft (16): these are or can be fixed or anchored to one or more columns in position so much vertical as in horizontal or in different inclination degrees.

[0182] In turn, these columns to be able to regulate the level of height to which they should be located: so much the clamps (3,6,8) like the elements, devices or pieces that could exist in every Machine transformer in packings in 3D: they can take or have a few orifices of interior thread or without it, which these columns will cross from side to side forming parallel couples of two or more orifices in horizontal and vertical one next to other with the same distance that desired of separation between them.

[0183] Therefore, the clamps as any other element or device of the machine will be screwed or with any other anchoring system as for example: props with orifices to introduce pins to these props or columns so much in vertical as in horizontal. Also, these columns can appear by every machine in vertical: one [to a side street, ahead or behind the initial packing], two [I faced to face to another one and to left and right of the clamp of subjection (3) or initial packing] or more than two [to left and right, ahead and behind some opposite others respectively].

[0184] The cylinders that are anchored or fixed straight in a column or platform, in some of the cases, will have or they have a few orifices with interior thread or not and forming parallel couples or more than two, one after others. The screws will wind in the orifices with interior thread and props will be anchored in orifices without thread (fig18, 19, 20).

- in any case, both the screws and the orifices are designed to guarantee a perfect immobilization of the elements, devices or pieces that are subject to the columns and, at the same time, they will prevent that they could incline or tilt the not even (the most minimal thing) towards no side.
- these clamps, elements or devices, also, can be anchored or fixed to the same columns, but being these in horizontal position. These will hold ó they will be moored of different forms: well screwed to a wall, by means of a plaque, welded to a metal iron or cemented to a wall. All of them will be in perfect horizontalidad position without any inclination (bubble leveler).

[0185] They can be added to this Machine in vertical, without being necessary, one or any more of these different elements, devices or pieces and in multiple possible combinations. Also, they can be built-in: one, two, three, four, five, six, seven or more of these in any of the Machines transformers in packings of three-dimensional geometric form.

[0186] The elements, devices or pieces are the following ones:

A) Trap-door (10fig9,10,11,12,13,14) that is placed under the clamp of subjection (3) or of the initial packing, and is adaptable in height.
This one is fixed to the shoot of a cylinder linear (9) or / and of draft (16) pneumatic or electrical and, in turn, the last one is anchored or fixed to one of the columns.
B) Fixing bars (11fig12,13) that comprises two ways of supporting itself and of placing itself between the clamps of subjection (3):

b1) they are placed between the subjection clamps (3), in which these have to the ends a few ceilings not to fall down or to separate and to be supported in the place.
b2) they are placed between the subjection clamps (3), in which these are supported by means a few cylindrical rods, perpendicular to the same fixing bars by (11), which drill or cross through a few orifices that it has arranged and are placed in the side ends of these fixing clamps.

C) Blockade fence (12fig10,11) anchored or fixed in vertical on the trap-door forming with it an angle of 90 degrees, in this way to serve as atop or as limit where it owes in an exactly position for the initial packing exactly under the clamp / expert of impact (6).
They can always have different heights, but limited to the space that could exist or stay between the clamp of subjection (3) and the trap-door (10). Also, these can be placed to the left and/or to the right of the initial packing, in which this depends on where the initial packing is introduced between the clamps of subjection (3).
D) Clamp guides (13fig18,19) close or fixed to the shoot of a linear cylinder (9) or / and of draft pneumatic or electrical (16), in that in turn these are anchored or fixed to the columns.
This clamp (13) can have form of straight line, or also but towards the half approximately of this straight line, can have a deviation or curvature was doing out of some 20th approximately, for itself to do that the initial packing is expelled towards a side or was doing out in straight line or in straight angle with regard to the clamps of subjection (3).
E) Bristles barredoras (14fig9, 10, 15), in which these are fixed or connected to the rim and down of one or two sides of the Trap-door (10) that have major length.
This hair or bristles are semi riggid but with enough flexibility as to be able to move ahead and backwards, this way to drag with it to the packing or to the flaps or triangles that could have remained deposited and hindering: on any of the machine transformers in 3D.
F) Air shooter (15fig14) that one anchors and it fixes to the column, and placed in height towards half of the height in which there is the packing already transformed in the shape of three-dimensional geometric body. Also, this one can go or be fixed inside or on the outside of the column, but in any of the cases it will be directed towards the initial packing, in this way to displace to the packing it was doing out or towards the place that it is wished or it is about to be necessary.
G) Cylinder or engine of draft for tipper (16fig14,15,16,17) pneumatic or electrical, that is anchored or is fixed to one of the columns, in that to the shoot of this cylinder of draft (16) they can be fixed, in turn: to other cylinders lineales (9), of draft (16) or of tweezer / double shoot and double effect that they activate or impel to any of the clamps or sets of clamps (3,6,8), or also to any of the frames or chassis where there are fixed or anchored anyone of the clamps, elements or devices of any of the Machines transformers in 3D.
H) Unit of linear movement (17fig20, 21) pneumatics or electricity company, which is fixed or anchored to the column.
This one can be ready in two different ways:

h1) Two Units of linear movement in couple, one opposite other one in parallel and fixed each one to two different columns and to the same height, this way to move to a platform (18) (17fig14, 15) that exactly is anchored or fixed by each of two of its parallel side ends: to two Units of linear movement (17) that support it.
In the platform (18), in turn, they can be fixed any of the clamps or sets of clamps (3, 6, 8), and also, any of the frames or chassis where there are fixed anchored anyone of the clamps, elements or devices of any of the Machines transformers in 3D.
h2) A Unit of individual linear movement (17fig20) that is fixed or is anchored to a column, and in that this one fixed or anchored a clamp of subjection (3), this way to move this one from left to right or of above below.

I) Optical sensors, of infrared, of force, of weight, etc.
J) Valves that control the movements and intensity of the cylinders.

Lines of the typical and only welding as result of the sealed one or sealed and of any of the flaps or triangles.

[0187] This line of perpendicular welding (2), as they express themselves in the drawings or figures: 25,26,27,28,29,30,31,32,33,37,38,39,40,41,42, 44,45,46,47,48,49, 51, 52,53,55,56,57,59,60, 61,62,63,64,65,66,67: depending on the form that could have the packing already transformed in the shape of

threedimensional geometric body, it can be ready or positioned in this packing in horizontal, vertical or in any inclination degree.

[0188] It is possible to leave this line of welding (2) or it can be of the millimeters of which we want; in case of a cubic packing that is going to serve as ice cube (1fig39), there will be left a line of welding (2) or rough edge of approximately two or three millimeters, since once of this welding has been generated one will proceed, instantaneously, to the cut of the remaining burrs and miniflaps that always stays after any type of welding is carried out on any type of flexible materials. If on the contrary, we wanted to make packings, already of major size and with nutritive substances packed in its interior, which will be consumed, it will prevail to leave this line of welding (2) with the rough edge of approximately five/six millimeters, since esthetically it is nice and because this one also provides major safety of sealed and consistency to the packing. In conclusion, this line of welding (2) can have the millimeters of rough edge that loves, as for example of 2,3,4,5,6,7,8 mm or more.

- in turn, this line of welding (2), it can be realized in different ways: rectilinear, elliptical, diagonal, sinuous curve, in tops of saw, of a not uniform way combining simultaneously in the same welding (2) forms different from welding, etc.
- these perpendicular lines of welding (2), can be realized by every initial packing of at least two faces: the quantity that wanted, pudendo to be from one, two, three, four or even more whenever it is possible to cause one more flaps in any of the side sides or apexes of the packing initial or already transformed with the form of three-dimensional geometric body that we have wanted to obtain or to be necessary.

Procedure to transform sealed initial packings of at least two faces made with flexible material and that in its interior contains fluid (liquid /thikness or and/or air / gas) and with solid / granulated / powder or without them: in packings with form of cube and of rectangular prism:

[0189] These in turn can have more square form than rectangular and, also, they can have of any size, as for example that of a Dice of those of playing or that of a box of cookies.

[0190] They have all its smooth faces without flaps or triangles.

[0191] To obtain this packing, we must cause, seal or seal and cut: four flaps or triangles (two of a side side and another two flaps of another side side that can be exactly the opposite parallel or other of nearby contiguous to the first one) of the initial packing, in which the difference so that it is a packing with form of a cube or of rectangular prism, depends in two main factors:

- of the form that has the initial packing, the more square are the lateral sides of the most square initial packing it will be a transformed packing.
- of the size of the flaps or triangle that originates, seals or seals and cuts: to major flaps or triangle (of one, two, three or the four), more square it will be or it is the packing transformed to form of cube or of rectangular prism. Being this packing already transformed in the shape of rectangular cubic or prismatic figure and, also, in standing vertical position: they are appreciated or it differs (from a zenithal sight and opposite to every face) so much in the faces that do of base of more above as in the same as further down, a few marks or lines of welding that draws the features or the form as that of one <H>,due to two perpendicular lines of welding (2) that find in two of the parallel sides one opposite other and, also, for a welding line perimetral (1) placed one in the way and perpendicular those one situated before.

[0192] Packing ice cubes made by the Procedure and Machines of transformation from sealed initial packings of at least two faces made with flexible material, which in its interior contains liquid: in completely volumetric packings of geometric body in 3D:

[0193] In this case, in this packing that serves as alone ice cubes it goes to pack water or water with some another liquid like for example coloring, so that this way these could be used like common ice cubes to cool drinks, food, human organs or to treat inflammations.

[0194] One of the characteristic more to bear in mind, is that all its faces are smooth since there does not contain flaps which guarantees that the product is more hygienic and esthetic.

[0195] These packings for iced cubes can be made by the same size as the common ices, although in this case and due to the facility and simplicity of the procedure of manufacture of this type of packings, they will be able to be made of many other sizes or of all the sizes (ice ingots for beer pitchers; mini ices for cups of coffee or tea; rectangular prismatic ices lengthened to introduce them in the bottles) and of many other different forms since also they serve like ices: all the different designs from packings irregular polihedrals that with the machines and procedures of the invention can, also, be made.

[0196] Also, this mini packing once has been already transformed so that to be an ice cubes and after it has been sterilized, previously, by means of a way like for example an autoclave with a liquid disinfectant or with beams ultraviolet: optionally it is possible to wrap them with a second wraped as it can be a plastic of retractable polyethene that will cover it, this way to guarantee the harmlessness of the same one

Processes, methods and technical of my invention and of equal importance, which complement the Procedures of the invention:

1-Proceso to provide to the packings transformed into packings of three-dimensional geometric body, of one or more necks, tops or projecting peaks, as dispenser and it opens easily (easy-open).

[0197] 1.1) To seal and to cut to (cut) with a multiform set of two clamps (FIG22,23,24) [one of sealed and cut (8) and other one of impact (6) or normal clamp: that line up in parallel and that, on having been driven, are placed on plane by both faces of the initial packing], one or more of the parts that we want or of the transverse or longitudinal part of the part of above (also it is possible to realize in the lower part or in any of the sides that it could have the initial packing and adding the sides that wanted) of the initial packing, in which it can be caught to squash two or three of the contiguous sides if it is a question of an initial packing of four sides and of square or rectangular form, or also but of more contiguous sides, if it is a question of an initial packing of irregular form in which there are more than four sides / apexes.

[0198] They can become sealed and cuts of multiple and varied forms and combinations between them, of different types of lines: oblique (FIG22/23), rectilinear, curved, curvilinear, elliptical, diagonal, sinuous, of saw, etc.

[0199] Also there can be circular letters and of the size that loves, taking place with it: an orifice that can serve like a handle in / where it is possible to hang to the packing already transformed into packing of three-dimensional geometric body.

[0200] This way this way, depending on the parts that previously have been cut (sealed and cut) in the initial packing: packings will be obtained with multiple and varied forms of very original and attractive irregular polyhedrons, since they can simulate any type or object: due to the delimitation or seccionamiento of the initial packing, with welding lines perimetral (1) of the silhouette of the letters or objects.

[0201] Next, we explain themselves with examples, types and forms of packing: Those who express themselves in the drawings or the figures 25/26/27/28/29/30/31/32/33; or others with the form of a letter as for example that of one <M>, <B>, <H>; or also forms that simulate objects as for example that of a Crown with two or more apexes / tops that stand out up, a Glove of baseball, Oven glove, a teapot, the Chimneys of a Steamship, of a Bottle with its neck, Vase, of a Crocodile, a Yacht to engine, a sail, a T-shirt of dressing with its neck, of Comb for the hair with its spikes, of Trident, of Castle with its battlements, in a Cup in its handle, of magic Lamp, a toilet, of back fin of a Fish, of head of Hen or of any other animal, in the form of the Statue of the Freedom, etc.

- these sets of two clamps (8,6) parallel bars multiform (not of the only rectilinear one in horizontal and cross street of the only direction) of cut of the initial packing for its two faces: they can have form or be composed by one or more rectilinear different joined between themselves, in whom each one of those who existed, they are ready in different degrees of inclination or in different directions. Namely that fixed or joined to one of the ends of a set of two clamps rectilinear multiform (6,8) or in the degrees of inclination that wanted: they can join or be fixed another set of two clamps rectilinear multiform (6,8) or in the degrees of inclination that loves.

[0202] Being able to repeat, this way, this itself (the one that they are adding to themselves or there adding all the sets of two clamps (multiform) 6,8 and multidirectional love) successively all the times wanted and with multiple possible combinations, since every set of two clamps multiform (6,8) they can be so much rectilinear, curved, elliptical, curvilinear, oblique diagonal, sinuous, of tops of saw, sinuous, undulating, etc.

- these sectional parts of an irregular way with clamps multiform (6,8) the applied ones to the initial packing, are going to affect or help to the final result of the packing of three-dimensional geometric body which it has been about to obtain, with the following qualities or characteristics:
- they can make and personalize multitude of different and varied forms of packings of volumetric three-dimensional geometric body or of forms polihedral irregular. To this type of packing, preferably only they are going to originate it, seal or to seal and to cut two of the flaps or triangles of the lower part or of the lateral side of the lower part of the initial packing.

[0203] These new, multiple and varied packings designs, they suppose an important advantage in the sector of the Marketing, since it is possible to relate or to identify to a concrete product and a certain trade Mark: with a concrete form (original, practical and attractive) of the only / exclusive design of a packing with form of volumetric three-dimensional geometric body.

- in the part of above (one or more of the transverse sides of more above and, also, one or more of the contiguous sides to / to the cross street / is) of the already transformed packing, there are created or arise projecting tops / peaks / necks that can serve one or more of these: of peak of neek dispenser, where they will pass or / and will go out towards out of the packing, the content [fluid (liquid / doughy or / and air / gas) and with solid or without them] packed in its interior.

  - It awards major consistency and rigidity to the packing already transformed to form of volumet-

ric three-dimensional geometric body.

- it is possible to dosify the content packed inside these packings, in a much more precise, clean and comfortable way due to its volumetry and, also, to the tops peak vertexes that have been created standing out towards out, that they facilitate making use with them: the content packed in its interior, being of big utility for such foodstuff as for example: sauces, jams, honey, sirope, cleaning product, perfumes, etc.
- it is possible to add by means of an opening way or it opens easily: a small crack applied partly of the end of the rough edge or line of welding perimetral (1): of any of the peaks, tops or apexes that they could have created in any of those of these packings with form of three-dimensional geometric body or of form of irregular polyhedron. This way, on having torn for this crack, there will be facilitated the dosage of the content packed inside the packing. Also, it is possible to place / install by means of a dispenser way as for example: a stopper, valve, mouthpiece or strip of aluminum.

[0204] In any of the machines transformed in 3D of the invention and after 1ªfase and previous to 2fase and 3fase, there can be realized this process of adding dispensers by means of the cutting or the sealed one and of the parts that should love of the part of above of the initial packing. It will be realized in this case, therefore, Exactly later once the initial packing has been seized or / and blocked in the position that loves, as for example knocked down or vertically, for one or more clamps of subjection (3).

[0205] Also it is possible to realize this process, although in a more complicated way: after the initial packing has been already transformed into a packing with form of volumetric three-dimensional geometric body of three or more faces, by means of the same type of clamps (6,8): one of sealed or sealed and cut and a clamp / body of mobile impact), in that these that line up will beat simultaneously and for both faces, the part that it is about of the packing, this way to seal or to seal and to cut the select part.

[0206] For this motive, it is possible to use the explained in the process of 1st phase of the machine transformer the second (b1) and third (b2), as one of the ways to do these irregular cuttings or sealed and cut of these parts of above of the initial packing, therefor before this begins the first phase of the machine first (a), fourth (c) and fifth (d), the initial packings can be taken hold and blocked by one or more clamps of subjection (3) or one or more sets of two or more clamps (3) as it is described in the 1stPhase (b1,b2)

- practical explanation with an example represented with the following drawings:
  The packing of the figure n°28, it has been produced or created by the seccionamiento (by means of a set of two multiform clamps that in this case is the rectilinear one in diagonal) of the part of above (or of one of the parts) of the initial packing, as it expresses itself in the drawing of the figure n°23 and n°24.

[0207] This way, a packing is created polihedral irregularl 3D with form of a house with a three waters roof, in which it is appreciated above: a face with a form of triangle and , in turn, this face can split into three mini-faces with form of a triangle.

[0208] Also, in the same part of more above and towards three quarters of the same face, a peak stands out up - punta-vertice with an inclination of some 45 degrees, corresponding or coinciding just with this certain point: because exactly it is where the set of two clamps multiform (6,8) in diagonal, they have initiated the sealed and cut, of the side side in horizontal of the part of more above of the initial packing. And in that, also, in the part of the left of the already transformed packing, there is a peak, top or apex standing out towards the left, which coincides or corresponds just in this certain point: because exactly it is where the set of two clamps multiform (6,8) in diagonal, they have initiated the sealed and cut , of the lateral side in vertical of the part of the left of the initial packing.

[0209] 1.2) Stopping without causing, sealing or sealing and cutting one or two of the flaps or triangles of an initial packing of at least two faces, so that this way there arise one or two necks dispensers or projecting tops - peaks that stand out in the part of above of the packing already transformed in the shape of three-dimensional geometric body: towards the left or / and towards the right.

[0210] Practical explanation with two examples, in that an initial packing has been used with form of square or of rectangle of two faces and four sides (fig3, 4):

- in case we want to obtain a packing transformed, with the only neck dispenser in the part of above and next to the left or next to the right: two flaps or triangles are going to originate in the lateral side of the part of further down from the initial packing. And in the lateral side of the part of more above of this initial packing, they are going to originate, seal or to seal and to cut only a flaps or triangle, being able to be so much that of the left like that of the right.

[0211] Therefore, we will obtain a packing transformed with form of three-dimensional geometric body, as it expresses itself in the drawing or it represents n° 40.

[0212] In case we want to obtain a packing trasformed with two necks dispensers in the part of above: two flaps or triangles are going to originate in the lateral side of the most lower part of the initial packing. And in the lateral side of the part of any more above of this initial packing, they are not going to originate, seal or to seal and to cut any flaps or triangle, therefore it will remain how it is.

[0213] Therefore, we will obtain a packing transformed

with form of three-dimensional geometric body, as it expresses itself in the drawing it represents n° 30.

[0214] 1.3) Combining two methods or processes of the paragraphs [1.1 and 1.2].

[0215] In this case, once the initial packing has already transformed in a packing with form of irregular polyhedron with one or more tops, apexes or necks dispensers: to this one packing in / grasp face / expert of the part of more above or of the lateral sides perimetrals of the part of more above: it is possible to cause, to seal or to seal and to cut one or two flaps or triangles (one to the part of the left or/and other one to the part of the left).

[0216] This way, therefore, we will obtain a packing transformed with form of three-dimensional geometric body, in which there will be modified moreover the form of irregular polyhedron that firstly had been obtained, for what one can still obtain irregular polihedrical forms different and original, producing with it the one that could appear humps or mini-faces with form for example of triangle: equilateral, rectangle, scalene, isosceles, obtuse-angled.

[0217] 2 - The procedure and processes explained in the previous paragraph, in which there are cut the parts that one wants of the initial packing, also it is possible to do to equal method / mechanism / functioning: connecting or replacing straight this type of multiform and multidirectional clamps, to the sets of two clamps of the Machines of filling or packed in vertical, that are those who make the initial packing of at least two faces.

[0218] 2A - Functioning of the multiform clamps and the rectilinear clamps in horizontal, in any of the vertical / horizontal Machines of filling that make initial packings of at least two faces:

[0219] For a good use as for effectiveness and efficacy, there are going to coexist two types different from sets of two parallel clamps that they seal and cut for both two faces of the initial packing: a set of two rectilinear clamps in horizontal position and another set of two multiform clamps, an above or next to other one, without they being in the way, this way to be able to gesticulate separately since it will be necessary that both get together simultaneously and one being alternated with other one, at the time of having been to seal and cut to the initial packing, for both faces.

[0220] In every cycle of manufacture, these two types different from sets of clamps (the multiform one and the rectilinear one in horizontal), they interact of the following way:

[0221] First: there is driven the set of two rectilinear clamps in horizontal position of sealed and cutt, which is the normal one used in any of the vertical / horizontal Machines of filling, available on the market of nowadays.

[0222] Second: there is driven, followed by the previous one, the set of two multiform clamps of sealed and cutt -already described in the previous paragraph with the n° 1-, in which these will never have the form of only one rectilinear in horizontal that seals and cuts all the breadth of the initial packing.

[0223] Third: there is driven, again, the set of two rectilinear clamps in horizontal position, as in the First step.

[0224] Fourth: there is driven, again, the set of two multiform and multidirectional clamps, as in the Second step.

[0225] This way, initial packings of irregular forms are obtained, that is to say, without these having a square form not rectangular.

[0226] Therefore, by means of this procedure in which there are alternated these two types of Sets of two parallel clamps (the rectilinear one in horizontal and other one of multiform), we obtain at the same time and in the same vertical / horizontal Machine of filling that makes initial packings of at least two faces, the following types of initial packings:

[0227] 2A.1: The same initial packing is obtained twice by copy in every cycle of manufacture of alternation of two types of sets of clamps: because one of the sets is two clamps the rectilinear one in horizontal position, and other of the sets of two clamps that is multiform is the rectilinear one in diagonal position with the length and with the degrees of inclination that wanted.

[0228] In this way two identical packings are obtained, in every cycle, in that these at the moment of being made: they are ready or are located one opposite other, but being these looking or being together exactly for the lateral side of the initial packing that is the rectilinear one in diagonal, therefore one of the initial packings, it is looking at the opposite direction.

[0229] This way, initial packings will be making, successively, with the same form of initial packing and that, in this case, is similar to the form of figure of a Sail of windsurfing.

[0230] 2A.2: If for the opposite, we use a set of two multiform parallel clamps in which these do not belong to the only rectilinear one, but yes they are or they have more than two lines or sides (these can be of any form, length, width, in any inclination degree, and in that also these can combine randomly between them, in a multiple and varied ways that wanted), it is obtained in every cycle of alternation of two types of sets of clamps: two irregular initial packings neither (squares nor rectangles) that are or have different form one with with regard to other, in which according to the case: one or more of their lateral sides will have the same form and will be in the same place.

[0231] Next, there are described by examples two models of different initial packings that can be obtained by every set of multiform clamps of two or more sides, which it is going to be used along with another set of clamps of only one rectilinear in horizontal position.

[0232] In every cycle of these two sets of clamps, there will be always obtained two different initial packings, which in turn these once of originating, to be sealed or to be sealed and two flaps are cut in every horizontal lateral side of the part of under every initial packing: each of these will transform in a different packing with form of three-dimensional geometric body.

[0233] Therefore, every couple of these different initial

packings as also the couple of different packings already transformed in 3D: I them have named one the positive and other the negative, or but also the <ON> and the <OFF>: 2A.2.1)

[0234] Set of multiform clamp: it consists of a rectilinear side arranged in horizontal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) and in the length that wanted, and on the other hand that is the rectilinear one in diagonal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.), next or joined to any of the ends of the previous side that is the rectilinear one in horizontal:

- Initial packing OFF: the lateral side that initial packing is placed in the lower part that it goes to serve as support base for the future packing transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal position and with the length that wanted.

[0235] The lateral side that can be of the left or that of the right: it is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in vertical position and with the length that wanted, and other of the lateral sides that can be that of the left or that of the right: it is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in vertical position but of less size than that of another lateral side.

[0236] And in the lateral sides of the part of above and of the center of the initial packing: there are two rectilinear lateral sides (they can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) joined in a piece, in that one is ready in diagonal and pointing up and going out with the length and the degrees of inclination that wanted, and another lateral side is ready in horizontal position, with the length that wanted.

[0237] Finally, to this initial packing only they are going to originate sealing or sealing and cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

- initial packing ON: the lateral side that initial packing is placed in the lower part that it goes to serve as support base for the future packing transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal position and with the length that wanted.

[0238] The lateral side that can be that of the left or that of the right: it is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in vertical position and with the length that wanted, and other of the lateral sides that can be that of the left or that of the right: it is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in vertical position but of less size than that of another lateral side.

[0239] And in the lateral sides of the part of above and of the center of the initial packing: there are two rectilinear lateral sides (they can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) joined in a piece, in that one is ready in horizontal with the length that wanted, and another lateral side is ready in diagonal and pointing down and it was doing out with the length and the degrees of inclination that wanted.

[0240] Finally, to this initial packing only they are going to originate seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

2A.2.2a)

[0241] Set of multiform clamp: it consists of two rectilinear sides (one in the side of the left and other in the side of the right) arranged in position of diagonal (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.), looking up and inwards with the length and the degrees of inclination that wanted; and on the lateral side in the part of above and in the center arranged in horizontal position and with the length that wanted, whenever it is allowed that it has joined to the ends of its left and right, two lateral sides in diagonal.

- initial packing OFF: it has a form similar to the figure of a Head of one Cat with its two sharp-pointed ears looking up, in that the lateral side that is placed in the lower part of the initial packing and that goes to serve as support base when this initial packing is transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal position and with the length that wanted.

[0242] Every lateral side of the part of the left and in the middle of the right: it is the rectilinear one arranged in vertical position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) with the length that wanted.

[0243] And in the lateral sides of the part of above and of the center of the initial packing: two lateral sides arranged in diagonal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) to the left and right looking down and inwards, in that its ends of the lower part are joined in one piece: lateral side that is the rectilinear one arranged in horizontal position with the length that wanted, whenever it is allowed that it has joined to the ends of its sides, two lateral sides in diagonal. Finally, to this initial packing only they are going

to originate seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

- Initial packing ON: it has a form similar to that of a Trapeze, in which the lateral side that is placed in the part of further down of the initial packing and that goes to serve of support base for the future packing transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal position and with the length that wanted.

[0244] As for the lateral sides of the part of the left and of the right, there can be two possible options:

a) with two only lateral sides, in that each of these lateral sides (that of the left and of the right), are the rectilinear one arranged in diagonal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; oblique; of saw; etc.) with the length and the degrees of inclination that wanted, in that these are looking up and inwards.
b) with four lateral sides (two to the left and two to the right), in that the two first ones and on both sides: there is a lateral side that is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in vertical position and with the length that wanted, and that fixed and joined to the top end of each of these lateral sides in vertical position: there is a lateral side that is the rectilinear one arranged in diagonal position (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) with the length and the degrees of inclination that wanted, and in that these are looking down and inwards.

[0245] And in the lateral side of the part of above and of the center of the initial packing: a rectilinear lateral side (they can be also curvilinear; elliptical; sinuous; semicylindrical; saw tops; oblique; etc.) arranged in horizontal position with the length that wanted, whenever it is allowed that it has joined to the ends of its sides, two lateral sides in diagonal.
[0246] Finally, to this initial packing only they are going to originate him, seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

2A.2.2b)

[0247] Set of multiform clamp: it consists of two rectilinear sides (one in the side of the left and other in the side of the right) arranged in position of diagonal (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) and aiming at both up and inwards with the length and the degrees of inclination that should love, but in that the ends of the part of above of these two lateral sides: they will always coincide after these are close or to join, forming a form of figure as that of the letter <V> but turned.
[0248] For what in the part of above and for the center: there is no lateral side.

- Initial packing OFF: it has a form similar to the figure of a triangle, in which the lateral side that is placed in the part of further down of the initial packing and that goes to serve as support base for the future packing transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal position and with the length that wanted.

[0249] As for the lateral sides of the part of the left and of the right, there can be two$ possible options:

a) with two only lateral sides, in that each of these lateral side$s (that of the left and of the right), are the rectilinear one arranged in diagonal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; oblique; of saw; etc.) looking up and inwards, with the length and the degrees of inclination that wanted: but whenever there remain the top ends of both, close or together between themselves.
For what in the part of above and for the center: there is no lateral side any more.
b) with four lateral sides (two to the left and two to the right), in that the two first ones and on both sides: it is a lateral side that is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; oblique; of saw; etc.) arranged in vertical position and with the length that wanted, and next of each one of previous, fixed and joined to the top end of each of these lateral sides in vertical position: there is a lateral side that is the rectilinear one arranged in diagonal position (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) looking down and inwards and with the length and the degrees of inclination that wanted, but whenever there remain the top ends of both, joined between themselves.

[0250] For what in the part of above and for the center: there is no lateral side any more.
[0251] Finally, to this initial packing only they are going to originate him, seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

- initial packing ON: it has a form similar to the figure of a Royal Crown of two tops looking up, but in turn

also with a peak that is looking down, in that the lateral side that is placed in the lower part of the initial packing and that goes to serve as support base when this initial packing is transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; oblique; etc.) arranged in horizontal and with the length that wanted.

[0252] Every lateral side of the part of the left and on behalf of the right: it is the rectilinear one arranged in vertical position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) with the length that wanted.

[0253] And in the lateral sides of the part of above and of the center of the initial packing: two lateral sides arranged in diagonal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) to the left and right looking down and inwards, in that its ends of the lower part are joined or are joined, forming this way a peak looking down.

[0254] Finally, to this initial packing only they are going to originate it seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing. 2A.2.3) Set of multiform clamp: it can have the form of figure similar to that of a capital letter <M>, and also it can have the form similar to the silhouette of the part of above of the representation of the icon or image of a Heart.

[0255] It consists first of almost straight elliptical rectilinear or curvilinear two or with few degrees of curvature (one in the side of the left and other in the side of the right) that are equal and are also ready in diagonal with the length and the degrees of curvature and inclination that wanted in direction towards above and inwards.

[0256] Continued and joined to the top end of the previous sides and also both to the part of the left and to the part of the right and being this equal: a side with form of semicircle or elliptical semicircle arranged in horizontal and with the degrees of curvature and the length that wanted.

[0257] And finally, followed and joined to the previous two semicylindrical sides and to the part of the left and to the part of the right, and being this equal: a rectilinear side or curvilinear elliptical almost straight or with few degrees of curvature, which are ready in diagonal with the length and the degrees of curvature and inclination that wanted and looking in direction down and inwards, in that also the low ends of both two sides: they join or join forming, this way, a peak (it can have a completion in top or also in rounding or in curvature) looking in direction down. - Initial packing OFF: it has a form similar to the figure of a Royal Crown of three tops looking up.

[0258] In that the lateral side that is placed in the lower part of the initial packing and that later is going to be or is going to serve as support base when this initial packing is transformed in the shape of three-dimensional geometric body: it is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) in horizontal and with the length that wanted.

[0259] Every lateral side of the part of the left and on behalf of the right: it is the rectilinear one arranged in vertical position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) with the length that wanted.

[0260] And in the lateral sides of the part of above and of the center of the initial packing:

[0261] First: continued and joined to the top end of each of the previous lateral sides and also both to the part of the left and to the part of the right and being this equal: a side with form of semicircle or elliptical semicircle, arranged in horizontal and looking down with the degrees of curvature and the length that wanted.

[0262] Second: continued and joined to the end of inside each of the previous two elliptical semicylindrical sides or not, and to the part of the left and to the part of the right, and being this equal: a rectilinear side or curvilinear elliptical almost straight or with few degrees of curvature, which are ready in diagonal with the length and the degrees of curvature and inclination that wanted, and looking in direction down and inwards, in that also the low ends of both two sides: they join or join forming, this way, a peak (it can end a completion in top or also in rounding or in curvature) looking in direction down.

[0263] Finally, to this initial packing only they are going to originate it, seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing. - Initial packing ON: it can have the form of figure similar to that of a capital letter <M>, and also it can have the form of figure similar to that of the silhouette of the icon of a Heart.

[0264] In that the lateral side that is placed in the lower part of the initial packing and that goes to serve as support base when this initial packing is transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal and with the length that wanted.

[0265] As for the lateral sides of the part of the left and of the right, there can be two possible options:

a) Every lateral side of the part of the left and of the right and being this equal, they can be of two types: the rectilinear one arranged in vertical position, or also but an almost straight curvilinear elliptical one or with few degrees of curvature and with the length and the degrees of curvature and inclination that wanted, in that also this one is looking in a direction up and inwards how arranged in diagonal.

b) with four lateral sides (two to the left and two to the right), in that the two first ones and on both sides: there is a lateral side that is the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; sinuous; of saw; oblique; etc.) arranged in vertical posi-

tion and with the length that wanted, and that fixed and joined to the top end of each of these lateral sides in vertical position: there is a lateral side that is the almost straight elliptical rectilinear or curvilinear one or with few curvature degrees and looking in direction up and inwards, in that also they are ready diagonally with the length and the degrees of curvature and inclination that wanted.

[0266] And in the lateral sides of the part of above and of the center of the initial packing:

[0267] First: continued and joined to the top end of each of the previous sides and, also, both to the part of the left and to the part of the right and being this equal: a lateral side or line of welding (5) with form of semicircle or elliptical semicircle (with the degrees of curvature and the length that wanted) arranged in horizontal and convex.

[0268] Second: continued and joined to the end of inside each of the previous two elliptical semicylindrical sides or not, and to the part of the left and to the part of the right, and being this equal: a rectilinear side or curvilinear elliptical almost straight or with few degrees of curvature, which are ready in diagonal with the length and the degrees of curvature and inclination that wanted, and with the direction down and inwards, in that also the low ends of both two sides: they join or join forming, this way, a peak (it can have a completion in top or also in rounding or in curvature) looking inat direction down.

[0269] Finally, to this initial packing only they are going to originate , seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing. Also, after these two flaps or triangles originate only, it is going to produce to the lateral sides (of the part of the left and that of the right) of the packing already transformed with form of three-dimensional geometric body: an effect since of be opening in diagonal going out, therefore in the concrete case of the packing that has a form similar to the silhouette of a Heart, it is going to cause more over that this packing has a form more similar to that of a Heart, to the being narrower the part of further down of this packing that the part of more above.

2A.2.4)

[0270] Set of multiform clamp: it consists of two equal rectilinear sides (one in the side of the left and other in the side of the right in the opposite direction) arranged in horizontal position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.); and next and joined to the ends of the two previous sides: two sides that are two rectilinear ones (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) in diagonal be equal (one in the side of the left and other in the side of the right in the opposite direction with the length that one wants) that are ready in diagonal with some 60 degrees of inclination approximately, in that these are looking in direction up and it was doing out; and finally, joined and next of two ends of the two previous sides: a side that is the elliptical curvilinear one (it can be also curvilinear; of saw; semicylindrical; sinuous; of saw; oblique; etc.) arranged in horizontal and in position of convex (looking at its center in direction up).

- Initial packing OFF: it has a form similar to the silhouette of the sports Shield or of a advertisement poster, in that the lateral side that is placed in the lower part of the initial packing and that goes to serve as support base when this initial packing is transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; semicylindrical; of saw, sinuous; oblique; etc.) arranged in horizontal position and with the length that wanted.

[0271] Every lateral side of the part of the left and on behalf of the right: it is the rectilinear one arranged in vertical position (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) with the length that wanted.

[0272] And in the lateral sides of the part of above and of the center of the initial packing: two sides / lines of welding (5) equal rectilinear ones (one in the side of the left and other in the side of the right in the opposite direction) arranged in horizontal position and of the length that wanted (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.); and next and joined to the ends of the two previous sides / lines of welding (5): two lateral sides (lines of welding) (5) that are two equal rectilinear ones in diagonal and of the length that wanted (one in the side of the left and other in the side of the right in the opposite direction with the length that wanted), that are ready in diagonal with some 60 degrees of inclination approximately, in that these are looking in direction up and going out; and finally, next and joined to the ends of the two previous sides or lines of welding (5): a lateral side / line of welding (5) that is the elliptical curvilinear one of the length that wanted, arranged in horizontal and in position of convex (looking at its center in direction up).

[0273] Finally, to this initial packing only they are going to originate, seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

- Initial packing ON: it has a similar form at the head of Bull or of any mammal with its two horns of flagstaff, in which the lateral side that is placed in the part of further down of the initial packing and that goes to serve as support base for the future packing transformed in the shape of three-dimensional geometric body: it is going to be the rectilinear one (it can be also curvilinear; elliptical; oblique; semicylindrical; sinuous; of saw; etc.) arranged in horizontal

position and with the length that wanted.

[0274] As for the lateral sides of the part of the left and of the right, there can be two possible options:

a) with two only lateral sides, in that each of these lateral sides (that of the left and of the right), are the rectilinear one arranged in vertical position (it can be also curvilinear; elliptical; sinuous; semicylindrical; oblique; of saw; etc.) with the length and the degrees of inclination that wanted, in that these are looking up
b) the initial packing has been already transformed into a form 3D: with two only lateral sides, in that each of these lateral sides (that of the left and of the right), are the rectilinear one arranged in position of diagonal (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) with the length and the degrees of inclination that wanted, in that these are
looking up and was going out.

[0275] And in the lateral side of the part of above and of the center of the initial packing: two welding sides / lines (5) equal rectilinear ones (one in the side of the left and other in the side of the right in the opposite direction) arranged in horizontal position and of the length that wanted (it can be also curvilinear; elliptical; sinuous; semicylindrical; of saw; oblique; etc.) ; and next and joined to the ends of the two previous sides / lines of welding (5): two lateral sides / lines of welding (5) that are two equal rectilinear ones in diagonal and of the length that wanted (one in the side of the left and other in the side of the right in the opposite direction with the length that wanted), that are ready in diagonal with some 60 degrees of inclination approximately, in that these are looking in direction down and it was doing out; and finally, next and joined to the ends of the two previous sides or lines of welding (5): a lateral side street / line of welding (5) that is the elliptical curvilinear one of the length that wanted, arranged in horizontal and in concave position (looking at its center in direction down).

[0276] Finally, to this initial packing only they are going to originate him, seal or to seal and to cut two flaps or triangles: in the lateral side of the part of further down that is going to serve as base of support of the already transformed packing.

2B- Functioning using a Set of two plaque parallel and twin clamps , in any of the vertical Machines / horizontal of filling that there make initial packings of at least two faces:

[0277] They go to use only a set of two twin and parallel clamps: one of sealed and cut and normal other one or of impact, or but also the two of sealed and cutt. Each of these clamps are identical both in the form and in the size, but with the difference that one is the same image but turned or reflected, as when one himself turns out to be reflected in a mirror.

[0278] These two twin clamps, therefore, are going to be wider or with more base surface of support, because in them they are going to be drawn or diecasting as a mold: the designed one of the form completes that you want, of one or more (2; 3; 4; 5; 6; 7; 8; 9; 10; etc.) initial packings and that also these initial packings can be ready in only a line or levels, or in two, three, four or more lines or levels one under other, this way to multiply exponentially the production of these initial packings, which further on are going to be transformed in the shape of three-dimensional geometric body, by any of the Machines of transformation of initial packings in packings in 3D of the invention.

[0279] In any case, before the two twins plaque clamps close or join: there have to be previously two equal and parallel plates of plastic or of any other flexible material as for example the plastic and aluminum, since these are with that type will prepare the initial packing of flexible material film in bobbin: this way to seal and to cut the parts that wanted of these two flexible plaques or plates. The plaques can have different widths depending this on what could admit every type of Machine in vertical of filling and manufacture of initial packings of at least two faces.

[0280] Therefore, before these two plaque clamps close: have filled inside between two plates flown (liquid / viscous or/and air / gas) and with solid / granulated / powder or without them. For what, previously, by means of a dispenser and of system of sealed: they are going to weld by means of a welding system, the horizontal lateral side of the part of further down and also two vertical lateral sides of the part of the left and of the part of the right, this way to create a container suspend but opened by the top lateral side, where to be able to fill the content which one wants to drink. - This Set of two twin and parallel plaque clamps, in turn, they can exercise also the clamps function ejectors (20) who explains in the following paragraph with the number three.

[0281] These two plaque clamps, therefore, previously to that these close or join completely: they are going to stop to half of way and at the distance that wanted, for this way regulate - once two plates have already formed the receptacle suspend and that, also, it has already dosed or filled inside the content which one wants to drink - the quantity that let's want that there is of fluid (liquid / viscous or/and air / gas) and with solid / granulated / powder or without them, packed inside each of the initial packings that are going to be made, immediately later.

- This way, there is obtained finally the form that let's want of one or more pack initials, in that also one or more of these: there can be different models, or also be all of the same model of initial packing.

- Also, it is possible to use or to use in each of two plaque clamps are used in parallel: the same skill of creation of designs of that two different initial packings make one opposite other, which I name: a Pos-

itive initial packing or the <ON>, and other, a Negative initial packing or the <OFF>.

[0282] This way, initial packings of irregular forms are obtained, that is to say, without these having a square form not rectangular.

[0283] Therefore, by means of this procedure in which two Sets of two clamps are used it irons twin and parallel: they go to be able to make simultaneously one or many other initial packings of all the possible different forms that wanted, as there have been already described and explained some of these initial packings in the previous paragraph with the numerical denomination:

2A.1; 2A.2.1; 2A.2.2a; 2A.2.2b; 2A.2.3; 2A.2.4.

3 - Ejector Clamp (20FIG34):

[0284] A process or method to control the exact fluid quantity (liquid/doughy or/and air/gas) that we want that it is packed inside the initial packing. Therefore, it will be regulated or it will control the size of the bundle of initial packing with regard to the quantity of fluid (liquid / doughy or/and air / gas) that we want that it is packed inside the initial packing of at least two faces.

- This is possible, on having installed for below and along with the clamps or the clamp of sealed or sealed and cutt: a ejector clamp (20) arranged in horizontal position and standing out slightly more with regard to the sealed (8) or sealed and cutt clamp (8), this way to be able to exercise a crushing of a controlled and adjustable way (to the exact measurement that it is about to predispose) on two faces of out of the initial packing of at least two faces.

[0285] This way, it will be expelled up and also, initally, from the interior of the packed (that is still not sealed on the part of above) the quantity wanted of fluid (liquid / doughy or/and air / gas).

[0286] In turn and at the same time, also we expel completely or in its majority, any bubble of residual air that could stay or be inside the initial packing of at least two faces.

- Therefore, this method has two functions: to calculate the volumetry that wanted, that has the initial packing and, also, reducing or removing of the interior of the initial packing the air bubbles.

[0287] **4 -** The same system of these clamps standing out of the clamps of sealed or sealed and cut explained in the previous paragraph, can be used or applied also being these ejector clamps (20) below and along with the clamps of sealed (8) or sealed and cutt (8) of the sealed one or sealed and cut of the flaps or triangles, so that this way - although it happens already in a natural way - it is expelled, more if it fits, the fluid quantity (liquid / doughy or/and air / gas) that could remain caught inside the flaps or triangle (before this one is sealed or sealed and cut) between its faces.

[0288] **5 -** To apply the second light welding by means of the filling Machines in vertical / horizontal that make packings of two faces, and that are available on the market of nowadays.

[0289] It is possible to realize, although it is optional, the second more light welding near or under any of the lines of welding perimetrales (1), which they serve to seal the content packed inside the initial packings.

[0290] This second light welding is done by few heat transmitted this way to alter less the plastic, so that this way and later, it is facilitated and helps to that the line of welding (2) of the sealed one or sealed and cut of the flaps or triangles: it is realized by major resistance to the break exactly to half of the flaps or triangle or to half of the line of welding (2) where a crossing takes place, between two lines of welding (1, 2).

[0291] Therefore, if, for example, we use plastic of little thermo-weldiness uses, and plastic of little gauges (30, 40, 50, 60 gauges), there might stay a line of welding (1, 2) not so well sealed or welded by this concrete point where it crosses and there joined the line of welding (1) -that had been already carry out- with the line of welding (2) that later will be performed. Therefore, this second light welding contributes a report of piece of slightly warmed up plastic, which later will melt well together with the welding line perimetral (1) when there is realized the line of welding (2) of the sealed one or sealed and cut of the flaps or triangle.

[0292] All this owes: to that after the flaps or triangles originate, they always join or two faces are joined or two contiguous lateral sides of the initial packing of at least two faces, that is to say, join or join the material (plastic; plastic-aluminum; plastic-aluminio-cartboard) with the one that the initial packing is prepared. This second line of light welding, it is possible to realize just for below and very close (to one, two, three millimeters) of the first line of welding (1).

[0293] This new sealed but not cut welding, it is going to provide and guarantee that the welding, which further on is going to be realized on having been sealed and to the flaps be cut, is completely resistant or surer, if it fits, to breaks and possible escapes. This is because, depending on the case, the area can be delicate just where they join or cross: a part of the flaps or triangle with a part of the rough edge of the first welding realized by the vertical machine of filling that makes the initial packing, since a very small part of this line of welding perimetral (1) is going to be welded for 2nd time with the line of perpendicular welding (2) of the sealed one or sealed and cut of the flaps or triangles. For this motive, in this point, if we use a type of plastic of small thermo-weldiness and also of few microns of thickness, but may be this weld is not sealed enough, as because the plastic could have remained somewhat hardened, preventing with it in the second welding this plastic from being able to melt

again well or in a few ideal conditions, therefore an escape might be opened precisely by this zone or concrete point.

- This is settled doing a double welding: one of sealed and cut (1) and other one of only sealed but very light (at low temperature) remaining this way slightly pronounced this welding line. There can be 1 or 2 mm more or less of separation between two welding lines. This light welding is located just below or in the part of the interior or nearer to the central part of the initial packing, and has the peculiarity of being a welding realized at low temperature, but the sufficient thing like so that one could have left glued two plastic ones with the minimum exigible of heat, so that later this light welding melts more and helps to be well welded or sealed - exactly in the middle - the line of perpendicular welding (2) with the welding line perimetral (1).

[0294] For what, the most delicate area to be welded or sealed: it is where just they join and crosses: a small part to half of the lateral side that is in contact or in union with the trunk or the rest of the packing, with another small part of the line of welding (1) that is placed in the lateral sides of the initial packing. This line of light welding, it is possible to apply optionally, along with any of the lines of weldings perimetrales (1) of the initial packing.

[0295] In the case, of which it goes to leave one or more peaks or necks dispensers in a packing already transformed with the form of three-dimensional geometric body, it will be left and the area nearest to the apex , We must not weld from 5 to 10 millimeters, exactly at the end of every neck or peak dispenser, so that this way, it could serve as an orifice dispenser of the content packed inside the packing, once this part of the end that has been left without the 2nd light welding being realized and that also, previously, a groove had been done to him: it is torn precisely by this groove or crack.

6 - Pinching clamp (3, 19 fig68, 69).

[0296] These are going to seal or seal and cut the part that wanted of one or more of the edges that can exist in any of the packings transformed to form of three-dimensional geometric body, by what a rough edge or burr will be created a small flap or hem standing out and with a rectangular form.

[0297] The purpose of this process or skill, it is that of confere to the packing already transformed to form of three-dimensional geometric body: a major consistency and stability, although it is not necessary, since without this application or process, which is optional, the packings are already stable and consistent being supported themselves in vertical standing.

- The purpose of this skill or process, it is that of confering or there provides to any of the wanted packings already transformed into a form of three-dimensional geometric body: a major consistency and stability, although it is not necessary, since without this application or process, which is optional, the packings are already stable and consistent being supported themselves in vertical standing.
- Every set of two pinching clamps (one of impact and other one of sealed and cut) can be ready to perform or to be driven by the movements similar to that of a normal set of two clamps, or but also can realize the movements similar to those of a common tweezer.

[0298] These pinching clamps (19), once they are held and immobilized packing and being this one transformed to the form of three-dimensional geometric body they will pinch or hold between two pinching clamp any of the edges of the packing, for continued to join is two parallel pinching clamp (19), this way to seal or to seal and to cut the part that wanted of the edge and/or of the rough edge that has pinched or caught.

- The pinching clamps set (19) can move or be driven of the following two ways:

[0299] 6.1) Linearly and exactly opposite to the edge, which can be impelled by means of a way like of one or more linear cylinders (9) / of draft (16) or/and of tweezer.

[0300] In this case, there are two possibilities of operation and movements:

[0301] 6.1.1: the set of two pinching clamp (19) that is placed exactly opposite any of the edges, will advance (the distance that wanted) forward striking this way two sides / faces contiguous to the edge. Continued two pinching clamp will close or one will be joined with other one [because each of two pinching clamp (19) are fixed to the guide rod of a linear cylinder of tweezer in which, in turn, to this previous cylinder it is fixed to the guide rod of a linear cylinder (9) or of draft (16)] forming this way the rough edge or small flap that, finally, this one will be sealed or sealed and cut leaving the millimeters that wanted.

[0302] But also, being optional, once two clamps (19) have caught to the small flap or rough edge and before it is sealed or is sealed and this one cuts: two clamps can step backwards, this way to do that the small flap or rough edge stretches, with the only intention, which that of making sure the fact that this one forms better the small flap or rough edge on having been more stuck-up and without any wrinkle or crease.

[0303] 6.1.2: the set of two pinching clamp (19) that is placed aligned exactly aside and to other of the edge, just will advance (the distance that wanted) forward striking this way two sides or faces contiguous to the edge, arising this way the rough edge or small flap, that continued and to the moment these two pinching clamp parallel they will seal or seal and cut this rough edge or small flap leaving the millimeters that wanted. Each one of

these two pinching clamp (19) can be fixed or joined to the rod of a linear cylinder (9), or but also can be fixed or joined to the rod of a linear cylinder of the pinching clamp.

[0304] But also, being optional, once two clamps (19) have caught to the small flap or rough edge and before it is sealed or is sealed and this one cuts: two clamps can step backwards, this way to do that the small flap or rough edge stretches, with the only intention, which that of making sure more if it fits, the fact that this small flap or rough edge forms better on having been more stuck-up and without no wrinkle or crease.

[0305] 6.2) Linearly exactly oppossite to the edge but with a movement similar to that of a tweezer, which can be impelled by means of a way like of one or more linear cylinders (9) / of draft (16) or/and of double rod and doble efect, in that two clamps (19) are joined by a transverse axis placed towards the half, and between clamp (19) and clamp (19) and in the back or more behind of the transverse axis, a cylinder of double rod and effect and also, two cylinder linear (9) arranged in vertical position that impels each of them to one of the two clamps (19). While it advances (the distance wanted) ahead in this way strikes two sides or faces contiguous to the edge: it can be opening, if previously is not already completely opened, so that next, once the two clamps penetrate (19) the edge, to close these completely, causing in this way the rough edge or small flap, that continued and to the moment these two pinching clamp parallel they will seal or seal and cut this rough edge or small flap leaving the millimeters that wanted.

[0306] But also, being optional, once two clamps (19) have caught to the small flap or rough edge and before it is sealed or is sealed and this one cuts: two clamps can step backwards, this way to do that the small flap or rough edge stretches, with the only intention, which that of making sure more, if it is possible, the fact that this one forms better small flap or rough edge on having been more stuck-up and without no wrinkle or crease.

- In every Machine of the invention, can have installed one or more sets of two pinching clamp (19) for each of the edges that could exist or also small flaps or rough edges that want to originate: in every packing already transformed in the shape of three-dimensional geometric body.
- Every set of two clamps (19) can be ready in position vertical, horizontal or in different inclination degrees, and this will depend on of the form that has the transformed packing or of the position in which the edges are.
- As more is the volume of fluid (liquid / doughy or/and air / gas) and the solid / granulated / powder or without them, less will be the small flaps or rough edges that (19) parallel bars can be caused by the set of two pinching clamps.
- Also, optionally, every packing transformed in the shape of three-dimensional geometric body it can be taken hold or/and immobilized - apart from for the clamps of subjection / tweezer (3) - by means of other subjection ways as, for example, fixing clamps, or also but for more subjection / tweezer clamps (3) placed ones exactly in different others as for example in the part or in the faces of more above or further down of the packing with form of volumetric three-dimensional geometric body.
- The initial packing, once it has been already transformed in the shape of three-dimensional geometric body and also whenever in the Machine transformer in packings in 3D of the invention, and if we do not want a pinching clamp set (19) for every edge, this packing can be moved or turned on itself, in this way to place to any of the edges exactly opposite and between the two pinching parallel clamps (19) of a set of clamps (19). This way, we can limit the number of sets of clamps (19) that for every Machine transformers in 3D can exist, therefore there can originate all the edges that existed and that one wants of a packing transformed in 3D: with only one I Play of two pinching clamp (19).

[0307] Therefore, in every Machine transformer in packings in 3D, there can be the number of Sets of two pinching clamp (19) who wanted:

[0308] One, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve or more whenever the packing transformed in 3D had more edges.

[0309] On one hand, all the less sets pinching clamps (19) there is in every Machine transformers in 3D, there diminishes the size or dimensions of the Machine transformers in 3D, but, on the other hand, a major time is used in the production of the packing.

- For every packing transformed in 3D, these small flaps or rectangular rough edges can originate in all the edges wanted or be able to have this packing in 3D, inclusive in the edges that previously a small flap or rectangular rough edge have been already caused like turned out from the sealed one or sealed and cut of the flaps with form of triangle.
- Next, as example of the sealed one or sealed and cut of some of the edges of a packing transformed in the shape of cube or of rectangular prism of six faces and twelve edges:

[0310] In the case, of two edges that are in the face of further down supported on a trap-door or fixed surface, and that also are perpendicular to two edges where they have sealed and cut the flaps, it will be turned to the packing with one roll over in vertical of 180th, so that two edges, previously said, that earlier were in the part of under the packing, now are located in the part of more above of the packing, this way to place to these two edges exactly face and/or between two clamps of a set of two pinching parallel clamps (19).

[0311] Also, since in this case we want to cause a small

flap or rough edge in four vertical edges of the packing and, be side, we arrange of only one set of two pinching clamp (19) placed strategically in the vertical position and to the correct height exactly face and/or between these four vertical edges of the packing in 3D: the first edge will be sealed or sealed and cut and other edges one to one will be sealed or will sealing and will cutting, after 90 degrees is turning the packing successively towards any of its sides.

Examples of integral Solution.

A) Inpowderrial manufacture in plastic type film of ice cubic:

[0312] The new machine of the invention, presented in this memory, will be placed in the second position followed by the machine in vertical of packed of liquids that it will be the one that makes the initial packing of two faces.

[0313] One will obtain, after the application with machine of the new procedure, cubic packing of six faces without flaps, that next by means of a conveyor belt, will be introduce/spend through an autoclave to be sterilized there; after it will be wrapped in the second bundle and, finally, the packaging-wrapped-paletized robots will introduce it in boxes, for its later distribution and trading.

[0314] Spend 1: The packaging Machines in vertical of available liquids in the
market today and related to the world of packed of disposable packings, they will make the initial packings with flexible materials (plastic, aluminum; pasteboard...) film type that they will be coiled in bobbins.

[0315] Spend 2: the Machine of the invention with the new process will give form or will transform to the packing or initial bag in a cubic packing.
We will obtain, therefore, in this case, a cubic packing of plastic of polyethene of six faces, without flaps and with water packed in its interior. Also, it will have a behaviour, the same way efficiently, that that of the traditional ice. They can be made of all the sizes, but especially in case of the cubic plastic ices, they will be made, also, of small dimensions: 20 mm x 20 mm | 25 mm x 25 mm | 30 mm x 30 mm | 50 mm x 50 mm | 70 mm x 70 mm ...

[0316] Spend 3: These new plastic ices will interfere by means of a conveyor belt to the interior of an autoclave: machines of sterilization capable of being adapted to the needs for this new product, since many types of different methods exist: physicist; chemist; thermal; ions; steam...

[0317] This one would turn out to be very easy and he practises of applying, because the content of interior of the packing is water and, also, to that all the faces of this one new cubic packing are smooth without flaps, crease or wrinkles, which undoubtedly, there will allow a finished sterilization and cleaning of the product.

[0318] Spend 4: it will be wrapped to this one, in the second bundle of the type retractable film or not like for example the polypropylene or polyethene, and it is possible to produce by means of a machine way like for example a machine in horizontal of the type flow pack, being able to wrap individually for unit or also to be wrapped each time more in the same film, as for example: of fifty in fifty, hundred in hundred, of two hundred in two hundred, etc.

[0319] This way, it will be guaranteed that this cubic plastic mini-packing with water, is innocuous.

[0320] Spend 5: A machine of packed in horizontal will wrap with a second bundle of retractable plastic, one by one individually, or in group of 50 in 50, of 100 in 100 or the quantity that it is about to predispose as for example of 50 in 50 or of 100 in 100.

[0321] Spend 6: packaging-paletized-wrapped robots will introduce, finally, these cubic packings in boxes and/or palé, for its later distribution.

B) Manufacture of a cubic packing that serves as receptacle for any drink; sauce; oil; cleaning product; perfume; cosmetics ...

[0322] It would happen for the same phases as in the previous assumption but, in this case, without the need to submit to the product to the second bundle and in some of the cases, without the need to have been to apply an autoclave.

C) Installation of Manufacture of packings in 3D, by means of Robots:

[0323] One or more robots will be placed or will be fixed to the next sides of the conveyor belt where they will go along the packings of at least two faces that previously have been made by one of the machines of packed in vertical available on the market of nowadays. This vertical Machine that makes initial packings is placed at the beginning of the production line, just in front of the conveyor belt and being able to be above or to be more displaced backwards.

[0324] Next the robots will be able to execute two functions, with the help of the cameras placed on them that were selecting the product so that it could be taken hold and directed correctly:

[0325] 1- to lead the packings of two faces towards or on the system of a triple set of clamps (fig20) of one of the Machines of the model A or/and B.

[0326] For continued, after having transformed the initial packing into packing of threedimensional geometric body: this one will be dropped on the same conveyor belt, or but also to a receptacle or to introduce straight to a box, this way to pack to the packing route Picking.

2- to lead the packings of at least two faces: towards / on any other one of the Machines transformers of the invention,

[0327] One more robots will deposit the packings just in the position and exact place, so that continued the

machine is driven and, finally, it transforms the initial packing into a packing of three-dimensional geometric body.

[0328] Later this Machine transformer will expel or throw the packing transformed towards a receptacle or box, or but also above / on a conveyor belt, for this way further on the transformed packing could be taken and directed (route Picking) again by the claw of the arm of a Robot: towards a packaging box. Finally, a Robot paletizer that can be four axes: it will store or it will be piling up the boxes with the packings inside, in palets.

Claims

1. Procedure and machine belonging to world of packaging, inpowderrial level to make a new type of container or container fully cubic volumetric (if one or two of the flaps are not sealed or cut) that will not require, although it is worth the process with it of any rigid material having to give consistence to this new type of container, as though, if it happens containers Tetrabrik ®-type-lpl ® Sig ® as they use the cardboard roll marking slotted to be keep cubic containerstable and consistent.

    - This method of transforming in cubic containers the initial packaging or irregular polyhedron or wholly volumetric be performed by different machines and with a difference in processes, but with a same common procedure in all of them, of unit.
    - Containers can be manufactured with cube-shaped figure (hexahedron, rectangular prisms of square or rectangular base) or completely volumetric (irregular polyhedrons having three or more sides).
    - This method and apparatus enables us to manufacture cubic containers, or fully volumetric irregular polyhedron of a very small size.

    They manufacture cubic irregular polihedrons, starting from an initial conteiner elaborated with only plastic film type in bobin. The most reliable manufactured products are: Mini-packs, bags or envelopes of two faces little volumetric with sauce inside, and cubic containers one litre or half-litre with packaged products inside as milk, purees, sauces or drinks.
    Also, other substances or ingredients are packaged oils, colognes, perfumes, cosmetics, liquid soap, chemicals / hardware, objects...

    - To achieve this, taking or starting from a container or sealed bag (two or more welds) with liquid or air (gas) inside, previously, will require that the liquid packaging machines already installed vertically on the market and used in the packaging world packaging, manufacture first initial packaging such little volume, which usually tends to have two sides, but also, in some cases, have some more but secondary, Stabilo Pack ® type.
    - It is, therefore, to transform a sealed container or bag made of flexible material film in reel type [plastic, aluminum, paperboard., Monolayer or multilayer / complex or laminate tube] and sealed inside with liquid or ir (gas) in a container cubic shaped or fully volumetric three or more faces.
    - The machine will be part of the invention, together with other inpowderry-related machines, in different possible integral solutions and numerous combinations of different forms of production line.

    This transformation procedure initial containers (sealed liquid substance and/or air or gas inside) in cubic containers, irregular polyhedrons fully volumetric of three or more faces, **characterized in that** it is achieved by means of sealing and cutting or sectioned flaps (triangles) and the whole container has to arise because these flaps are to be used equally distinctive and different processes themselves, unique to this process of invention presented herein.
    This process comprises the following two steps:
    First stage: the flaps originate triangle-shaped, and at the same time conveying the initial container is in a cubic figure shape or completely volumetric.
    This is achieved by introducing the impact clamp (6) on the rigid surface and inside initial sealed container just pushing into the container itself either side, or into lateral perimeter weld lines (2, 3, 4 seals) that in any two-sided sealed container has (fig5, 6, 8, 11, 35).
    The width of the impact clamp (6) must always be less than the width or lateral side wherein is introduced: A greater width of the clamp (6) on the side or lateral of the container, the lower will be the originate flap and vice versa.

    - Depending on the width you can have this impact clamp (6) with respect to the lateral side of sealed initial container, but also the area or the part of each side of initial containerside where the impact clamp (6) and this part of each side come into contact betwin: if the width of the clamp (6) is negligible, such as 3 mm, and if the impact zone in which it contacts, or it contact toward the middle of either side, also arise two flaps, as may the clamp (6) embedded penetrate into the original container, and if instead strikes the left or right of each side and near the tips or vertices only will originate one flap, logically if the clamp (6) is wider enough (6fig8, 11, 18) as to include all the intermediate zones (left-center-right but always less than the width of each side)

of each side, there will originate two flaps.
- In this way, two significant events happen:

A) spontaneous inductively and inflate the initial container (regardless of which cut seal or flap) increasing its volume, as a soufflé, this being due: to which has been reduced or diminished the size of the package of this container or bag, just flaps arise.
B) at the same time, naturally, originate or arise flaps or triangles by / on each direct hit (front, slant, diagonal or different degrees of inclination) and always being to face with the initial container or the container being initial edge over the impact clamp (6), since it would not be if it was above or below either side of the initial container.

The flaps will arise protruding to left and/or right of the sides of the impact clamp (6).
From an initial container of two faces arise maximum four flaps.
According to the size of this flap and depending this of the depth to which let embeds forward impact clamp (6) into this same initial container initial be achieved as follows:
A begger flap a higher swelling or volume transmitted.
Therefor we'll obtain cubic containers (hexaedro regular; rectangular prisma) and/or irregular polyhedron.
The final dimensions of each edge or, if preferred, the actual size of the container to be transformed and shaped in cubic figure: it will prefix in advance the dimensions or actual length that could have each of the sides or four sides of each initial package.
The behavior of each flap with respect to the other, is totally independent, and can be thus originate: one at a time, two by two, three by three or four at a time and each separately or individually transmitted separate the proportional corresponding to the swollen or inflated of the initial package sealed with liquid or / and air inside. Also, it will never be altered in the least, the final result (size or shape), the cubic container would have wanted to obtain.
Second stage: immediately afterwards, they are caused the flaps and the initial container and has taken the form of fully or volumetric cubic figure is sealed and these flaps, sectioning them by side or line of the triangle (flap) which is attached or making contact with the trunk or rest of the container alredy cubic or volumetric.
Severing therefore completely (millimeters can leave either of which resulting weld flash) each flap or triangle.
Can leave one or two without cutting or unsealed, since it is necessary at least to obtain a shaped container or fully volumetric cubic figure, two of them, always, be sealed and cut.
To accomplish this action, we have to use sealing and cut clamps (6fig) than to the end shall incorporate a device or a way source of heat(laser, resistance, friction, rotation, ultrasound) with which it will seal (welding) and cut the flap.This is achieved when this clamp (8) is driven to join or make contact with the lateral end or support surface having a side impact clamp (6), trapping, and, between the two clamps (6,8) , flap or triangle, only two sides and twin.The sealing and cut clamps (8) operated upon are positioned parallel and aligned (right in front) the clamp / as of impact (6) and positioned on the outside of the flaps.
Followed, instantly and simultaneously, the flaps/triangles will be section with a clean cut, but even so will still always be a burr sticking due to welding which requires both parties to come together to be sealed. This burr can leave almost negligible as a millimeter or a few millimeters or you can leave the milimeters you want, in turn, this also serves as a protector for both welding to the cubic container itself of totally volumetric (one or two flaps without sealing).

2. Procedure for transformation from initial containers (sealed with liquid or air/gas inside) cubic containers or irregular polyhedral three or more faces as in claim 1, **characterized by** only develops the first stage.

3. Procedure transformation from initial containers (sealed with liquid or air/gas inside) cubic containers or irregular polyhedral three or more faces as in claim 1, **characterized by** only develops the second stage.

4. Procedure for refinement and improvement of the cubic or rectangular prisms containers manufactured by machines and inpowderry procedures packaging and/or packaging such as Tetra Brik ® type systems, SIG ®, IPI ®..., which is **characterized by** that the sealing, cutting and sectioning the flaps: two, three, four or those that are being originated, instead of sticking to the rest of the container or the trunk thereof with glue or otherwise. Also, you can leave one or two unsealed or cut, as a minimum, to obtain a figure shaped package fully cubic or volumetric, so only, it is necessary that two of them are sealed and cut. -This procedure applies when the flaps or triangles are already (for other procedures such as Tetra Brik ® systems, GIS ®, Ipi ®...) fully formed protruding from the rest / trunk cubic container. -To achieve this action, each flap is used by a set of two clamps: a sealing and cut clamp (8) that at the end device will be fitted with heat source (laser, resistance, friction, rotation, ultrasound...) to be sealed (welded) and cut the plastic flap and another one impactclamp (6) serves only as support base receives the strike of the sealing and cut clamp (8).

This is achieved when this clamp (8) is driven to join or make contact with the lateral end or support surface impact clamp (6), which become trapped, thus, between two clamps (6,8), the two twins pieces of plastic that each flap or triangle contains both two sides. Followed, instantly and simultaneously, the flaps / triangles section with a clean cut, but still will stay always protruding a burr, as they have been welded on both sides of each flap containing plastic, it can be almost imperceptible (1 mm) may be left the milimeter that are wanted, because this burr, in turn, also serves as a shield for the welding line and also for the totally of the new cubic container or the fully volumetric container (one or two flaps without seal).

- At the time of the action of sealing and cutting flaps, the container is stationary and/or completely motionles -It is not necessary any pressure of forc towards force into the same container as the flaps are completely well formed by systems such as Tetra Brik ®, SIG ®, Ipi ®- thus ensuring the uniformity, as appropriate, of each sealing and cutting or sectioning of each flap.
- Once it is already set at the point or exact place and still, are actuated clamps different possible sets: double, triple or quadruple (6.8) to seal and cut these flaps. Therefore, the sets of clamps (6,8) are in each of the only two possible faces each cubic container, has a rectangular prism.
- The different sets of clamps (6,8) connected or not on the same frame, can be arranged or positioned with respect to the initial container, as follows:

Double set of clamps that are placed diagonally or at right angles with respect to the ends, corners or vertices of the initial container and consists of a clamp of impact (6) and a sealing and cutting clamp (8).

Triple set of clamps is placed opposite (front) and parallel to the lateral edge, welding line two sides (top and bottom) of the initial container. Consists of an impact clamp (6) in the center and two sealing and cutting clamps (8) left and right of the clamp (6).

Quadruple clamps set is placed in front (front) and parallel to the lateral edge, welding line two sides (top and bottom) of the initial container. Comprises two mini-impact clamps (6) and joined together in the center, and two sealing and cutting clamps (8) left and right of the clamp (6).

5. Development and improvement process for cubic or rectangular prism containers manufactured by machines and procedures in the packaging industry such as systems like Tetrabrik®, SGI®, ipi®, etc. According to the previous claim, these are **characterised by the fact that** one or two of the flaps, which all packages of this type have, are sealed and cut (fully divided), and the other one or two flaps on the other side or the opposite side which the container itself possesses are bonded (without being sealed or cut) with glue (such as Tetrabrik) to the rest or the body of the package: rectangular prism, irregular polyhedron, cubic, etc.

6. Transformation procedure from initial packaging (sealed with liquid substance or air/gas inside) in cubic or irregular polyhedral containers with three or more faces as per claim 1, which is **characterised by the fact that** in the first stage, in order for the initial container to acquire the form of a cube, it is shaped with self-centring jaws (2) and an holding clamp (3) which crush and press two of the sides (facing each other), and both the upper and lower face of the initial container: this is naturally and spontaneously adapted and attached to the cube space created by these jaws (2,3). At the same time, four flaps or triangles are also created or appear.

7. Transformation procedure from initial packaging (sealed with liquid substance or air/gas inside) in cubic or irregular polyhedral containers with three or more faces as in claims 1,2, which are **characterised by the fact that** prior to the first and second stage, the initial package (fig 1, 2,3,4) is manipulated by two self-centring jaws (2) which drag the initial package to a concentric point, with the intention of both placing the package in an position parallel to the same self-centring jaws (2), and on the other hand, to place the initial container at the precise location for the clamping jaws (3) to grip and immobilize the initial container. After this action, the self-centring jaws (2) return to the initial starting point.

8. according to claim 1, which is **characterised by the fact that** in a step prior to the first and second stage the initial container will be locked and immobilised by clamping jaws (3) by one or two of its faces, and preferably the central area or towards/into the central transverse line of the initial container.

The grip from the middle area or intermediate transverse line of the initial packaging: this is due to, on one hand, space being enabled to work in perfect symmetry on the sets of jaws (6, 8) and, on the other hand, to distribute the liquid inside to the corners or the outside of the initial sealed container or bag, with the sole purpose of ensuring that no wrinkles/folds/bends are formed when the flaps are created.

This is achieved because these clamping jaws (3), in addition to immobilising the initial container, will exert and maintain a constant pressure into or towards the inside of the same initial container. In turn, these clamping jaws (3) provide an adjustable damp-

ing effect, with the intention of this clamping jaw (3) being able to go back to when the initial package is inflated or its volume increases (first stage).

9. as per claim 1, 2, **characterised by the fact that** in an earlier or later stage or during the first and second stage, the initial container is picked up or held and handled by the sides without having to exert a constant pressure towards the interior of the container.

10. at an earlier or later stage or during the first and second stage, the original container is picked up or held and manipulated by the sides but at the same time part of the container is blocked. This part of the container will hold enough liquid and/or air/gas such that a constant pressure is exerted inside the container.

11. at an earlier or later stage or during the first and second stage, the original package is taken or subject to be manipulated or led by a robot arm or mechanical arm.

12. at a stage before the first and second stage, the initial package is led (fig1, 2, 3, 4) by a retractable arm.

13. in the first stage, the jaw/impact body (6) is movable so this impact against/on each side allows the flaps to be created.

14. in the first stage, the jaw/impact body (6) is fixed so that it is only the original container (or its sides) which collide or hit against the jaw/impact body (6) creating the flaps.

15. according to claims 1, 2, 3, 4, 5, which is **characterised by the fact that** there is a double set of jaws (one for impact and one for sealing and cutting) which create, seal and cut the flaps.

16. 15, the double set of jaws (6, 8) is placed with respect to the edge of one of the sides of the initial packaging, just in front of it or opposite it and parallel.

17. 15, the double set of jaws (6,8) is placed with respect to the edge of one of the sides of the initial packaging, just in front of it or opposite it by diagonally (45 degrees, or other degrees of inclination or deviation which are close to 45 degrees) with respect to any initial packaging point, corner or vertex. In this way, these two jaws (6, 8) when used are placed to the left and right of the point to be clamped. As such, the two sides (facing each other) of the triangle form this apex or point and then become a flap, also with the shape of a triangle.

18. according to claims 1,2,3,4,5,17, which are **characterised by the fact that** the initial container is placed moving with respect to jaw/stationary impact body (6) at an angle of 45° or similar.

19. 1, 2, 3, 4, 5, 15, 16, 17, 18, 35, the two jaws (6, 8) are joined on a common frame.

20. 1,2,3,4,5,15,16,17,18, the two jaws (6,8) are not joined on a common frame.

21. 1,2,3,4,5, there is a triple clamp placed with respect to the edge of either side of the initial package, directly in front of or opposite it, in parallel. It consists of a jaw/impact body (6) which will always be in/through the middle and which will be placed at the inside edge of each flap or triangle; and two sealing and cutting jaws (8) to the left and right of the jaw/impact body and aligned it in parallel and which, in turn, are placed on the outside face of each flap or triangle.

22. 1,2,3,4,5,21, the three jaws (6,8) are connected or are attached to the same frame.

23. 1,2,3,4,5,21, the three jaws (6,8) are not connected or are attached to the same frame.

24. 1,2,3,4,5, there is a quadruple clamp set positioned with respect to the edge of either side of the initial package, directly in front of or opposite it, parallel and which is also introduced between the inner faces of the two flaps on one side. It consists of two jaws/impact bodies (6) between which there is a gap, but they are joined by two mini linear cylinders to assist or facilitate, more if possible, which can form a flap without any folds when opened outward or towards the flaps; and two sealing and cutting jaws (8) on the left and right of the clamp/impact body and aligned with it in parallel and which, in turn, is placed on the outside face of each flap or triangle.

25. 1,2,3,4,5,24, the two impact jaws (6) of the quad clamp are linked by one or two rods or bars.

26. 1,2,3,4,5,24, the three jaws (6,8) are connected or attached to the same frame.

27. the three jaws (6,8) are not connected or attached to the same frame.

28. all the sets of jaws and, also, the clamps, which are in symmetry with the packaging in regards to the position of inclination of the axes of a plane, may be oriented with regard to the position taken in different positions: lying horizontally; side horizontal, horizontal at an angle; standing upright at right angles; standing upright at an angle; side vertical.

29. the double, triple or quadruple clamp set, once it has caught the flap in the middle of the jaws (6,8) and then seal and cut it, does not release it, so the con-

tainer can be moved left and right, up and down or rotated on itself to finally to seal and cut these flaps, allowing the container to fall under its own weight.

30. the impact jaws are shaped like cylinders.

31. the impact jaws (6) are shaped like a rectangular prism or just a standard rectangular shape.

32. one or two of the impact jaws (6) are hexahedron-shaped or just a standard square shape.

33. There are impact jaws (6) on one processing machine for cubic or fully volumetric containers, which have different shapes: square, cylindrical, or rectangular.

34. One or two of the impact jaws (6) may have any shape (triangular, irregular polyhedron, etc.) as long as it is made of a rigid and consistent material which can be embedded into the initial container, and which also contains sufficient area on the sides, where the sealing/cutting jaw (8) can be support or fixed.

35. The sealing/cutting jaw (8) has a blade for cutting (sectioning) the flaps once they have been sealed and installed.

36. The sealing and cutting jaw (8) has the shape of a hexahedron or a square.

37. The sealing and cutting jaw (8) has the shape of a rectangular prism or a rectangle.

38. and by the sealing and cutting of flaps, according to previous claims, which are **characterised by the fact that** the sealing and cutting jaw (8) is shaped like a crescent or half-cylinder so that the jaw/impact body (6) can be attached when it is a cylinder.

39. There are sealing and cutting jaws (8) on one processing machine for cubic or fully volumetric containers, which have different shapes: square, semi-cylindrical, or rectangular...

40. There are two sets of jaws (double, triple, quadruple) on one processing machine for cubic or fully volumetric containers: to the left and right or above and below the initial package.

41. Transformation procedure from initial containers (sealed with liquid or air/gas inside) in cubic containers and/or fully volumetric containers with three or more sides and by means of sealing and cutting the flaps according to previous claims **characterised by the fact that** there is only one sets of jaws (double, triple, quadruple) on one processing machine for cubic or fully volumetric containers: to the left and right or above and below the initial package.

42. the jaws (6,8) or sets of jaws (double, triple, quadruple) are activated (the ones in each machine) all at once or one by one separately, two by two or three by three as this does not affect the end result at all which is simply obtaining a cubic (regular hexahedron, rectangular prism) or sealed fully volumetric (irregular polyhedra with two or three sealed/cut flaps) container with three or more faces.

43. the procedure begins with a robot arm gripper with 4/5/6 axes which holds the initial package, and then drives or directs it to the starting point of one of the machines.

44. a mechanical arm grips, holds and directs the initial container by means of a clamp.

45. the entire procedure is performed using a robot or mechanical arm gripper with 4/5/6 axes which grabs and holds the initial package, and then drives or directs it to embed any of the edges of the initial container onto the stationary impact jaws (6). This starts the transformation procedure of the creation, sealing and cutting of the flaps of an initial container in cubic, irregular polyhedral or completely volumetric containers.

46. the entire procedure is performed by two robot or mechanical arm grippers on 4/5/6 axes in which one of the robots has the function of holding the initial container and then driving or directing it the other robot or mechanical arm, as the latter has one or two sets of double, triple or quadruple jaws.
As such, with successive linear movements and rotations of the container of both the container and the set(s) or jaws which are used, and then the jaws (3,6,8) are activated: the result is a cubic, irregular polyhedral or completely volumetric container with three or more faces since the initial container has been transformed and sealed using a liquid or air/gas, creating, sealing and cutting flaps.

47. there is a set of two jaws: one for stationary impact (6) and one for sealing and cutting (8).

48. there is a set of three jaws: one for stationary impact (6) and two for sealing and cutting (8).

49. there is a double or triple clamp wherein the robot moved to the edge of one of the sides of the initial container, to the jaw/stationary impact body (6) at an angle of 90° or a right angle to the container with respect to the jaw/stationary impact body (6) - and once the flaps (one or two) have been created on the side and have been sealed and cut, the robot

rotates the container 180° to create, seal and cut the flaps on the other side or opposite side of the container.

50. there are two sets of double or triple clamps that are on top of each other or on the left and right of each other so that the robot, once embedded - at a right angle or diagonal to the container with respect to the clamp (6) - in order to create the flaps (one or two), seal them and cut them, the robot simply has to move the container into another double or triple clamp which is aligned with the first and is nearby to create, seal and cut the on the other side of the container.

51. the creation, sealing and cutting of the flaps, as per to previous claims, which **are characterised by the fact that** the container is guided by a robot, it is placed with respect to jaw/stationary impact body (6) at between about 20 and 60 degrees, with 45 degrees being the optimal angle.

52. the final shape or size we get for cubic, irregular polyhedral or completely volumetric containers depends on the following:

A) The size or dimensions of the original packaging.
B) The amount of liquid or air sealed and contained within the container.
C) The depth to which the moving or stationary impact jaw (6) is embedded or penetrates into the container and through any of the sides.
D) The width of the moving or stationary impact jaws (6) with respect to either side of the container.

53. There is a jaw with one impact jaw (6) and one for sealing and cutting (8). They move in the same way as a clamp when opened and can hold any points, corners or vertices of the initial package which are then sealed and cut.

54. The initial containers are filled with air or gas and sealed. The method and end result when obtaining a cubic or irregular polyhedron container is the same. What changes is that these containers, which are already transformed into cubes with air or gas inside, will have the gas removed so that they serve as filling containers and, once they are folded and packaged, are sent to filling and packaging companies so that they can be used to package their products and then be sold in stores.
Once the upper part of this type of container has been sealed with a Tetrabrik® measuring cup, whenever we unscrew and open the cap, all the air or gas can be easily expelled, simply by pushing down (crushing) since the container, in this case, is flexible as it is made with a simple roll of plastic film which can be folded easily.
This system is also very convenient or appropriate for introducing solid substances such as: nuts, fruit, sweets, toy parts or hardware, powder, seeds, etc. However, the use of a cover is not strictly necessary because these substances can be introduced simply through any of the necks or points which would have previously been created by piercing the plastic of one of the points. After this, the filling and packaging of substances begins, and once finished, the open or perforated sections are sealed.

55. after the flap has been sealed, only a portion of the flap is divided, not all of it.

56. Processing procedure for initial containers (sealed with liquid or air/gas inside) in cubic containers **characterised by the fact that** they seal and cut (divide entirely) 2,3 or 4 of the flaps that all cubic containers (hexahedron, rectangular prism or irregular polyhedron) made of malleable flexible materials with roll type film possess.

57. Processing procedure starting from initial containers (sealed with liquid or air/gas inside) in cubic containers and/or fully volumetric containers with three or more faces as per to previous claims which is **characterised by the fact that** the initial container which is transformed into a cube-shaped or irregular polyhedral package is only made of plastic and of any kind.

58. Processing procedure starts from initial containers (sealed with liquid and/or gas) in cubic containers and totally volumetric packaging with three or more faces as per to previous claims which is **characterised by fact that** the initial packaging is made from a flexible-malleable-elastic-resistant material like plastic (essential for sealing the container), cardboard, aluminium, plant-based plastics. It can be made with one or more layers of material.

59. Transformation procedure for initial containers sealed with a liquid, air or gas inside cubic containers with three or more sides as per previous claims, **characterised by the fact that** the initial containers are single-layer or multi-layer materials in sheets or tubes and made of complex or injected materials.

60. the initial containers have two faces.

61. the initial containers have more than two faces: two main faces and other secondary faces and/or folds and/or internal or external corners, such as Stabilo®-type packaging.

62. Inside the original packaging can also be liquids or air/gas with solid pieces or waste as this will not affect

the development and final completion of the cubic container with this process.

63. There may be many and varied types of jaws, as there may be more than two at once: higher or lower, further to the side or in the centre, wider or narrower, stamped, hollow, flat, or wherever they don't impede the jaws (6,8) and can work with constant pressure and cushioning.

64. Process for manufacturing cubic containers and fully volumetric packaging with three or more sides from the processing of initial containers sealed with a liquid or air inside with three or more sides as per previous claims which is **characterised by** fact that the jaw/impact body has an adjustable damping spring system so that this jaw hits against the clamping jaws (3), as it will move back but will keep making contact with the clamps (3).

65. It has adjustable stop screws that hinder the movement or distances the jaws can move in order thus to calculate or limit the distance of these jaws.

66. Process for manufacturing cubic containers and fully volumetric packaging with three or more faces from the processing of initial containers sealed with liquid or air inside with three or more sides as per claims which is **characterised by** the fact that between the clamping jaws (3) and the rod that drives it, a device is incorporated which can move backwards like a spring.

67. between the clamp jaws (3) in the inner and towards the outer ends, an adjustable spring is incorporated to slow movements.

68. the sealing and cutting jaw (8) can be rotated with a telescopic movement, since the joint between the piston rod which drives it and this jaw (8) is made by means of a ball which is attached motionless to the end of the rod, so that it can be introduced into a hollow hemispheric cap/bearing, slightly - a little more than half of a hollow sphere - which is movable (on a 360° hinge) and which is also fixed to the back of the jaw (8).
As a result, the sealing and cutting jaw is guaranteed to be connected, gathered or moved to perfection, to the surface of the jaw/impact body (6) with which it collides.

69. on the outer sides of the clamp/impact body (6) - which is what collides against the side and outer surface of the sealing and cutting jaw (8) - there is, depending on the welding system used, some rubber or another material that fits and is in line with the needs of each specific different type of heat source system, to ensure the correct sealing or welding operation. These systems or heat sources are: laser, electrical resistance, friction, ultrasound field, rotation, thermogenic sheet, etc.

70. the initial container, which moves along a conveyor belt, is directly caught by the gripper of a robot arm to be moved and inserted between the clamp jaws (3) to be grasped and held.

71. the initial container, which moves along a conveyor belt, is directly caught by a mechanical arm to be moved and inserted between the clamp jaws (3) to be grasped and held.

72. four folds have been sealed and cut, obtaining thus a cubic container (regular hexahedron/rectangular prism).

73. four folds are created, in which one is left unsealed or cut, thus obtaining a cubic container with the form of a jar (irregular polyhedron) as one of the flaps is projected upwards and out of the container like a dispenser. Therefore, the bottom of the container is cubic and has a square or rectangular base, and the top is cubic, too, but less volumetric where the flap is left uncut and unsealed.

74. four folds are created, in which two are left unsealed or cut, thus obtaining a cubic container with the form of a boat hull (irregular polyhedron) as these two the flaps are projected upwards and out of the container like dispensers. Therefore, the bottom is cubic with a square or rectangular base, and the top is less volumetric, as the further up we go, the size decreases, tapering, finally flattening entirely at the height of the burr or upper welding.

75. the cubic or totally volumetric packaging manufactured have unique and characteristic welding lines or markings resulting from the completion of sealing and cutting the flaps. They are seen only in the faces where the flaps are created.
Therefore, if in either of the two possible faces on which the flaps can be created, the two flaps are sealed and cut, a welding line will be seen (from above) which forms a letter such as a capital <H> or ‖; but if only one of these two flaps are sealed and cut on each side, the welding line will look like a capital <T> from above.

76. some unique characteristics of the welding lines or marks can be seen, the result of the *sealing and cutting* of three flaps being made. If they are not cut or sealed, the result is that the welding marks or lines left will leave an image on the upper part of the container with the form of a capital <T> on its side (as seen from above). The bottom part is entirely volumetric and cubic and is seen as if it were a capital

<H>.

77. Processing procedure from initial containers (sealed with liquid, air or gas and with or with or without solid pieces inside) in cubic and/or fully volumetric containers with three or more faces as per to previous claims which is **characterised by the fact that** unique and characteristic lines or weld marks can be seen, the result of two flaps having been sealed and cut. If they are left unsealed and uncut, the result is an image on the top of the container of a cubic shape in the form of an uppercase **<I>** on its side looking from above. The bottom part is cubic and fully volumetric, and is seen as a capital <H> or two <T> shapes joined together.

78. Processing procedure from initial containers (sealed with liquid or air/gas inside) in cubic containers and/or fully volumetric containers with three or more faces as per previous claims which is **characterised by the fact that** an opening system such as a screw cap, an aluminium strip, a hole for a straw, etc. can be added in order to provide an outlet or dispenser in the new container.

79. procedure from initial containers (sealed with liquid or air/gas inside) in cubic containers and/or fully volumetric containers with three or more faces as per previous claims which is **characterised by the fact that** one of the flaps may be sealed by left uncut to act as a handle or strap.

80. in the 1 st phase, the container is held still but without maintaining a constant force pressure into it.

81. the initial container, which is moved horizontally and is lying on a conveyor belt, is picked up directly by the gripper of a robot arm on 5/6 axes and immediately deposits it between the jaws or the starting point of the machine.

82. the conveyor belt, which moves the container horizontally and lying down, is hinged to turn vertically (by the locking action of a rod) so that the container also rotates and is placed in vertically (if the initial container is square with all sides equal, this is not required) to then be dropped. It is vertical but is lying on a second linear conveyor (the sides are high so the original container can stand upright and not tip over) which is not articulated to rotate. Then, to put it so that it is standing, there is an object/crossbar almost touching the upper surface of the second conveyor, so that while the initial container is moving or in motion, it rotates 90° and stands up, being stuck at the bottom.
Once we have the initial container upright and standing, the others will be placed behind it so that they will eventually be deposited or fall just between the clamp jaws (3).

83. the initial containers are placed between the clamping jaws (3) by means of a retractable arm.

84. the initial container falls directly between the clamping jaws (3) by means of a trapdoor (10) which is opened.

85. the original container is placed between the clamp jaws (3) by the arm or claw of a robot on 4/5/6 axes.

86. the flaps are separated from the processing machine in cubic containers by directed blowing.

87. the flaps are separated from the vertical processing machine in cubic containers falling directly to the ground or a container, as under the processing machine there is no belt or something to prevent it.

88. the flaps are separated from the processing machine falling directly onto a conveyor belt.

89. the flaps are separated from the conveyor belt below the processing machine, passing to another conveyor belt, as between them is a space large enough so that the flaps are always smaller, falling to the ground or a container.

90. the flaps or triangles are separated from the conveyor belt through a slatted conveyor, as it has gaps wide enough that the flaps fall to the floor or a container by themselves, which is placed just below.

91. when the flaps or triangles just been sealed and cut, they are collected by the gripper of a robot arm when the jaws (6,8) which hold them separate without them being moved or falling anywhere.

92. the processed cubic containers are separated from the processing machine. When the flaps have just been sealed and cut, they are picked up by the gripper on a robot arm. Once the jaws (6,8) separate, the containers are held without falling or being moved anywhere.

93. the processed cubic containers are separated from the processing machine, falling directly onto a container or box, as under the machine there is nothing to stop it or prevent it from falling.

94. the processed cubic containers are separated from the processing machine, falling directly onto a conveyor belt which is just below the machine.

95. the processed cubic containers are separated from the processing machine, grabbed by a gripper on a robot arm and put in boxes.

96. an optical or infrared sensor (1) detects the container when it is positioned between the clamping jaws (3), then they are closed.

97. there is a hatch (10fig9, 10,11,12,13,15) standing beneath the clamp (3) or initial container and adjustable in height, with the sole function of putting the initial package at the precise height - by serving as a support base - so that the clamps catch the first container which is standing by the central or middle part, so it protrudes equally both upwards and downwards with respect to these clamping jaws (3).

98. there are fixed bars (11fig12, 13) which delimit the exact place where the initial container has to be deposited and so that it also does not tilt sideways and remains standing perfectly vertically without bending or the container being crushed by the bottom.

99. there is a perimeter fence (12fig10, 11) for the original container which is deposited by the side and above the hatch, standing exactly where this fence allows. This system is used when the jaws (6,8) on the top of the clamp (3) cannot move backward or forward or to the left or right (if the container is placed vertically but lying down and the clamping jaw is vertical) to clear this area or place.

100. there is a guide clamp (13fig18, 19) that serves only to move out of the packaging machine packages already transformed into cube shapes which are supported above the jaws (6,8) at the bottom, since there is no device machine such as translation units (17), swing cylinders for dumping (16) or simply no more linear cylinders.

101. there are sweeper bristles (14fig9, 10,15) which have the same function as the guide jaw (13), that is pushing cubic packages out of the machine, but in this case these bristles which move downward are attached or fixed to the edge of one of the two sides which is longer than the flap (10).

102. there is an air nozzle (15fig14) used to move the cubic containers away, outward or into a box, onto a container or conveyor belt which are precisely placed under the machine vertically.

103. there is a cylinder/motor rotation for pneumatic/electric tipping (16fig14, 15, 16, 17, 18) which is anchored or attached to one of the columns.
They have two functions:

- if located up with the top jaws, it is used to create space (rotating upwards) so that the original container is inserted between the clamping jaws (3) without difficulty.
- if located down at the bottom, it is used to tip the container once it has been processed into a cube-shaped figure by rotating it downwards, finally falling on a conveyor belt, container or box.

104. there are two linear movement units (16fig21) with a platform (18) which are parallel and they make the left and right of the machine symmetrical.
The jaws (6,8) are placed or installed on/in this platform (18), to help, on the one hand, (provided they are installed on the top) leave space so that the original container is deposited between the clamping jaws (3); and on the other hand, if the platform (18) with two linear translation units is moved the bottom jaws (6,8), they will help the cubic containers and the flaps which are to be sealed and cut fall, without anything getting in their way, towards a conveyor belt (appropriately placed under the machine), container or box.

105. there is a single linear translation unit (17fig20) which moves the clamping jaw (3) and, in turn, the initial container so that they can be positioned just above the jaws or set of jaws (6,8). In this way, when these clamping jaws (3) open, the cubic container falls on a conveyor belt, a container or box.

106. the hatch (10), fixing bars (11), blocking fence (12), guide clamp (13), bristle sweepers (14), cylinder/motor for tipping (16), linear movement unit (17), platform (18), optical sensor/multiple combinations including: one/two/three/four/five/six/seven or all at once, as any of these may appear in any of the cases, doubled or more than two.

107. method for transforming original containers sealed with liquid or air/gas in its interior, or fully volumetric cubic containers of three or more sides by creating flaps, sealing and cutting them as per previous claims, which is **characterised by** two double, triple or quadruple sets of jaws on top of each other and spaced apart enough so that the initial container can pass between them.
The initial container hits the impact jaws (6) above so that the flaps are created followed by the sealing and cutting jaws (8) which seal the two flaps without cutting, so that the container remains held by both jaws (6,8). The jaw pivot (16) where the impact jaw (6) is fixed above will rotate the container 180° downwards and then the rotating cylinder (16) fixed to a linear cylinder in a vertical position pushes the container, which is held by the flaps, downwards so that, in this way, the other one or two flaps is or are created, since the container is embedded in the set of jaws (6,8) or the other impact jaw (3) underneath and the flaps are also sealed. As a result, the flaps on the top are simultaneously cut or divided, so that finally, this jaw / impact body (6) at the bottom, since the two flaps are held, are turned down to 180 de-

grees, so the cubic container is nearly touching a conveyor belt or surface so that it ends with the the remaining flaps being cut and the container falling down.
There are also optical or infrared sensors (1).

108. machine for making cubic and fully volumetric containers with three or more faces from initial processing containers sealed with a liquid or air/gas inside and by creating, sealing and cutting flaps, which is **characterised by being made up of** the jaws, elements, devices and parts listed below (fig1, 2):

It is designed so that processing takes place with a container that is horizontal and lying down.
This machine has infrared or optical sensors (1), self-centring jaws (2) leading to the initial container, an upper stopper over these on the inner side, one or two clamping jaws of the upper stop (3), clamping jaws (3) for the side of the initial container, adjustable supports (4), spring guide rod (5) and finally, on the sides initial container, a triple or quadruple set of jaws (6,8), or if not, four double jaws, one for each point, peak or apex of the initial container.

109. this machine is designed for the original container to be placed and processed, it being in an upright standing position, where, in addition, all jaws and elements that constitute them are oriented in motion and position relative to the initial package. In some cases, as with the jaws, hatch, platform or fixing bars, they will be suspended and connected to the actuators that drive them, except for the fixing bars which will only be suspended in the air; with elements or devices such as optical or infrared sensors, air nozzle, linear movement units, linear or rotary cylinders, they will go supported or subjected to plumbed vertical columns.
In turn, to regulate their height, these columns must be positioned as follows: both the jaws (3, 6, 8) and the elements that compose it, have internally threaded holes or otherwise, which pass through these columns, forming parallel pairs one below the other, creating, as a result, different sections and heights depending on the vertical processing machine for the initial or cubic containers which will be used.
As a result, the jaws, as with any other element or device in the machine, will be screwed or otherwise fastened (e.g.: struts with holes to insert pins) to these pillars or columns, both vertically and horizontally. Furthermore, these columns can appear vertically for each machine: one [to one side, in front of or before the initial container], two [opposite one another and to the left and right of the clamp (3) or initial container] or more than two [to the left and right, front and rear facing each other respectively].
The cylinders which are anchored or attached directly to a column or platform, in some cases, will have holes with or without internal threads, forming two or more pairs, one after another. The bolts will be screwed into the holes with internal threads and struts anchored in unthreaded holes (fig18, 20, 21).
In any case, both the screws and the holes are designed to ensure perfect locking of the elements, devices or parts that are subject to the columns and at the same time, which can (completely) prevent tilting or tipping to either side.
These jaws, elements or devices can also be anchored or fixed to those same columns, but in horizontal positions. These will be attached or tied in different ways: either bolted to a wall by means of a plate, welded to a metal plate or cemented to a wall.
All of them will be perfectly horizontal without any tilt (spirit level). There are also optical or infrared sensors (1).

110. as per previous claims, **characterised by the fact** that there is a vertical column where a set of jaws (double, triple, quadruple) is fixed and anchored where the jaws/impact body (6) are completely level, bound to the column. The sealing and cutting jaws (8) are also bound to the column.
There are also optical/infrared sensors (1) and flaps acting as dispensers.

111. there is a vertical column to which two sets of jaws (double, triple, quadruple) are fixed and anchored where the impact jaw (6) of each set is completely level and is attached to the rod of a linear cylinder (9). In additions, these jaws (6) are fixed, and do not move up and down or left and right.
The two sets of jaw members are aligned in perfect symmetry, one under the other.
The separation between them depends on the height of the first container, the latter being vertically standing, i.e. this initial container has to fit or pass between these two sets of jaws without touching either of them.
There are also optical or infrared sensors (1).

112. as per claim 111 which is **characterised by the fact that** one or both sets of jaws (6,8) can be moved up and down or right and left.

113. characterised by the fact that there is a vertical column where two sets of jaws (double, triple, quadruple) are fixed and anchored, where the jaw/impact body (6) of each set is attached to the shaft of a rotary cylinder (16) and that, in turn, the latter is fixed or anchored in horizontal position and at a right angle with respect to the column.
This cylinder rotates 180 degrees or 360 degrees.
The two sets of jaw members are aligned in perfect symmetry, one under the other.
The separation between them depends on the height

of the first container, the latter being vertically standing, i.e. this initial container has to fit or pass between these two sets of jaws without touching either of them.
There are also optical or infrared sensors (1).

114. machine for manufacturing cubic and fully volumetric containers with three or more faces from the initial processing containers sealed with a liquid or air/gas inside and by creating, sealing and cutting flaps as per claims 107 to 113, which is **characterised by the fact that** in each set of jaws (double, triple, quadruple) the sealing and cutting jaws (8) are fastened to the clamp/impact body (6).

115. Machine to transform initial sealed containers into cubic or fully volumetric containers with three or more faces, as per previous claims, **characterised by the fact that** the jaw/impact body (6) is attached to the rod of a linear cylinder (9) or pivot (16), columns (vertical or horizontal) or a platform.

116. the jaw/impact body (6) is attached to a frame which, in turn, is attached to the rod of a linear cylinder (9) or pivot (16).

117. the jaw/impact body (6) is fixed and directly anchored to two columns vertically or horizontally.

118. the jaw/impact body (6) is hooked or secured to the platform (18) which drives the linear movement units (17).

119. the jaw/impact body (6) is in one piece.

120. the jaw/impact body (6) is in two separate pieces but joined, leaving a gap between the parts.

121. the jaw/impact body (6) is in two pieces joined by one or two clamp/double acting/double rod linear mini-cylinders (9), in order to move or open outward to form flaps.

122. the jaw/impact body (6) at its ends on both two sides has a piece of rubber or other material attached, so the system itself demands a welding method to be used or employed, since it works as a support or shock surface for each sealing/cutting jaw (8).

123. the sealing and cutting jaw (8) is anchored or attached directly to a column.

124. the sealing and cutting jaw (8) is anchored or attached directly to the jaw/impact body (6) by linear (9) or pivoting (16) cylinders.

125. the sealing and cutting jaw (8) is anchored or attached directly to the platform which is driven by two linear movement units (17).

126. the sealing and cutting jaw (8) has a blade for severing the flaps on the side of the device.

127. the sealing and cutting jaw (8) has a spring-based damping system fitted between the actuating rod and itself.

128. as per claim 87, **characterised by the** sealing and cutting jaw (8) having a ball installed on the shaft which is embedded or inserted into the cap/bearing hemispherical hollow (just over half a whole sphere) which is fixed on the back of the sealing and cutting jaw (8).

129. Machine to transform sealed initial containers into cubic or fully volumetric containers (irregular polyhedrons) as per to previous claims, **characterised by the fact that** the sealing and cutting jaw (8) has a welding system mode: heads with ultrasound, friction, lasers, electrical resistance with rod, rotation, thermogenic sheet.

130. Machine to transform sealed initial containers into cubic or fully volumetric containers (irregular polyhedrons) as per to previous claims, **characterised by the fact that** the jaws (6,8) are anchored or secured to a single frame and that, in turn, this frame is anchored or attached to the (vertical/horizontal) columns, platform, straight cylinder (9) or rotary cylinder (16).

131. both the jaw/impact body (6) and the sealing and cutting jaws (8) are fixed or anchored individually without being united by a single frame.

132. there is a double set of jaws which stand diagonally to the apex or tip of the initial container. This set is made up of a jaw/impact body (6) and a sealing and cutting jaw (8).

133. there is a triple set of clamps located in front (front) and parallel to the side, edge or welding line on two sides (top and bottom) of the initial container. It consists of a jaw/impact body (6) in the centre and two sealing and cutting jaws (8) to the left and right of the clamp (6).

134. there is a quadruple set of clamps located in front (front) and parallel to the side, edge or welding line on two sides (above and below the initial container which is vertical) of the initial container. It consists of two mini impact jaws (6) joined together in the centre, and two sealing and cutting jaws (8) to the left and right of the clamp (6).

135. there are optical or infrared sensors (1) placed on

the (vertical/horizontal) columns. There may be more than one for each vertical processing machine for cubic or fully volumetric containers.

136. there is a hatch (10fig3, 4,5,6,7,9) located beneath the clamp (3) or the initial container which is adjustable in height. This is driven by a linear, pneumatic or electric cylinder (9) which, in addition, is anchored or fixed to a column.

137. there are fixed bars (11fig6, 7) which are a type of support and are placed between the clamp jaws (3):

- they are placed between the jaws with stoppers at the ends so they do not fall off or separate.
- they are placed between the jaws but also hold cylindrical rods perpendicular to these fixing bars (11), which punch or pass through through holes located at the ends of these fixing jaws (11).

138. there is a blocking fence (12fig4, 5) anchored or positioned vertically above the flap at an angle of 90°. They may be at different heights but always limited to the space available.
They are also located on the opposite to where the initial container is introduced between the jaws.

139. there is a guide clamp (13fig12, 13) attached to a rod on a pneumatic or electric linear/rotating cylinder which are anchored to the fixed columns horizontally or vertically.
This clamp (13) has the form of a straight line or a curve of around 20° or so.
There may be more than one for each vertical processing machine for cubic or fully volumetric containers.

140. there are sweeping bristles (14fig3, 4, 9) which are attached or coupled to the edge of one of the two sides which is longer of the flap (10). These bristles are somewhat rigid so as to move both forward and backward.

141. there is an air nozzle (15fig8) which is anchored and fixed to the column and positioned at a height, towards the middle of the height of the cubic container. It can go inside or outside of the column, and can also stick out of the column.
There may also be more than one for each vertical processing machine for cubic or fully volumetric containers.

142. there is a cylinder/motor rotation for pneumatic/electric tipping (16fig14, 15, 16, 17) which is anchored or attached to one of the columns. The rod of this rotary cylinder is attached either to the cylinders which activate the jaws or to the jaws themselves. There may be more than one for each vertical processing machine for cubic or fully volumetric containers.

143. there are linear movement units (17fig20, 21) anchored or fixed to the columns (vertical or horizontal) and there may be more than one for each vertical processing machine for cubic or fully volumetric containers. Depending on its function, there are two types:

- paired linear movement units that will move a platform (18) (17fig20, 21) and which will be parallel and be paired on the left and right.
  On the platform (18), in turn, jaws (6,8) are located or fixed, either by means of a cylinder directly through the clamp or by a frame attached to these clamps (6, 8).
- Single linear movement unit (17fig20) to move the clamp (3) and which will be placed, anchored or attached to one of the columns.

144. there are valves (entrance and exit) that control the actuators and clamps.

145. the different elements or devices that make it up are attached with screws.

146. machine to transform sealed initial containers into cubic or fully volumetric containers with three or more faces as per previous claims, **characterised by the fact that** the different elements, devices or component parts are welded together.

147. processing procedure from initial containers (sealed with liquid or air/gas inside and with or without solids) in cubic containers and/or fully volumetric containers with three or more surfaces **characterised by the fact that** the cubic container manufactured is mixed: on one side, it has two flaps: one or both are sealed or sealed and cut; and the other side also contains two flaps: one or both areglued to the to rest/body of the cubic or totally volumetric container (regular hexahedron, rectangular prism, irregular polyhedron...).

148. machine to transform sealed initial containers into cubic or fully volumetric containers with three or more faces as per previous claims, and corresponding to figure 13.14, **which is made up of** the following elements, devices and pieces: to two columns, one on the left and the other behind and to one side, two linear cylinders are fixed inside each of them, which in turn is screwed or fixed, in this case, to a triple set of jaws (6,8) where one is on top and the other on the bottom of the clamping jaw (3).

149. as per the previous claim and corresponding to figure

9 which is **characterised by** the fact that it has added a hatch (10) below the clamping jaw (3) fixed to a third column.

150. as per the previous claim and corresponding to Figure 10.11 where the hatch now includes a blocking bar (12).

151. as per the previous claims and corresponding to Figure 12, it **is characterised by the fact that it is comprised of** the following elements, devices and parts: four columns (north, east, south, west) where the column on the left and right have attached to them, the clamp, fixing bars (11) hooked on rods to slide and a sensor (1), and the front column has a hatch fitted which lies below the clamping jaws (3). The back column has a linear cylinder fixed which supports a vertical frame and, in turn, this is attached to the top of a linear cylinder which drives a triple clamp and at the bottom a triple clamp, wherein the two sealing/cutting jaws (8) are connected by a linear cylinder (double rod/double acting).

152. as per the previous claim and figure 13, which unlike the previous one, has two panels to the left and right where the hatch (10) and rods which support the fixing bars (11) are located, and also that the sealing and cutting jaws (8) are attached to mini-cylinders and, in turn, are secured to the clamp/impact body (6) located halfway between the sealing and cutting jaws (8).

153. machine to transform sealed initial containers into cubic or fully volumetric containers with three or more faces corresponding to figure 14 which is made up of the following elements, devices and pieces: a column in front (east) to which is fixed a clamping jaw (3) horizontally and an optical/infrared sensor (1), and another behind (north) to which a rotating cylinder is fixed whose rod is attached to a straight vertical cylinder. This, in turn, is attached to a linear double rod cylinder horizontally with two jaws (8) and, also, to a jaw/impact body (6) placed in the centre; and in the bottom, facing upward, the same triple clamp but with a cylindrical jaw/impact body (6) and semicylindrical sealing and cutting jaws (8). Also, fastened to the column is an air nozzle (15).

154. machine to transform sealed initial containers into cubic or fully volumetric containers with three or more faces corresponding to figure 15, as per previous claim where a hatch (10) has been added with sweeper bristles fixed to another column in front (south) and, in addition, the triple clamp at the bottom has jaws (6,8) with a rectangular prism shape.

155. corresponding to Figure 16, made up of the following elements, devices and parts: a column to the left where a clamping jaw (3) and an optical/infrared sensor (1) are fixed horizontally, and another behind and to the side where a rotating cylinder is fixed whose rod is attached to a vertical linear cylinder. This, in turn, leads has a triple clamp (6,8) welded to it, where the impact jaw (6) in this case is cylindrical and the two sealing and cutting jaws (8) to the left and right are semicylindrical.

156. as per the previous claim and corresponding to figure 17, where another rotating jaw is added on the top and secured to the column which is behind and to one side to drive a triple clamp (6,8).
The jaws (6,8) of the two triple sets in this case have the shape of rectangular prism.

157. corresponding to figure 18, **made up of** the following elements, devices and parts: a column on the left to the upper part of which are attached a vertical linear cylinder (moves the clamp up and down), to the end of which is fixed the clamp horizontally and beneath this, an optical/infrared sensor (1) which detects the initial container. Below this is a sealing and cutting jaw (8) which is anchored or affixed to the inside of the column, and finally, below all of the above, one of the two arms supporting the impact jaw (6) and which is secured to three of the faces of the left column. There is another column to the right in front of the other, to the upper part of which is fixed a rotating cylinder whose rod is fixed to a guiding jaw (13), underneath the other sealing and cutting jaw (8) and finally, in the lowest part, the other arm carrying the jaw/impact body (6).

158. as per the previous claim and corresponding to figure 19, where what changes is the right column which is placed behind and beside the left column and to which the guide jaw (13) is also attached to the rod of a linear cylinder which, in turn, is fixed or anchored to the inside of the column. Also, below the guide jaw (13), the triple clamp (6,8) is fixed to the column on a support at a right angle, and the clamp/impact body (6) is cylindrical and the sealing and cutting jaws (8) are semi-cylindrical.
The left column only has the vertical clamping jaw (3) fixed to it and, beneath it, the optical or infrared sensor (1).

159. as per previous claims and figure 20, **which is made up of** the following elements, devices and parts: one column to the left where a horizontal linear movement unit is fixed and, in turn, one clamping jaw (3) fixed to this to move forward and backward. Under these two a semicylindrical jaw for sealing and cutting (8) is fixed or anchored to the interior of this column. Finally under these last two, one of the two arms supporting the jaw/impact body (6) which is cylindrical and is attached to three of the faces of the

left column; and one column to the right opposite the other where an optical or infrared sensor (1) is fixed at the top of this, in the centre the other sealing and cutting jaw (8) which is anchored in the interior of the column and finally, in the lower part, the other arm carrying the jaw/impact body (6).

160. as per the previous claim, and corresponding to figure 21 to which a linear movement unit has been added above the clamping jaw (3) and fixed to the same columns on the left and right to each column respectively and parallel. These are fixed on top of a platform (18) with a triple clamp (6,8) which is anchored or attached to the centre right of the platform through a vertical linear cylinder which has a triple jaw (6,8) fixed to the rod: first a double-acting and double-rod linear cylinder - the sealing and cutting jaws (8) are attached - and the jaw/impact body (6) attached below.
In this case, the two triple clamp sets (above and below the initial container) have a cylindrical jaw/impact body (6) and semi-cylindrical sealing and cutting jaws (8).
The jaws (3, 6, 8), the optical or infrared sensor and the linear movement unit below the original container or clamping jaw (3) are also placed as in the previous claim or figure 20.

161. A container made by the process and processing machine using initial containers sealed with liquid and/or air (gas) in cubic containers and fully volumetric containers with three or more faces as per previous claims **characterised by the fact that** figures 37, 38 ,39 ,40 ,41, 42 (cubic containers already processed into cubes by one of the machines) contain the following welding lines:

A - two welding or sealing lines (1): one in the upper central part, dividing this face into two equal halves, and the other in the same position and manner but finding on the base opposite the previous one. This is because, in this case, it uses a tubular initial container (fig36) with just two parallel welding or sealing lines arranged facing each other or above and below each other. This two-sided tubular container sealed with air or liquid inside is produced by vertical liquid packaging machines.
B - welding lines (2) that arise or result from the action of sealing and cutting of the flaps or triangles (2, 3, 4).
In this case, I have shown figure 37, 38, 39, 41, 42 with the four highest weld lines possible, corresponding to the four possible maximum flaps that can be created in this type of packaging.
In figure 40, one of the flaps has been left unsealed and uncut, which creates a kind of dispensing point.
C - welding, soldering or burr lines (3fig40, 41, 42) created by the system of pinching jaws (19fig68, 69). These welds, of course, are optional, as they are generated later with the new flexible cubic container being already formed. Furthermore, these can be made or not, whenever this new type of packaging requires greater rigidity or consistency.
Thus, they can choose how many additional folds, welding or burrs they want, on any of the 12 possible edges. These may be: parallel or perpendicular, vertical or horizontal. Therefore, for example, we have represented: figure 40 with two burrs (3) or pinched horizontally (3) and on the face acting as a base, thereby giving greater stability to this side of the bottom; figure 41 with four vertical folds pinched-burred (3) that will help the sides to stand straight; and figure 42 with eight edges (vertical-horizontal) pinched and sealed, leaving their corresponding protruding burrs or folds.
Figure 41 has a hole as a kind of dispenser with a strip for the straw.

162. as per the previous claim **characterised by the fact that** the cubic containers or figures 44,45, 46, 47, 48, 49 contain the following welding lines:

The welding lines are the same (a, b, c) as those described in the previous claim, but with the difference that in this case, the two-sided initial container from which we begin has three seals or weld lines (fig 43).
Therefore, in the figures 44, 45, 46, 47, 48, 49 the fold or side vertical weld line (4) which halfway along that side and which corresponds to the vertical welding line (4) of the initial container (fig43) with two horizontal perimeter lines (1).
Figure 47, unlike figure 40, does not have one of the flaps or triangles left uncut or unsealed and where, furthermore, a cover is incorporated.
All other figures or packaging represented may have the shape or size desired.

163. as per claim 161,162 **characterised by the fact that the** cubic containers and figures 51, 52, 53 contain these welding lines:
The same welding lines 1, 2, 3, 4 (a, b, c) as described in claim 161, but with the difference that in this case, the two-sided initial container used has four seals or welding lines: three on the perimeter and one perpendicular to the welding lines (1).
Therefore, in figures 51, 52, 53 the vertical weld line (4) can be seen which is halfway up one side and which corresponds to the vertical line (4) in the middle of one of the faces of the initial container (fig43), as well as three perimeter welding lines (1) which are in the three adjacent faces of the cubic container,

two horizontal and one vertical.

164. as per claims 161, 163 **characterised by the fact that** the cubic containers and figures 55, 56, 57 containing these welding lines:
The welding lines are the same 1, 2, 3, 4 or (a, b, c) as those described in claim 161, but with the difference that in this case, the two-sided initial container from which we begin has five seals or weld lines: four perimeter and one in vertical or perpendicular to the weld lines (1). Therefore, in Figures 55, 56, 57, ther vertical welding line (4) can be seen which is halfway along one of the faces corresponding to the vertical line (4) in the middle of one side of the initial container (fig54) and, also, four perimeter welding lines (1) found halfway along the adjacent four faces of the cubic container:

two horizontal and two vertical.

165. as per claim 161 which is **characterised by the fact that** they are unique in form and features, as the identifying features of this new type of packaging with more than two faces can be seen.
The common characteristic features are:

a - a central welding line (1) peripherally bordering each new cubic container. This welding can be left or can be almost unseen depending on the final use of the product, i.e.: if we want a flexible cubic container to serve as an ice cube tray (1fig61), an unseen welding line can be left, as once this welding have been generated, it will be instantly cut as is done immediately after any welding on any type of soft, flexible, film-type materials.
If, however, we would like to make larger containers with substances inside that will be consumed, these will be left as as they look better and also because they can give greater consistency and rigidity to this new cubic container. Therefore, they may have different widths as required, such as: 2, 3, 4, 5, 6, 7, 8 mm or more.
b - the welding lines (2) left by each of the flaps have been created, sealed and cut.
They can be seen in detail due to the method of the invention which leaves a mark in the middle of these welding lines due to the welding once the welding lines (1) are combined with the welding lines (2).
This type of two-sided initial container is usually manufactured by one of the vertical liquid packaging machine models.
c- the welding lines or burrs created by the pinching jaws (3.19 fig68, 69). This type of welding is optional as the cubic container would have been generated and formed later and also because they only have the function of conferring a greater consistency to the container. Thus, we can choose how much additional welding is required on the eight or twelve edges, because they can be vertical or horizontal with respect to the container.

166. as per the previous claims **characterised by the fact that** there is a cubic container model in which the initial container (fig54) used has two more vertical welding lines (4) than figure 15.
Each of these two sealing lines (4) pass through the centre of the only two faces on the initial container. Therefore, figures 44, 45, 46, 47, 48, 49, 51, 52, 53, 55, 56, 57, 65, 66, 67 have one more welding or sealing line(4) directly in front but in an opposite or parallel face.

167. as per claim 137, **characterised by the fact that** the drawings depicted herein can be modified (with the same characteristics and a variety of forms) as one or more than one of the flaps or triangles can be left unsealed or uncut during the manufacturing process (through the processing machines) so that they will serve to spouts.
Therefore, they may have only two or three welding lines: (2) corresponding to two or three flaps or triangles (fig40).

168. as per previous claims **characterised by the fact that** all figures described above have a spout through which the liquid or air contained within can leave: *tetrabrik*® cover, hole for a straw, nozzles with filters.

169. as per previous claims **characterised by the fact that** both the figures previously described as irregular polyhedral packaging have no type of dispenser, part or device.

170. as per previous claims **characterised by the fact that** in figures 65, 66, 67, the two flaps on the upper face have been sealed and cut and on the opposite, bottom face, the two flaps have been attached to the trunk or the rest of the container. The opposite can also be true with the upper two flaps attached and the lower two sealed and cut, or vice versa, or with one and not both of being sealed and cut or attached.
In figures 65, 66 and 67 except that in the bottom face of two of the flaps have been attached to the package with glue, the characteristic welding lines can be seen, these being:

a) welding lines (1) coming in this case from an initial package of three seals (fig16) manufactured by vertical packaging machines.
b) welding lines (2) resulting from the sealing and cutting/complete sectioning of the two flaps created on one of the faces.

b) welding lines (3) resulting from the creation, after the container has already been processed in the form of cubic figure with burrs created by pinching jaws. In this case, only in figure 66 and its four vertical edges have these burrs or folds been made.

171. as per claims 161 to 170 **characterised by the fact that** figures 25, 26, 27, 28, 29, 30, 31, 32, 33 or irregular polyhedral packages must be attributed: these particular and unique features such as all types and variants of welding lines presented above and having this type of cubic or rectangular prism container for which two, three or four of the flaps are sealed and cut.

172. as per the previous claim **characterised by the fact that** it has a trapezoidal shape since the flaps correspond to the base of the container or the lower part, larger ones have been made so that a greater or wider welding line and, in turn, this makes the cubic container and wider at the bottom than the top, as one of two of the flaps have been made smaller, meaning narrower welding line(s).

173. process for manufacturing cubic or irregular polyhedron containers from initial containers (sealed with liquid or air/gas inside) in cubic and/or fully volumetric containers with three or more faces, as per previous claims, **characterised by the fact that** one or more specific parts of an initial container of two sides are divided, so that later, after this initial container (now cut) becomes (for any of the machines) cubic or fully volumetric containers with the shape of irregular polyhedrons, or cubic containers with projecting points or dispensing necks.

- This is achieved by sets of two jaws (fig22, 23.24): one impact (6) and one sealing and cutting (8), creating sealing or welding and cutting of parts (corners-vertices-sides) and above and below a double-sided initial container, the latter being on a plane.
- The sets of two jaws are curved, rectilinear or have varying degrees of inclination.

These cut and sealed ones are made after the initial two-sided containers undergo the sets of two jaws [one impact (6) and one sealing and cutting (8)] carrying out each action.

- The position or shape of these jaws with respect to one of the four corners or sides of the container is very diverse: arranged diagonally or obliquely (fig22, 23,24), rectilinear or curvilinear, and even round to make a hole in a sealed flap but not cut to serve as a handle.

For example, severing a portion of a corner or one or two of the sides and combining with rectilinear with oblique or curvilinear.

So in this way, and depending on the part(s) that have been previously divided in the initial container, cubic containers can be obtained with very original and attractive irregular polyhedral shapes (fig25, 26,28,29,30,33), but only when two of the four possible flaps (which all of the initial containers have) have been sealed and cut.

If only two or three of the flaps are sealed and cut, smaller or larger dispensing points or necks on the left or/and right are obtained leaning more or less one way or another (fig27, 28, 31, 32, 40).

174. as per the preceding claim, **characterised by the fact that** this whole process as described above can also be done with the strange and unique clamps installed directly on the sealing and cutting jaws on the vertical liquid packaging machines.

As such, the sealed and divided portion on the plane of both two sides of the initial container is carried out before or after to the transformation of the initial into a cubic container with any of the machines, through the sealing and cutting of the flaps.

For this to be achieved, on the vertical liquid machines, the two types are arranged into two sets of jaws (6,8).

These two different sets of two jaws alternate their movements to seal and cut: in a straight line when the container is to be sealed, and with the multi-form (curvilinear-rectilinear - diagonal) or rectilinear jaw at varying degrees of inclination for when dispensing tips/necks are to be created.

- These two kinds of sets of jaws are placed simultaneously on the same machine, one on top of the other without hindering each other.

These two kinds of sets of jaws are combined as follows:

First, the classic horizontal rectilinear sealing and cutting jaw (1) is used, available on all vertical liquid machines.

Second, the unusual sealing and cutting or diagonal - rectilinear - curved jaw is used (the same jaw incorporates several different jaws simultaneously: straight, oblique or curvilinear).

These can be assembled in different ways if taking different directions, but the simplest is to seal and cut diagonally.. -Alternating in this way, the same container is obtained twice with one of them facing the opposite direction.

As a result, they have the same normal, straight sealing and cutting form on one of the faces of the initial container, and the other face has a multi-form or non-linear welding line.

175. there is a set of two multi-form jaws (6,8) in which the different types of clamps, such as rectilinear, curvilinear, and in different directions or with different degrees of inclination (straight or diagonal) are combined and assembled.
Figure 22 shows only an example of a multi-form clamp.
There can be multiple combinations.

176. a set of two rectilinear jaws (6,8) is placed on a plane with respect to the initial container with two faces: diagonally and at various possible degrees of inclination for sealing and severing part or parts of the initial two-sided container.

177. a set of two jaws (6,8) to create salient points or dispensing necks as irregular polyhedral packages with a curvilinear shape.

178. the jaw/impact body (6) has a curvilinear shape.

179. the exact amount of liquid without air inside a plastic container is controlled; ultimately, the size of the container with respect to the amount of liquid that can be introduced into the initial two-sided non-volumetric container.

- This is achieved by introducing or placing (below and sticking out) next to the set of two sealing and cutting jaws (6,8) any vertical liquid packaging machine and below and protruding from it:

a vertical ejector jaw (20FIG34) to crush, in a controlled or regulated manner (to the exact size required) on both sides and outside of the initial container with air or liquid inside, in order thus to expel upwards the liquid or air inside the initial container. This will also expel any residual air bubbles that might remain inside the initial two-sided non-volumetric container.
Therefore, the initial volume of the container can be estimated while making sure there are no air bubbles inside.

180. this same system of jaws protruding out of the sealing and cutting jaws, as explained in the previous section, can be used also with this set of two flap sealing and cutting jaws.
This will naturally expel, more if possible, the liquid or air trapped inside the flap when it is caused by the jaw / impact body (6).

181. with pinching jaws (19fig68, 69) any of the irregular edges of a polyhedral cubic or rectangular prism container are pinched or crushed to create a burr or fold, followed by the fold being sealed permanently with this form.

- The purpose of this technique or process is to give this new cubic container greater consistency and stability, although it is not necessary because without this last application or process, containers without flaps are already consistent and stable.
- Each set of two pinching jaws (one impact and another sealing and cutting) may be arranged to be operated with movementssimilar to a normal set of two grips but can also perform movements similar to those of a common clamp.

Once they the initial container is immobilised and transformed to the shape of a cubic container, some of the edges will be pinched or trapped between the two jaws to then be closed and sealed. Once the plastic part has been pinched, forming burrs or projecting edges as required and desired, those burrs or edges, too, can be cut.
The movements of this set of pinching jaws may be different:

a) linearly at a right angle (90°) forward and then closed.
b) similar to that of a calliper but back and forth: while advancing, it will open and then close once the edge is reached. It will pinch or catch this part of the edge and once the burr or fold has been created, it will be sealed.

This forward and backward movement of the clamp ensures the fold or burr is made well.

- As such, a set of two pinching clamps for each of the twelve edges of all cubic containers can be installed, but on four of the edges where there is already a burr or hem created by the action of sealing and cutting of the flaps, it is not necessary.
- Once the cubic container is held any burrs or folds are created on the edges, it can rotate so that each edge of this cubic container is conditioned by a set of two pinching jaws which are anchored or attached to a particular place and position.
- In each cubic container processing machine, through the sealing and cutting of the flaps, there is one or more than one set of two pinching jaws.

182. a second lighter welding is performed with any of the welding lines (1) which serve to seal the liquid or air/gas within the initial two-sided containers.
This second welding is carried out with little transmission of heat so that the plastic is not altered or melted, thus facilitating the creation of the welding line (2) as it produces an intersection of two welding lines (1, 2) leaving half of the welding line (2) or the flap welding line sealed and cut (divided). Depending

on the case (if, for example, 50-gauge polyethylene plastic is used), it may be somewhat unsafe to seal that particular point between the welding line (1) which has already been done and the welding line (2) to be completed.
With this second welding, this contribution is therefore achieved on part of plastic which can later be reshaped more easily along with other parts containing plastic flaps or triangles when these flaps are sealed and cut (divided).
This is because when the flaps are created, what happens is that two sides of the initial package on two faces meet and make contact.
This second line of lightweight welding is performed just before or earlier and very close together (at a millimetre of distance or more) to the perimeter welding line or
lines (1, 2, 3, 4 or more) which any two-sided initial container possesses.

183. all the jaws (2, 3, 6, 8) or parts of the machine developed and are activated, these being, in movement (rotating, tilting) together with the initial container. They may all move together or only some of them, such as the jaws, or only some of them and the initial container.

184. the jaws (6,8) act or are activated separately or independently: one by one, by twos, threes or fours without this changing or altering anything, the result being the final cubic, rectangular prism or irregular polyhedral container.

185. the initial containers from which we start are sealed being welded twice (container or tube bag), three times (two of two parallel sides, one by the centre), four times (three perimeter and one in the centre), five times (four perimeter and one in the centre), or six times (four perimeter and two in the centre).

186. as per previous claims and 107, 110, **characterised by the fact that** in a single set of jaws (double, triple, quadruple) there are also some mini-clamp jaws (3) installed which immobilise the container once it is hooked or held by the flaps once they have been sealed but not cut. This is due to the the impact (6) and sealing and cutting jaws (8) which are still holding or attached to the flap.
Therefore, these mini clamping jaws (3) have the function of ensuring the container does not tilt to either side.

187. there are the film-type plastics on a reel with with the initial containers are manufactured with two different thicknesses: two-thirds (more or less) thinner than the initial container, and the remaining third (more or less) of the bottom of this being thicker, so that when this initial package is transformed into a cubic container, the bottom part of the package acts as the base (where the packaging is designed to stand) and has a greater thickness so that the container is more stable and does not tend to fall.

188. procedure for processing initial containers (sealed with liquid or air/gas inside) into cubic containers and/or fully volumetric containers with three or more faces as per previous claims **characterised by the fact that** (a) clamping jaw(s) is/are not required (3).

189. on the flaps, points or protruding corners, a way of opening and closing is added for the liquid contained inside the cubic container to come out. This prevents the liquid inside from coming out otherwise and only opens when pressure is applied to the liquid contents inside by squeezing the cubic container.
Once the pressure on the cubic container is stopped, it closes again.

190. triple clamp which is **characterised by the fact that it consists** of an impact jaw (6) in the centre and two sealing and cutting jaws (8) on the left and right, above and below, or diagonally relative to the jaw/impact body (6) or central jaw (6).

191. triple clamp as per previous claim **characterised by the fact that** the jaws that are combined on one frame.

192. triple clamp as per previous claim **characterised by the fact that** its jaws are independent of each other as they are not combined on one frame.

193. quadruple clamp **characterised by the fact that** it consists of two impact mini-jaws (6) or central jaws (6) joined together, and two sealing and cutting jaws (8) to the left and right, above and below or diagonally relative to the jaw/impact body (6) or central jaw (6).

194. quadruple clamp as per previous claim **characterised by the fact that** the jaws that are combined on one frame.

195. quadruple clamp as per claim 191 and **192 characterised by the fact that** the jaws are independent of each other, since they are not combined on a common frame.

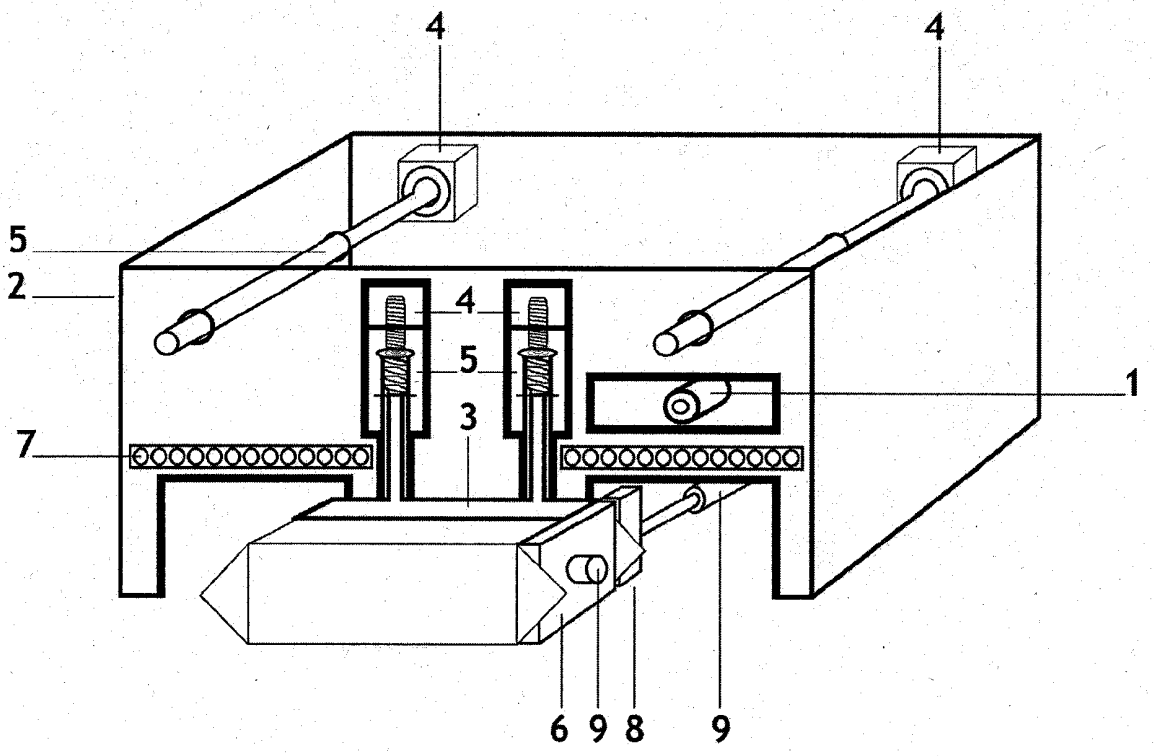


FIG1

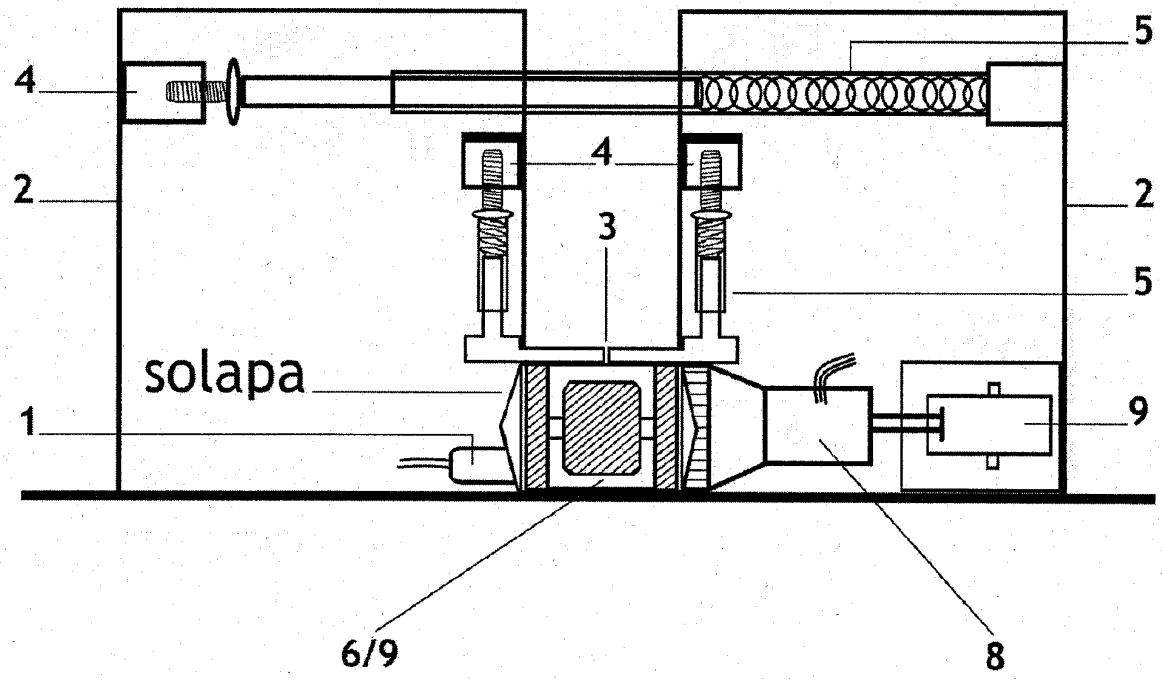


FIG2

FIG3

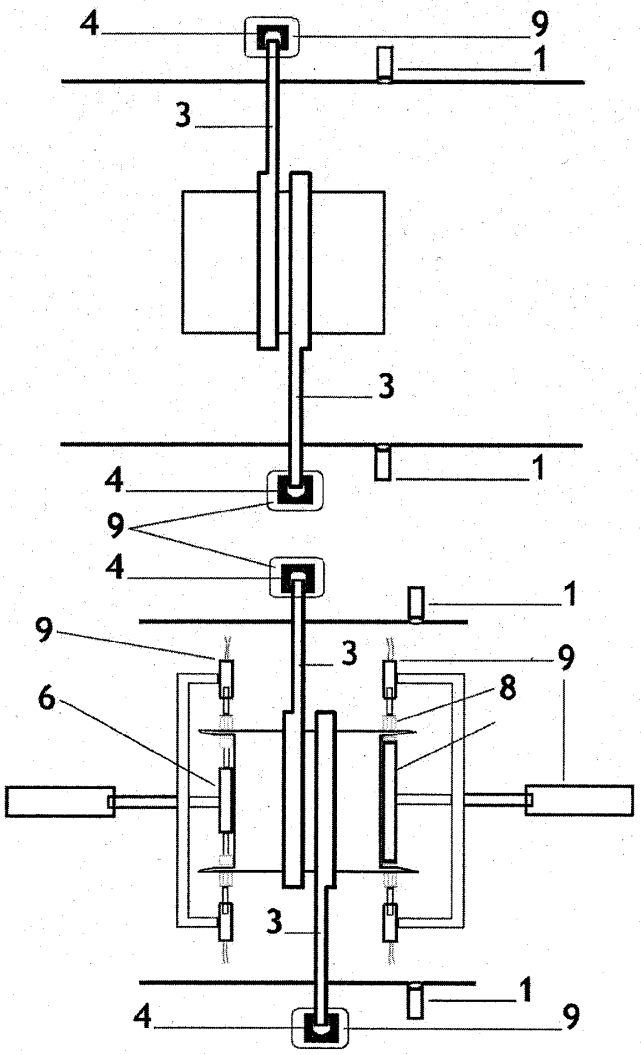


FIG4

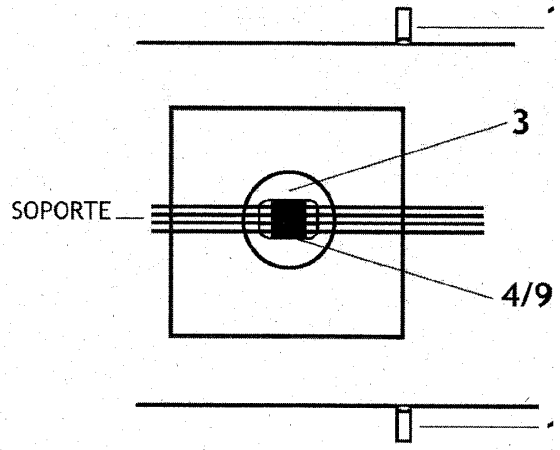


FIG5

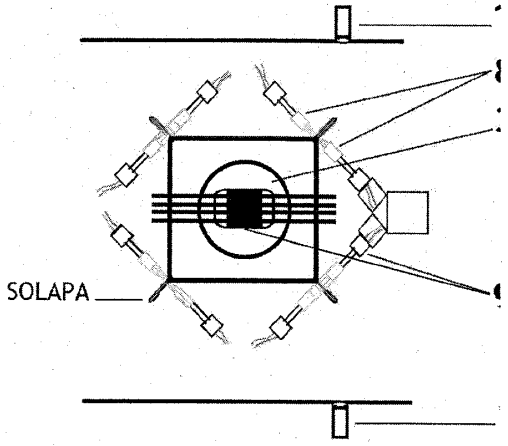


FIG6

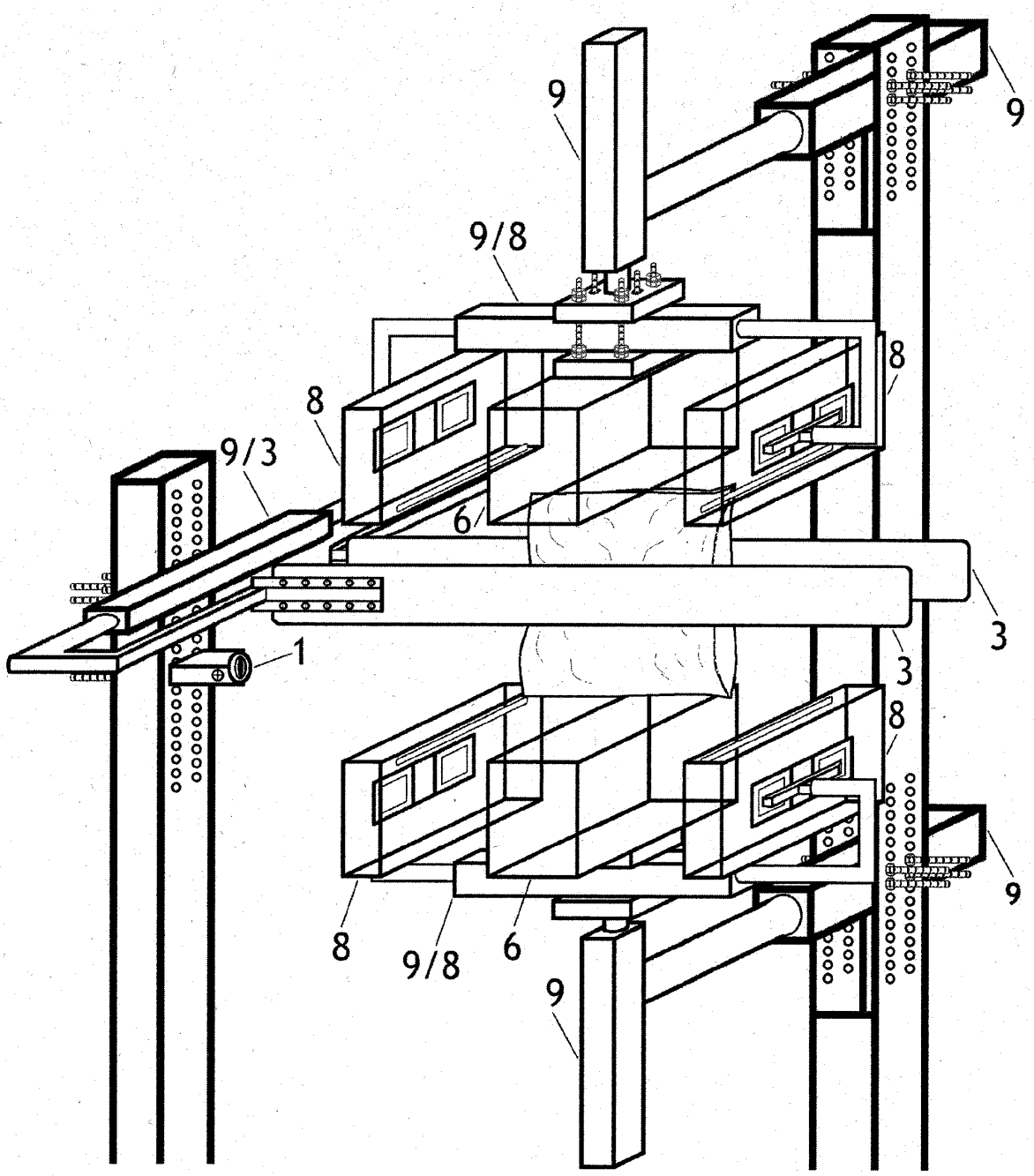


FIG7

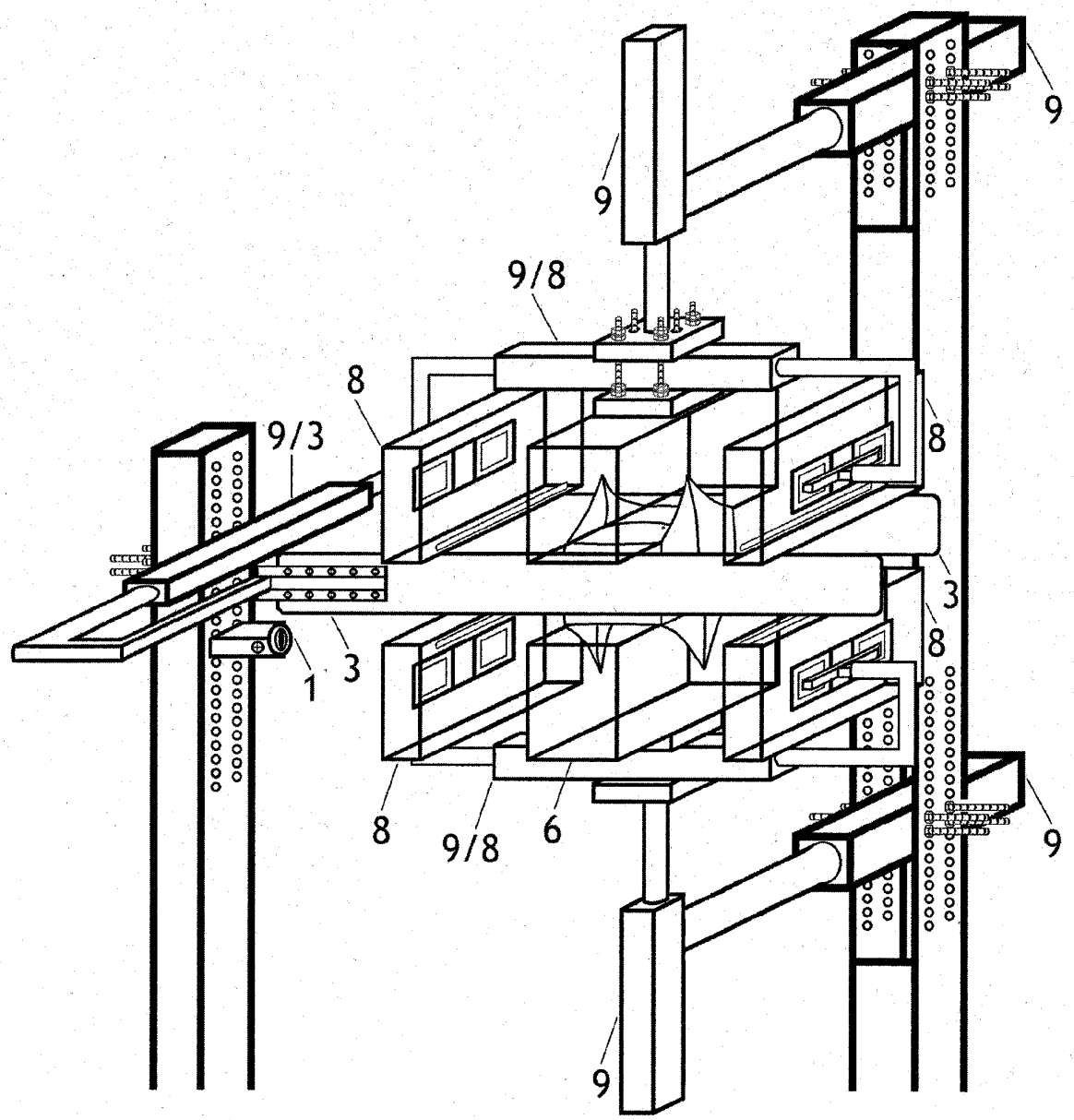


FIG8

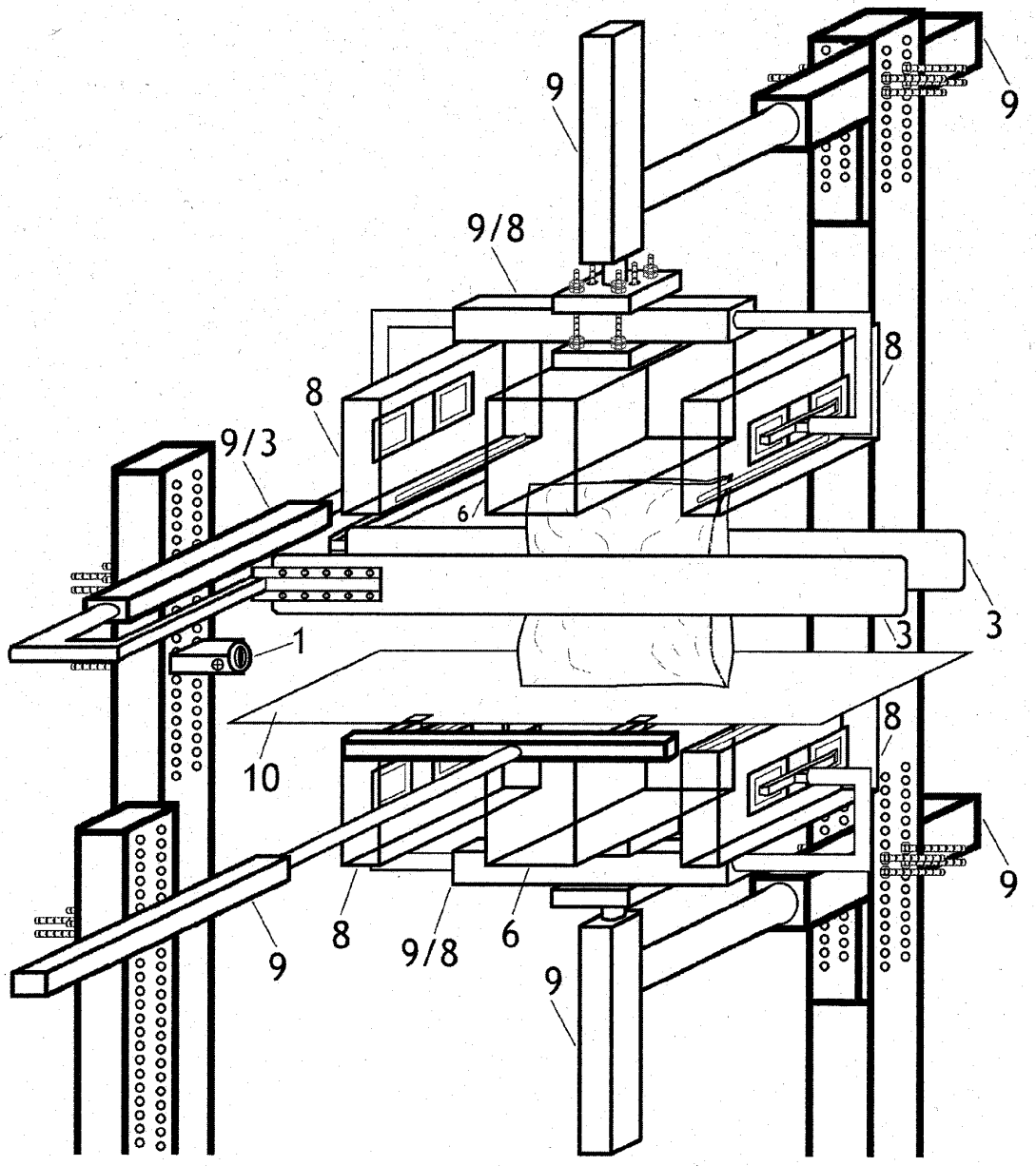


FIG9

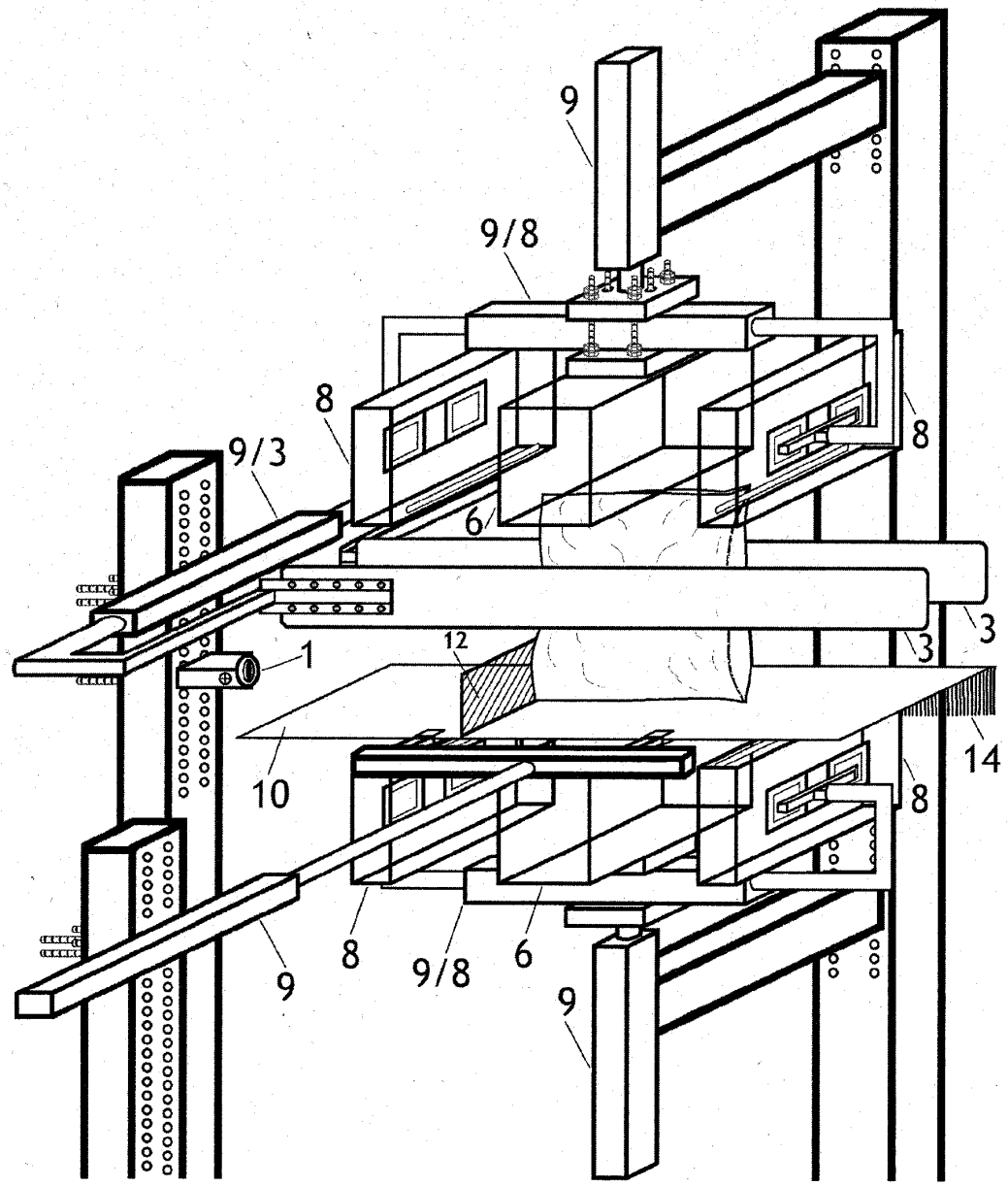


FIG10

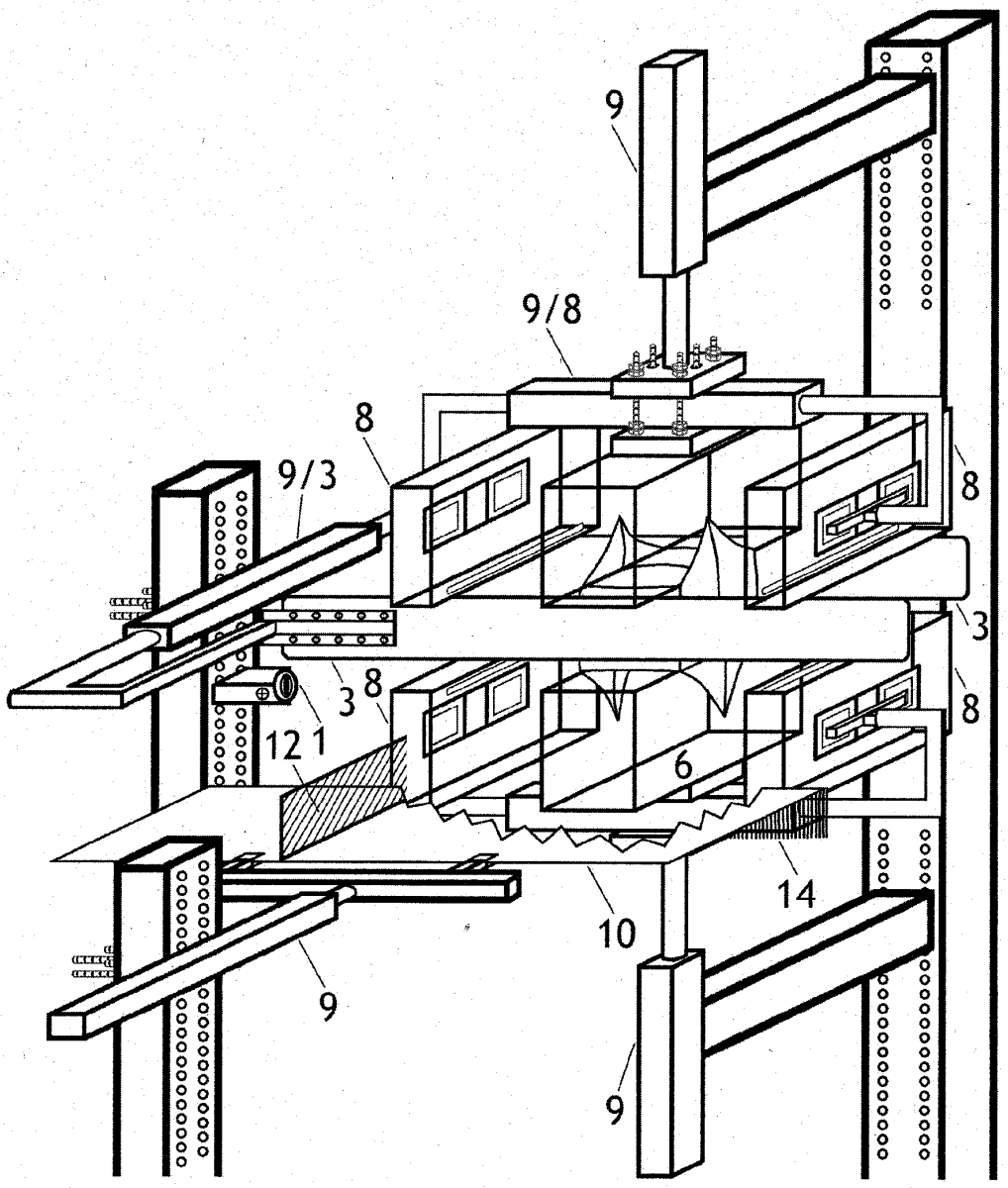


FIG11

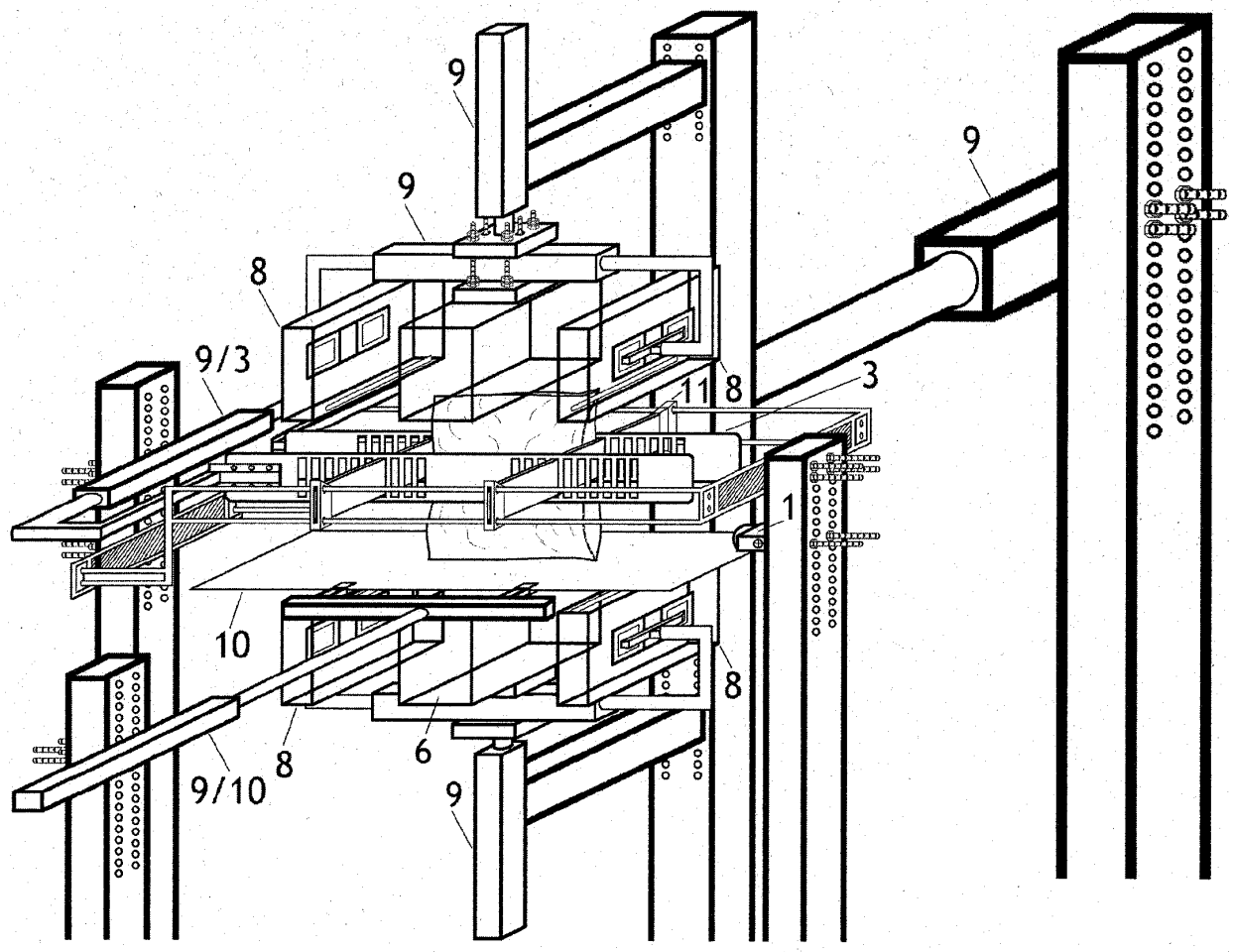


Fig12

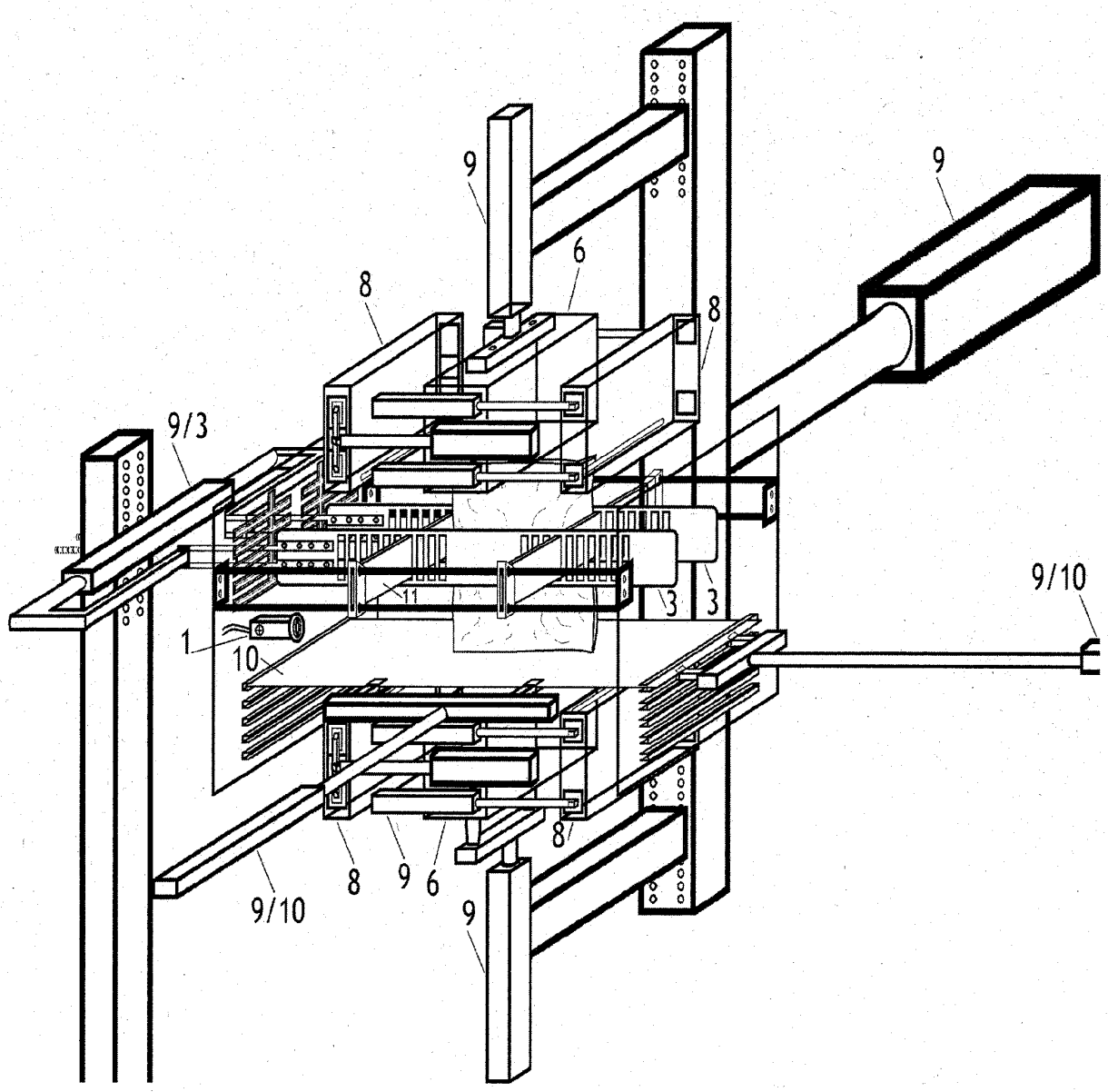


FIG13

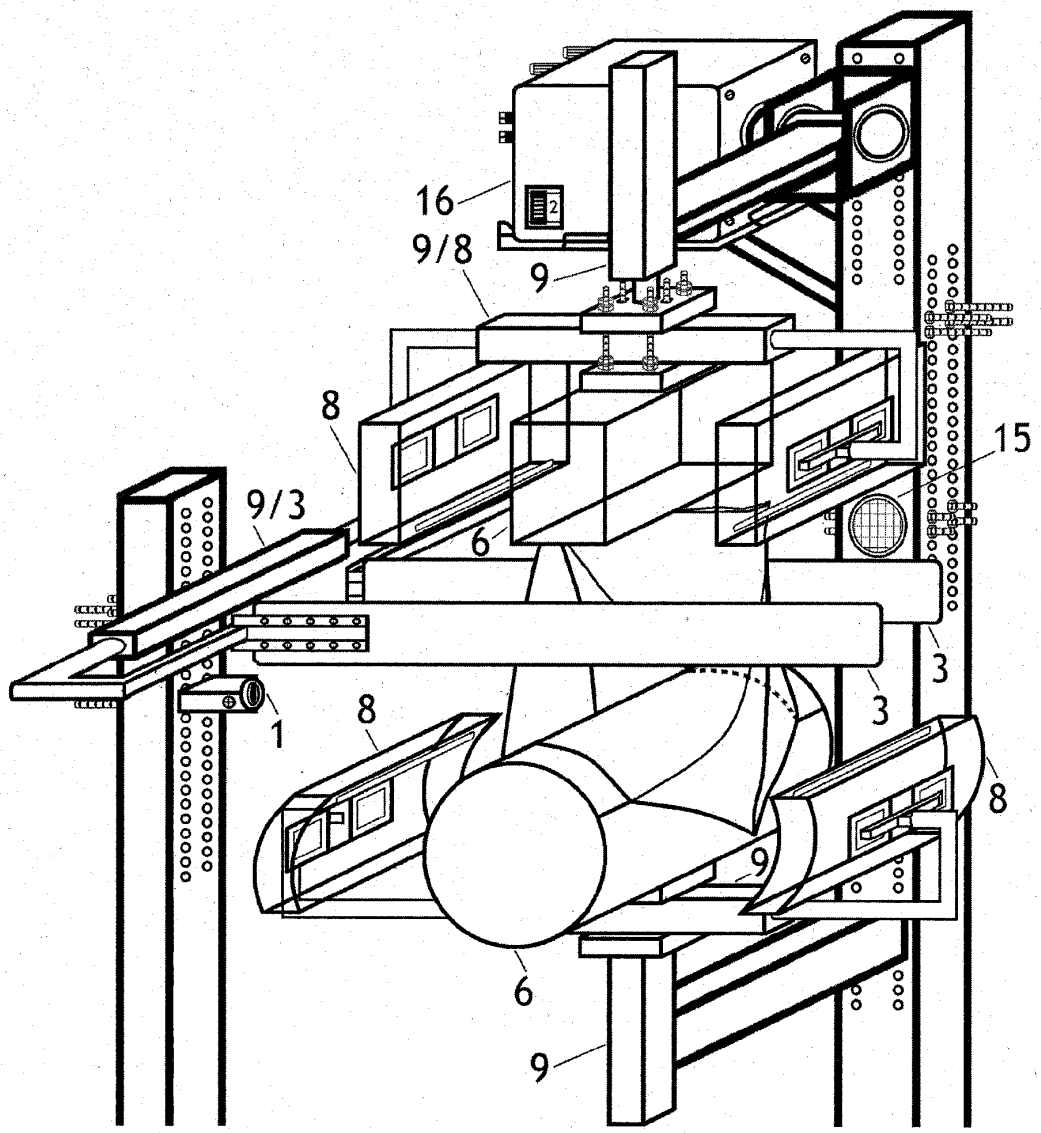


FIG14

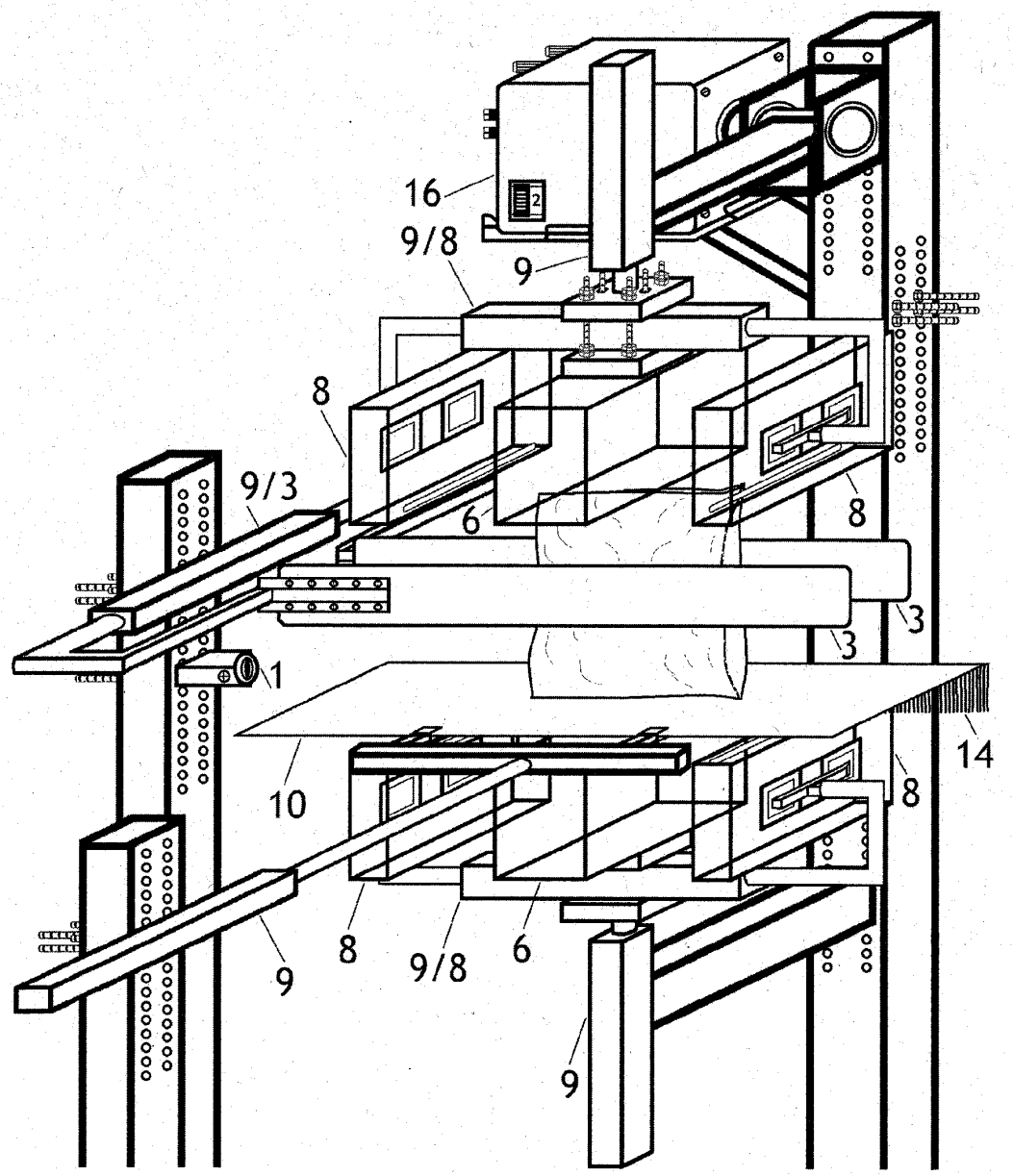


FIG15

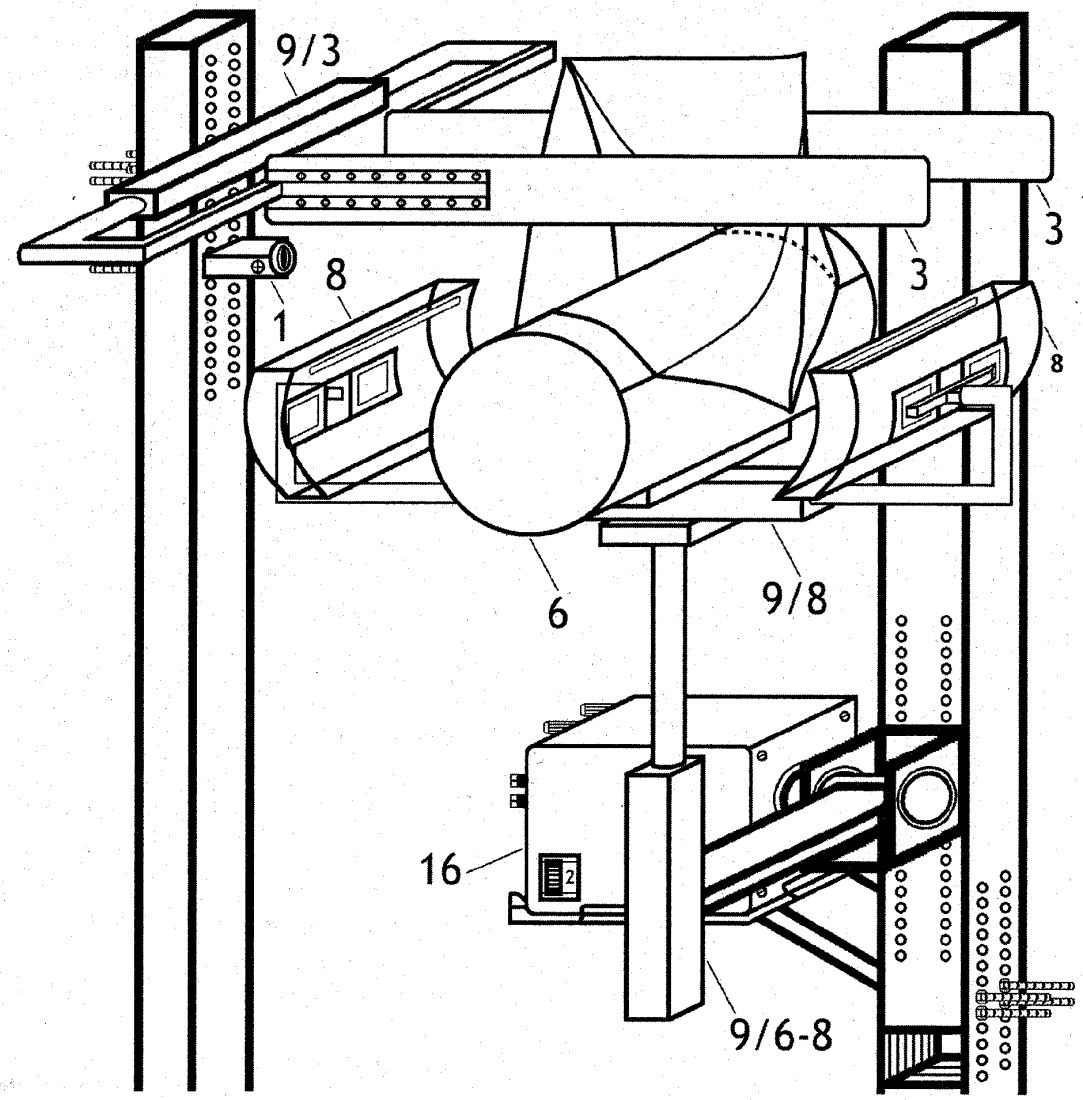


FIG16

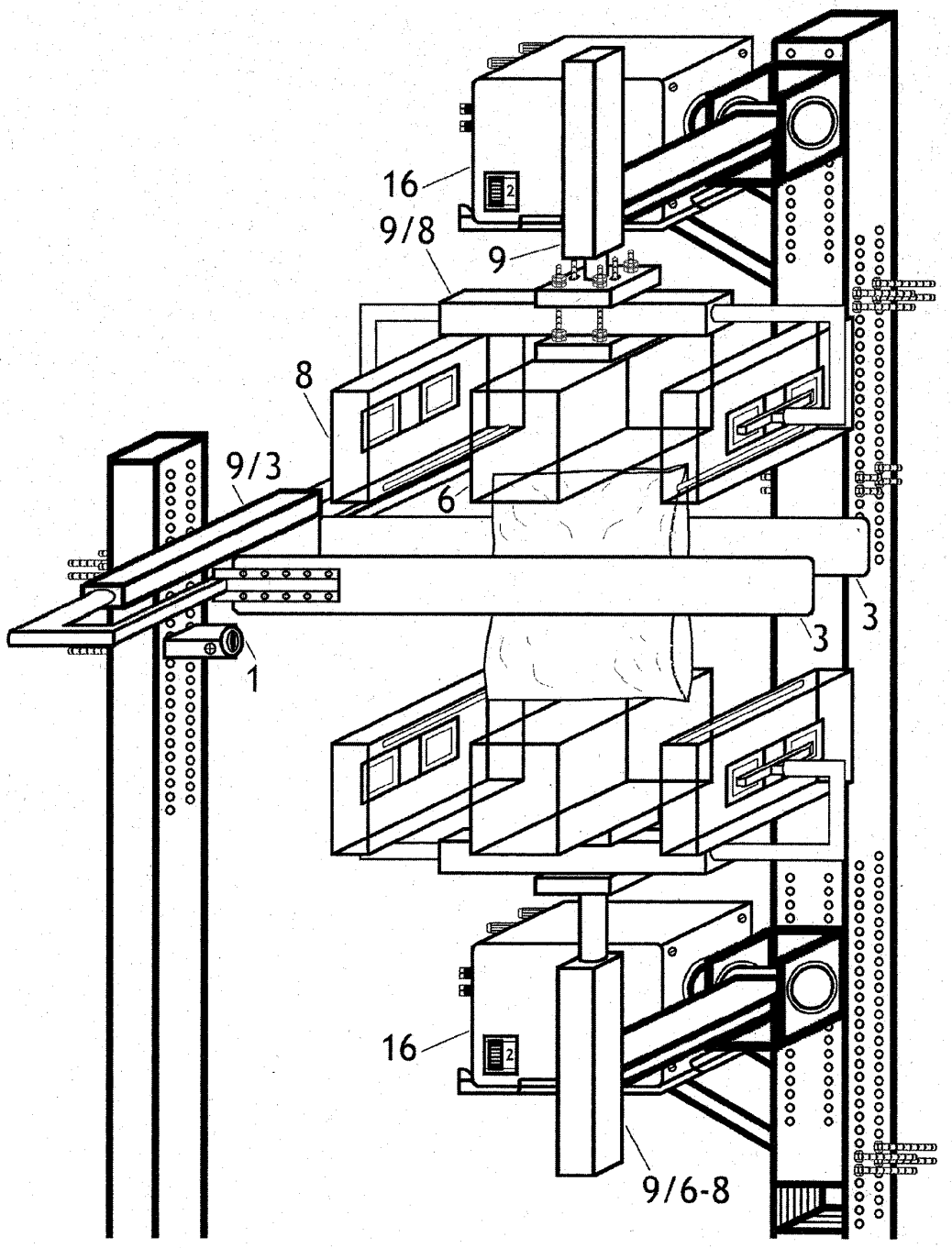


FIG17

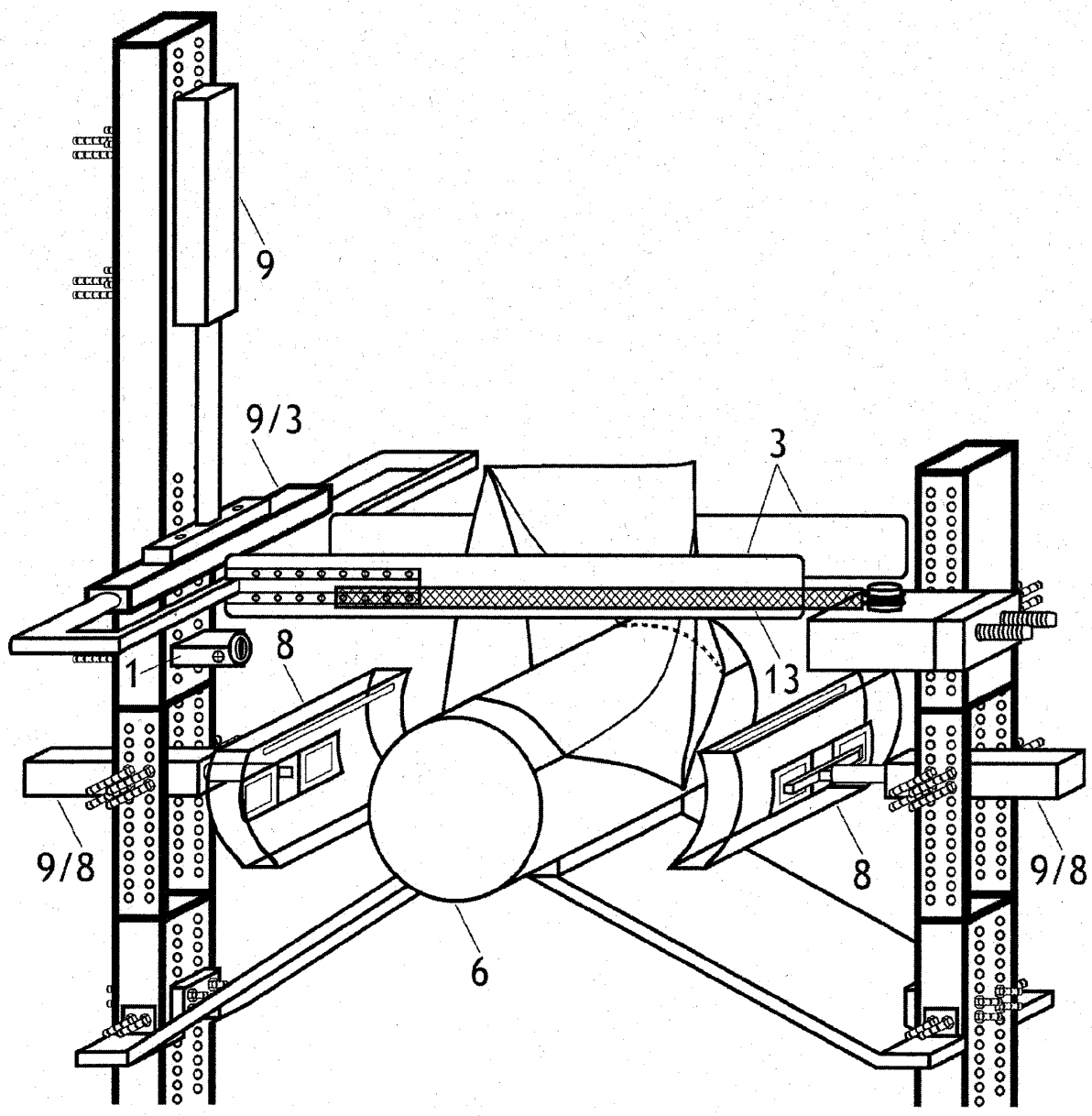


FIG18

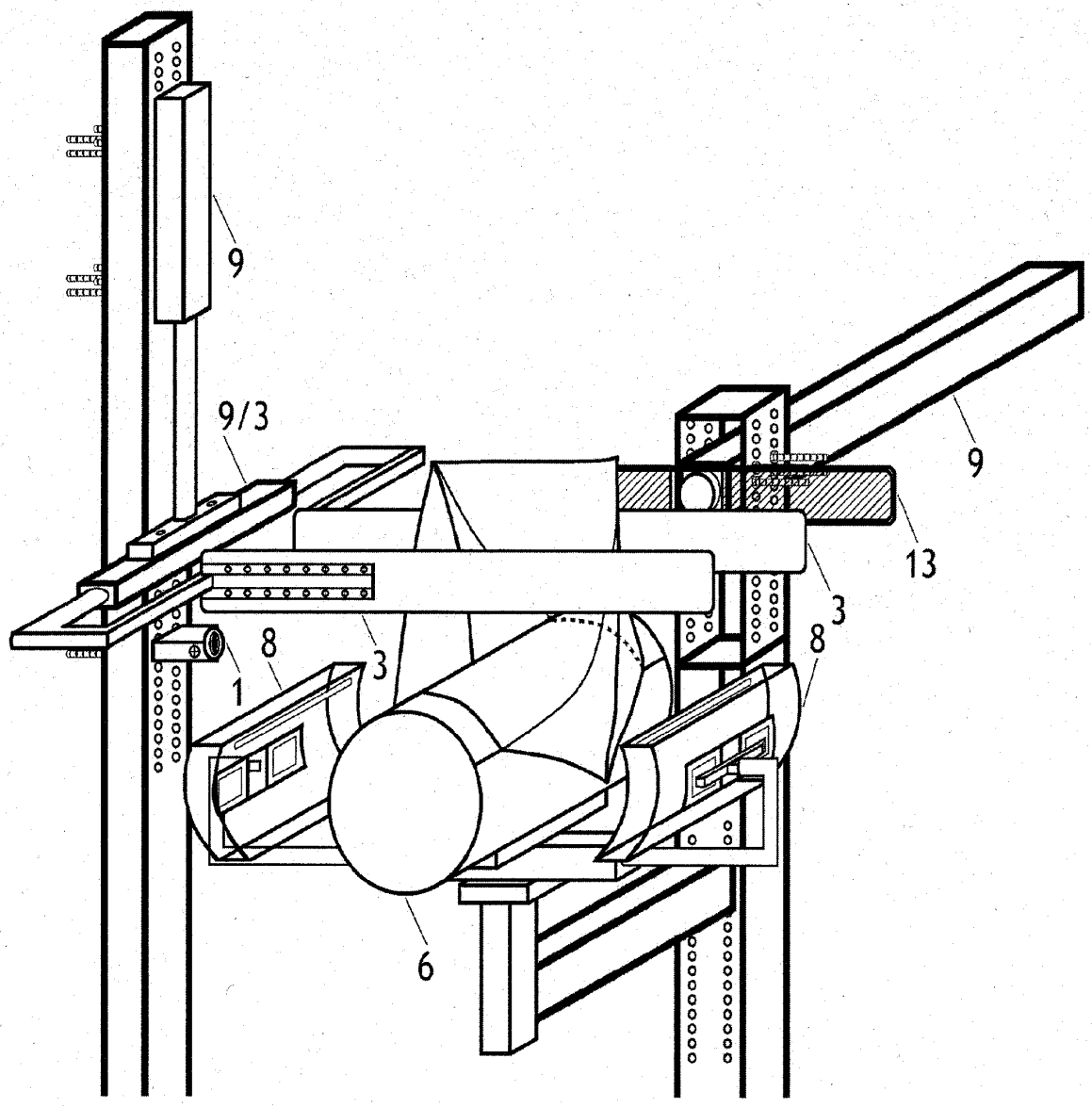


FIG19

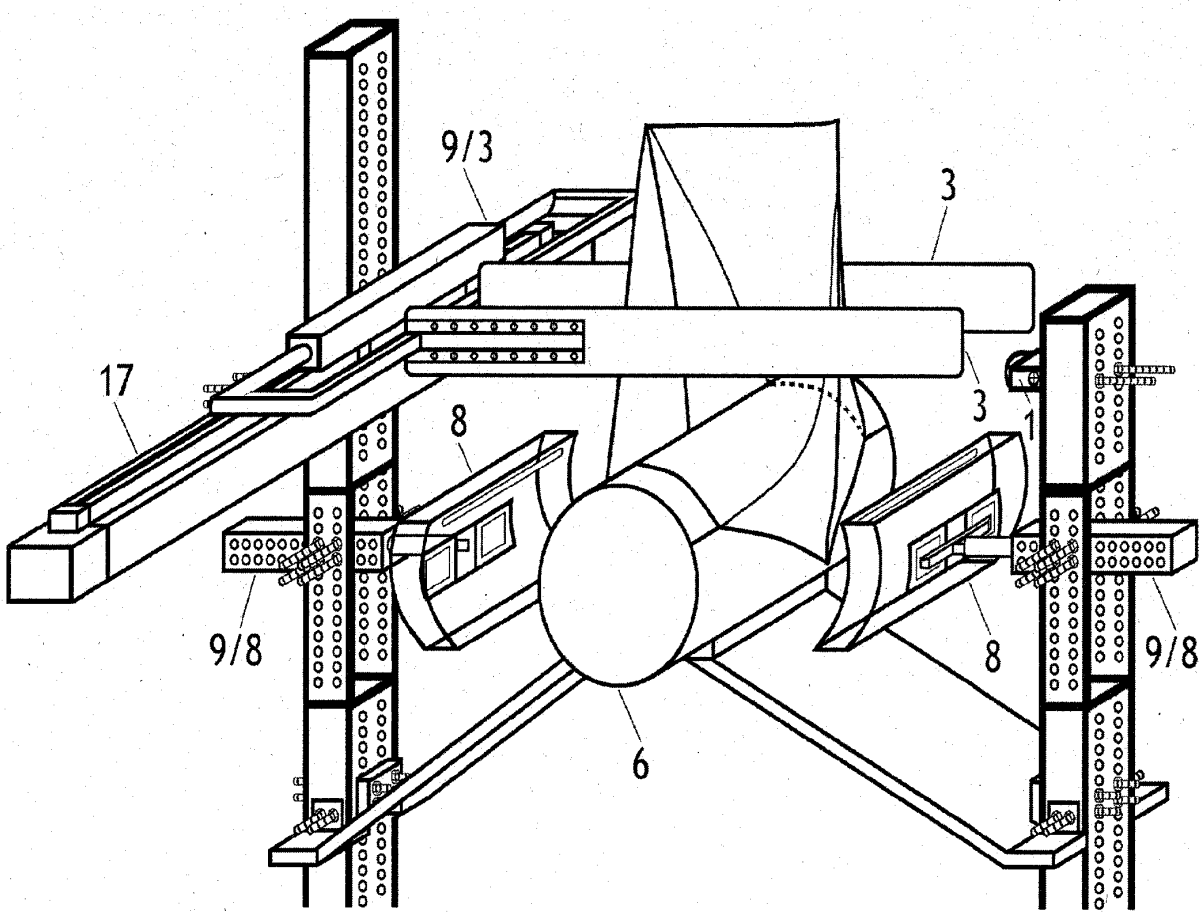


FIG20

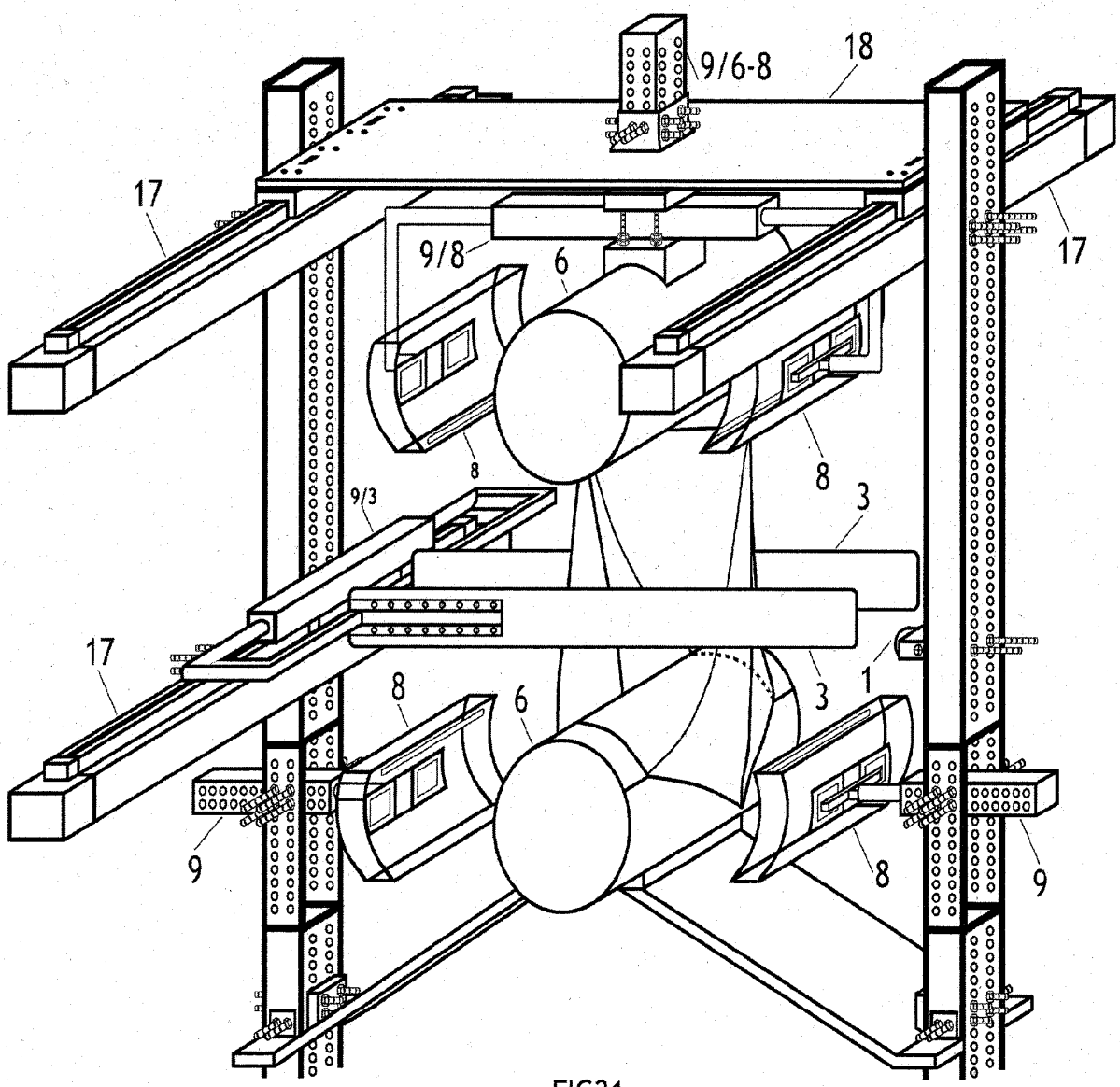


FIG21

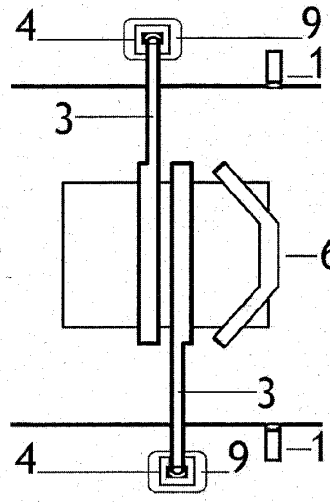


Fig22

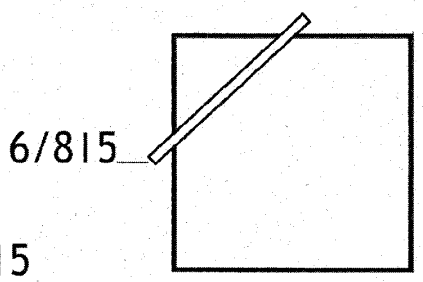


Fig23a

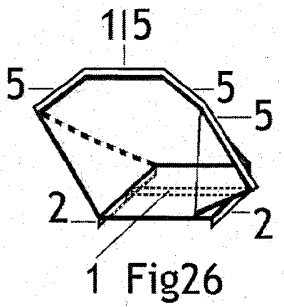


Fig26

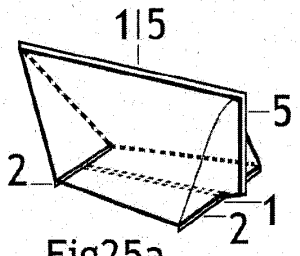


Fig25a

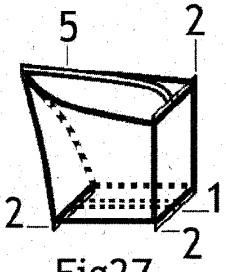


Fig27

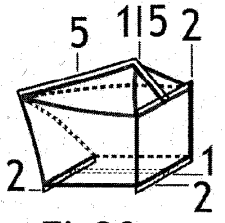


Fig28

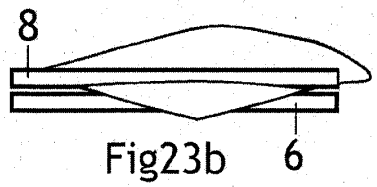


Fig23b

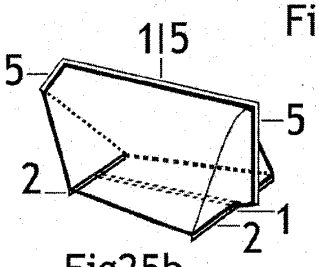


Fig25b

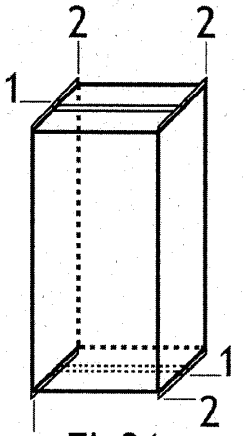


Fig31a

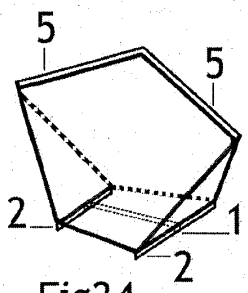


Fig24

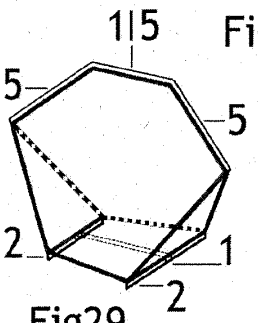


Fig29

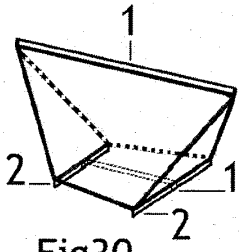


Fig30

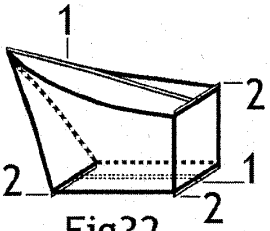


Fig32

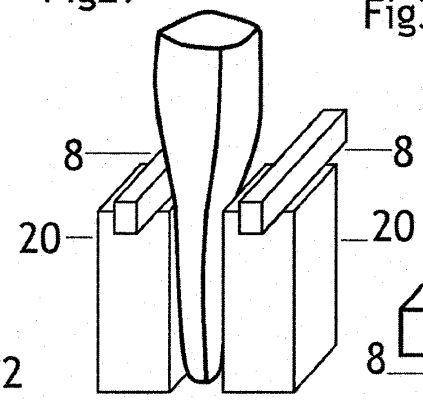


Fig34

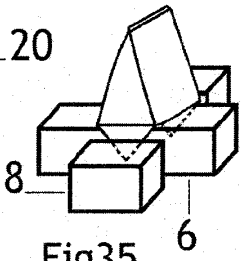


Fig35

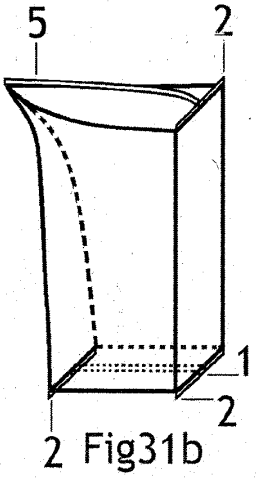


Fig31b

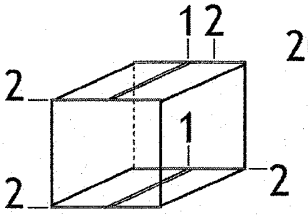


Fig33

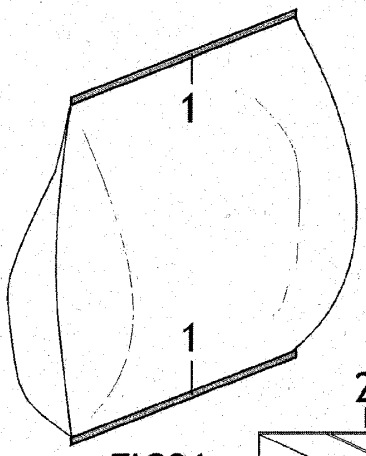


FIG36

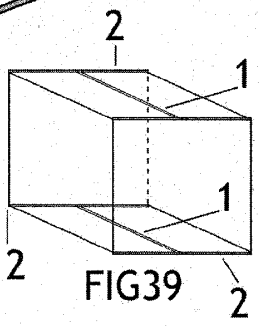


FIG39

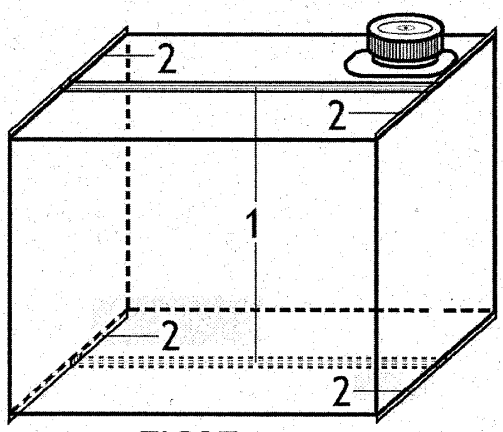


FIG37

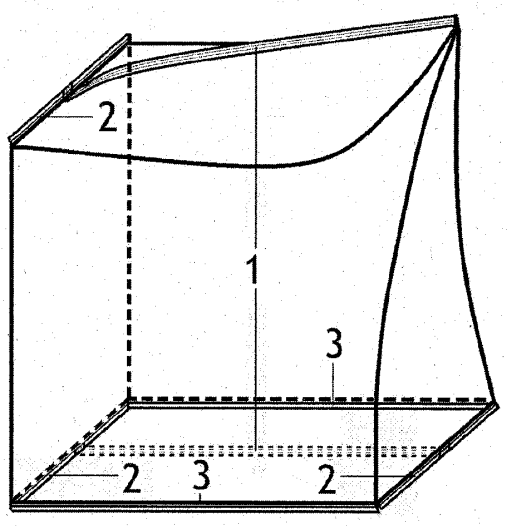


FIG40

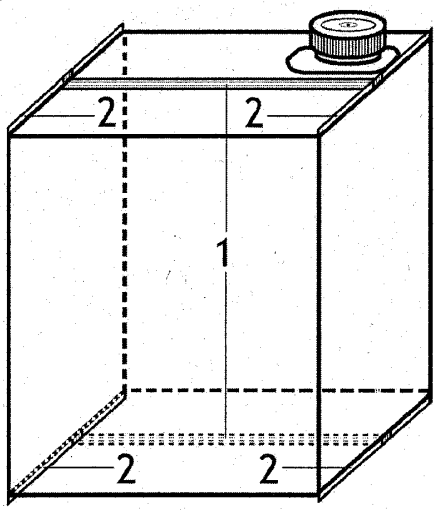
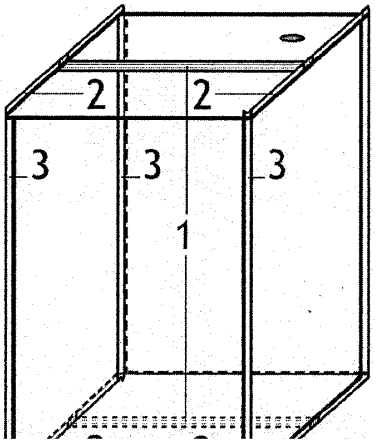
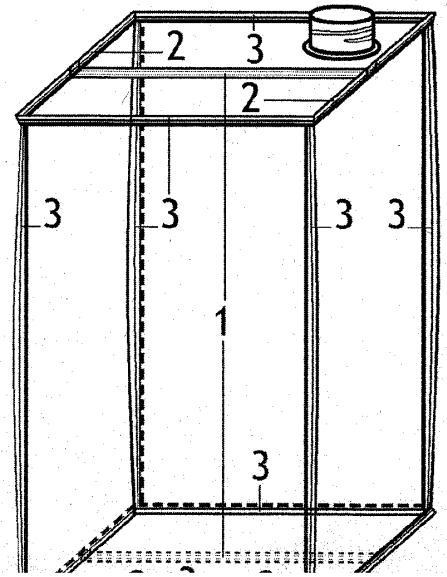


FIG38





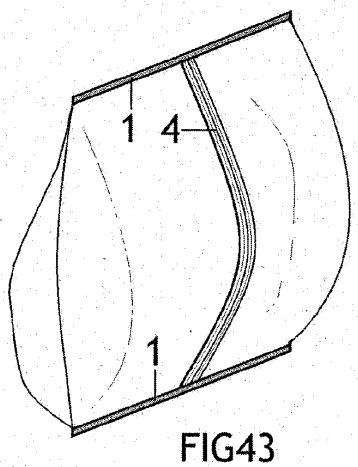


FIG43

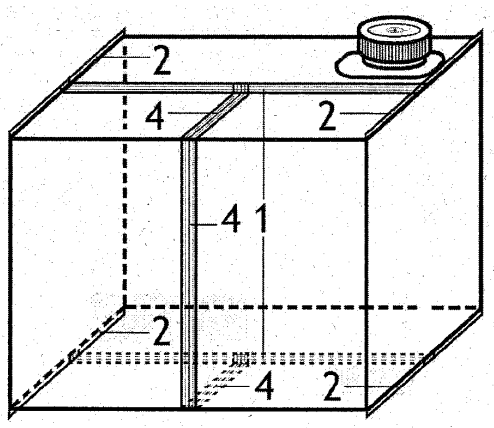


FIG44

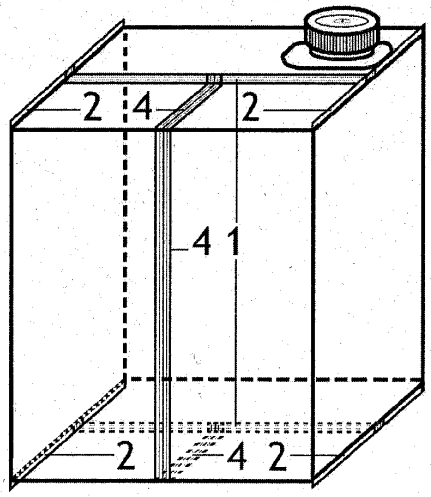


FIG45

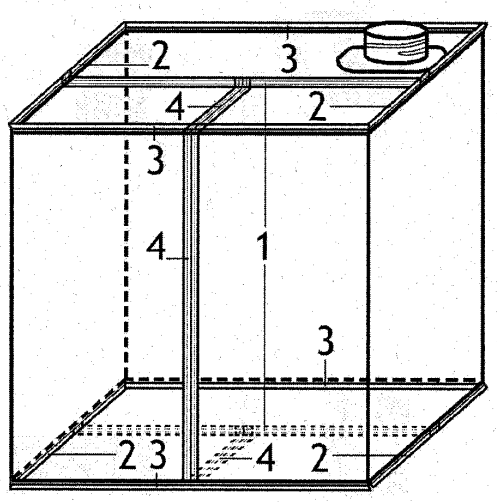


FIG47

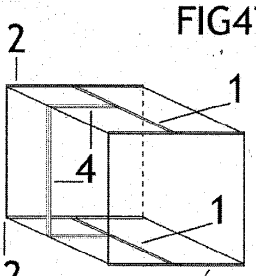
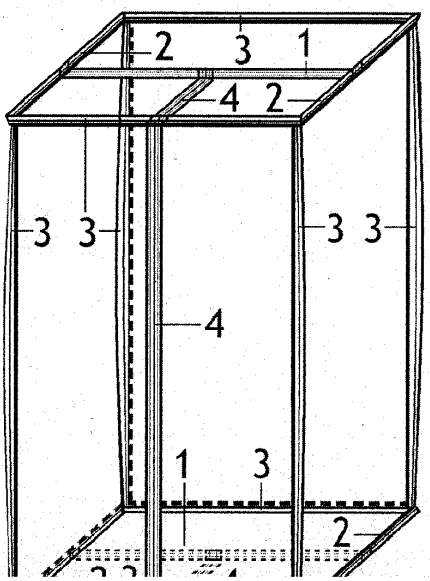
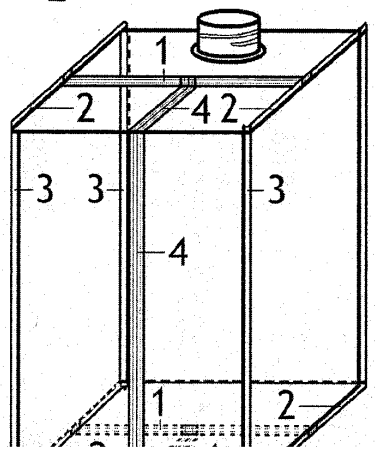


FIG46





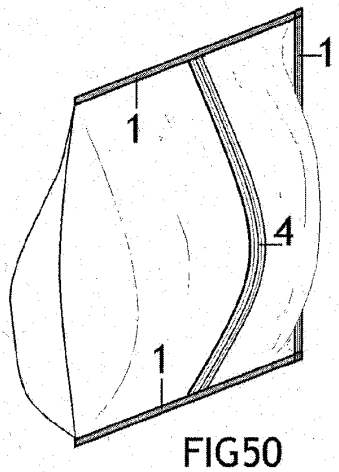


FIG50

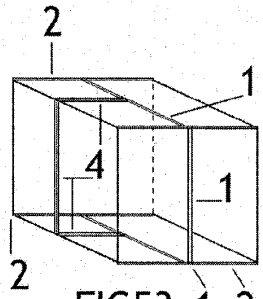


FIG53 1 2

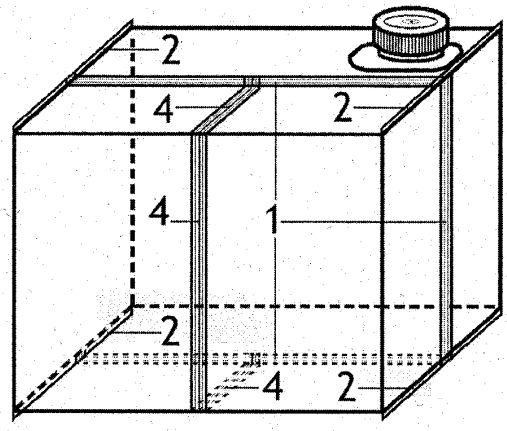


FIG51

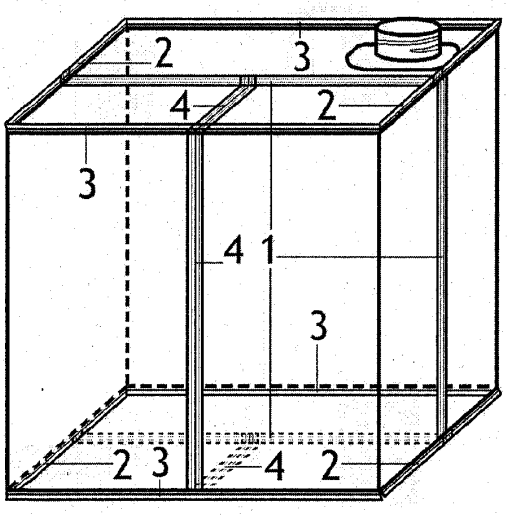


FIG52

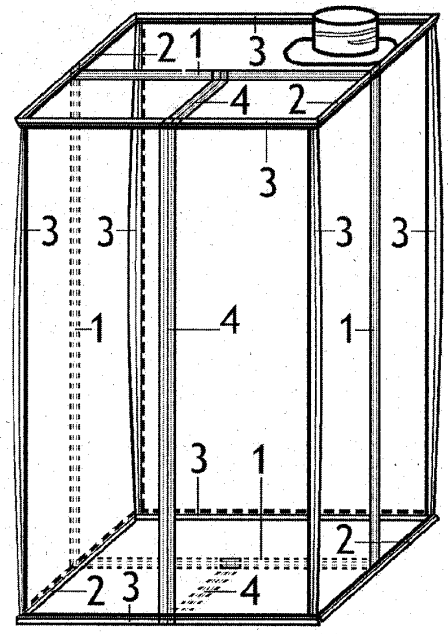


FIG57

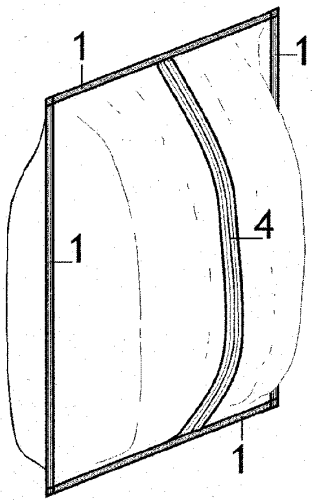


FIG54

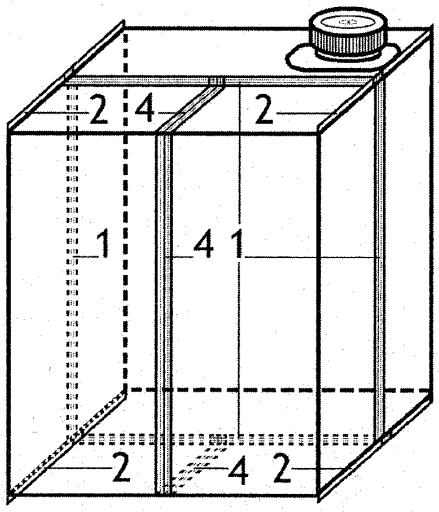


FIG55

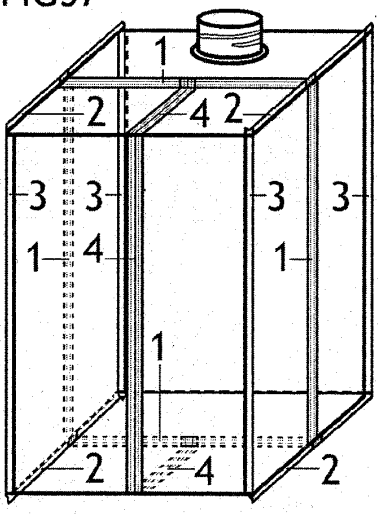


FIG56

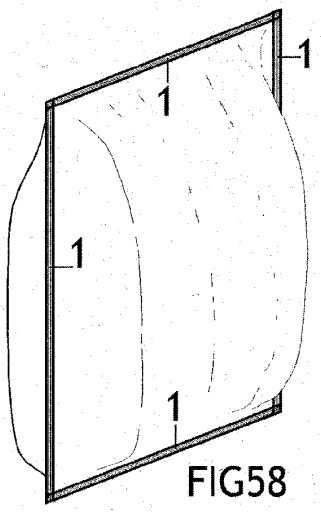


FIG58

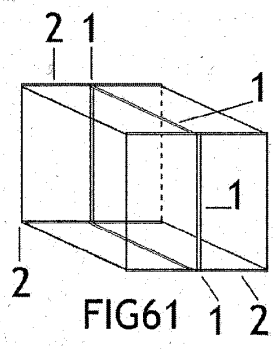


FIG61

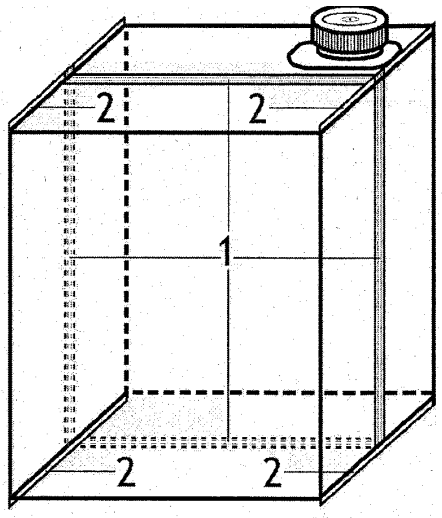


FIG59

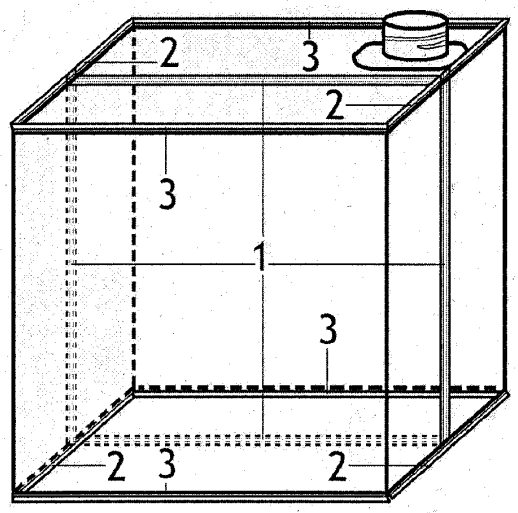


FIG62

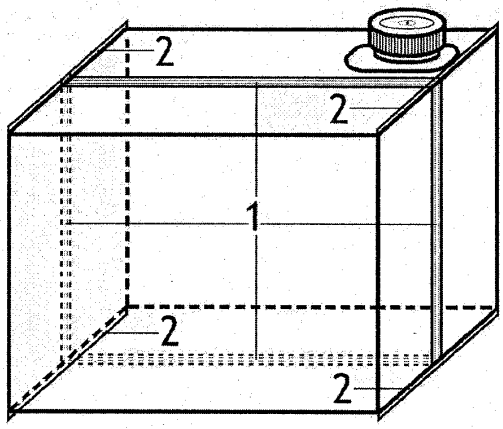


FIG60

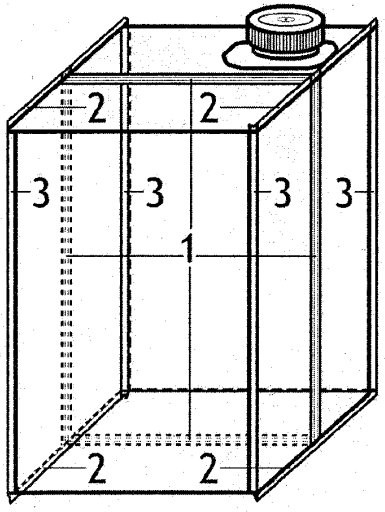


FIG63

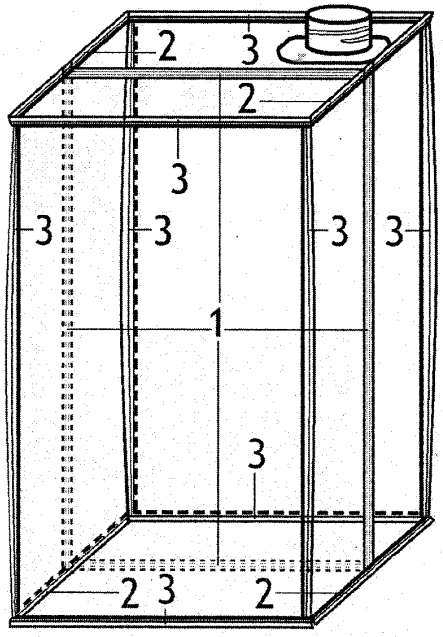


FIG64

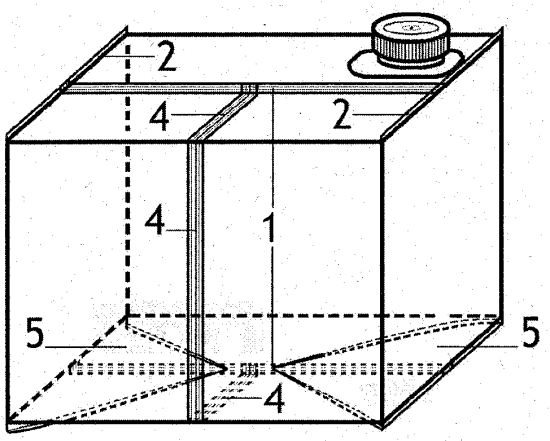


FIG65

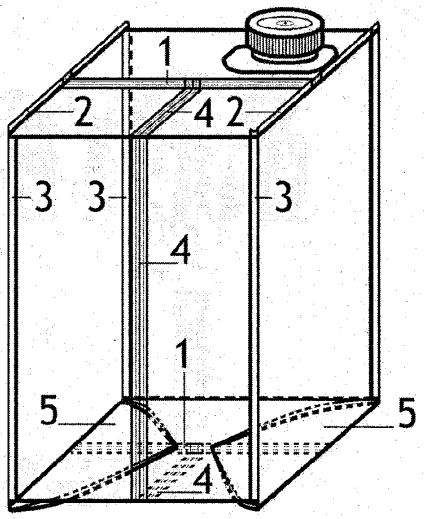


FIG66

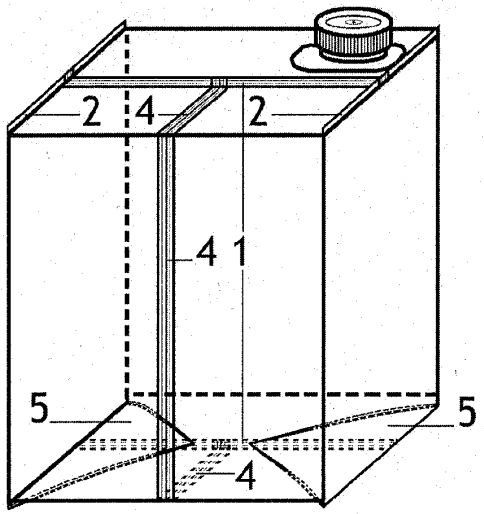


FIG67

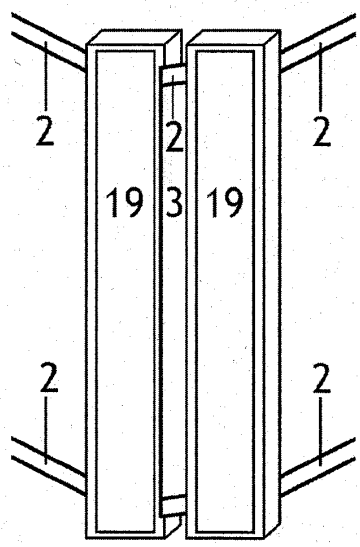


FIG68

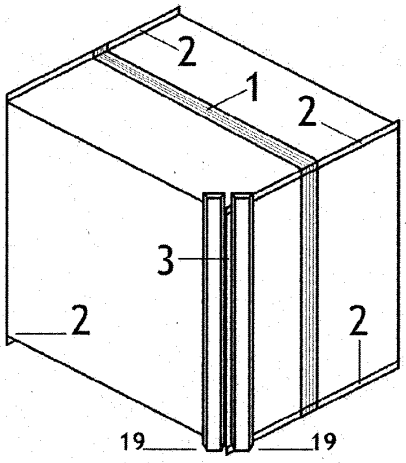


FIG69

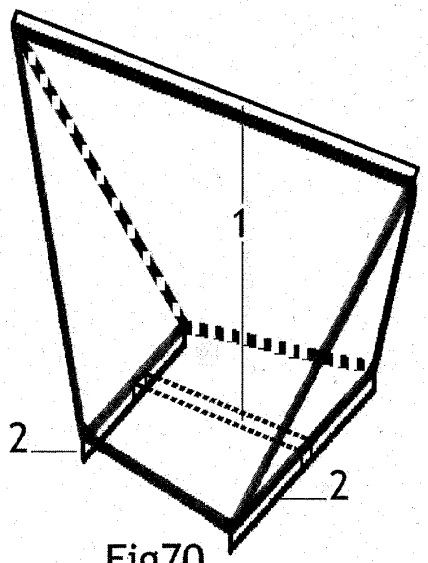


Fig70

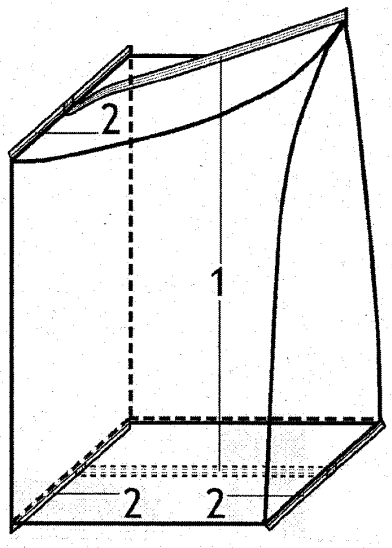


Fig71

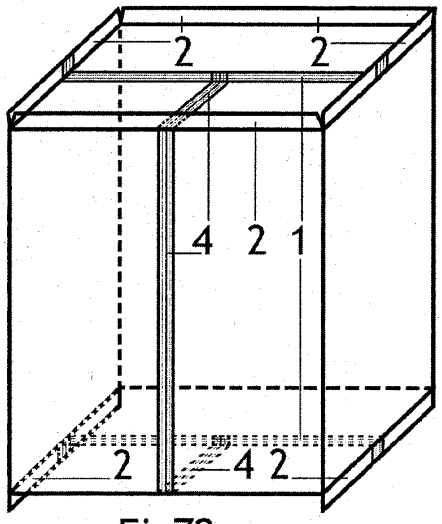


Fig72

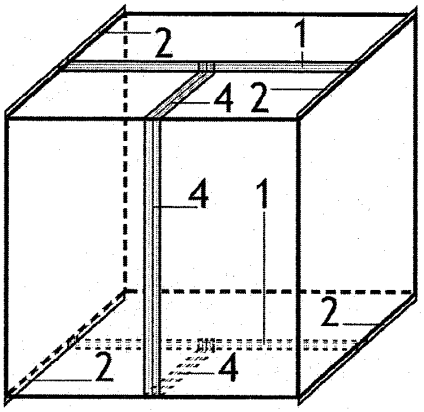


Fig73

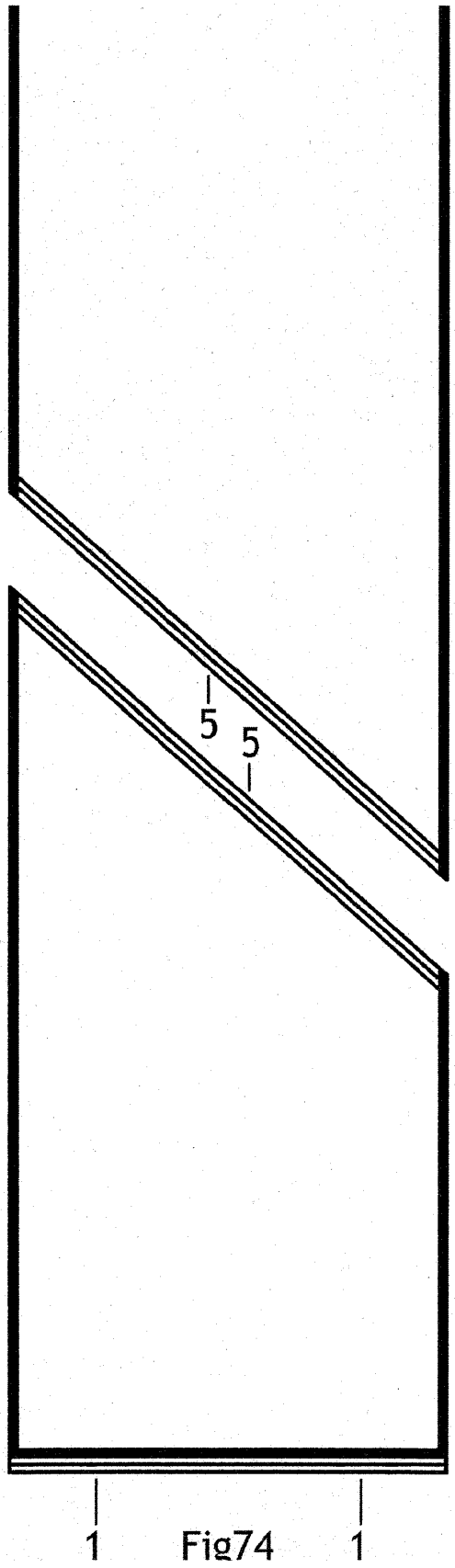


Fig74

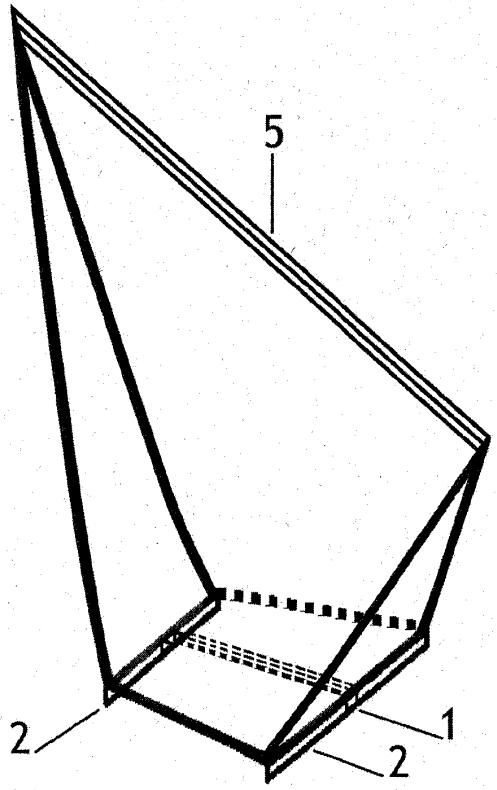


Fig75

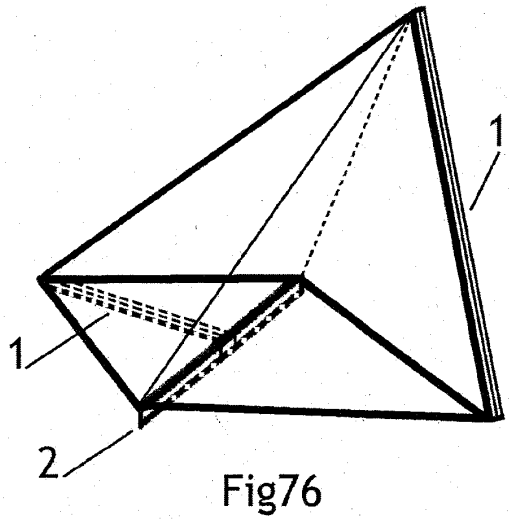


Fig76

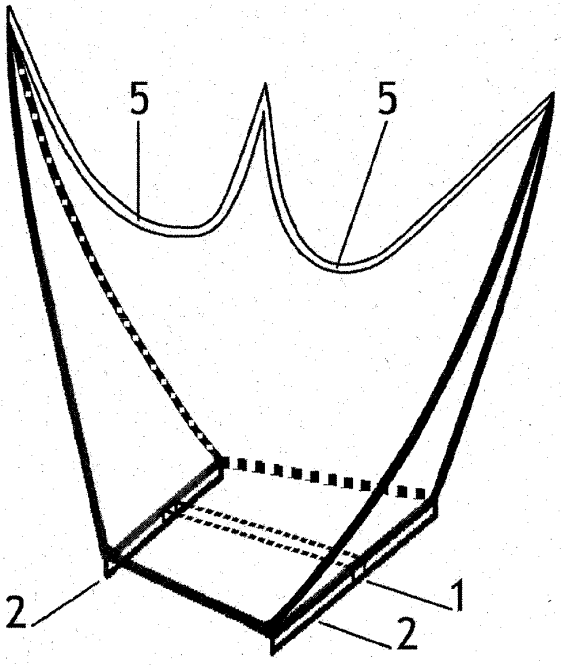


Fig77

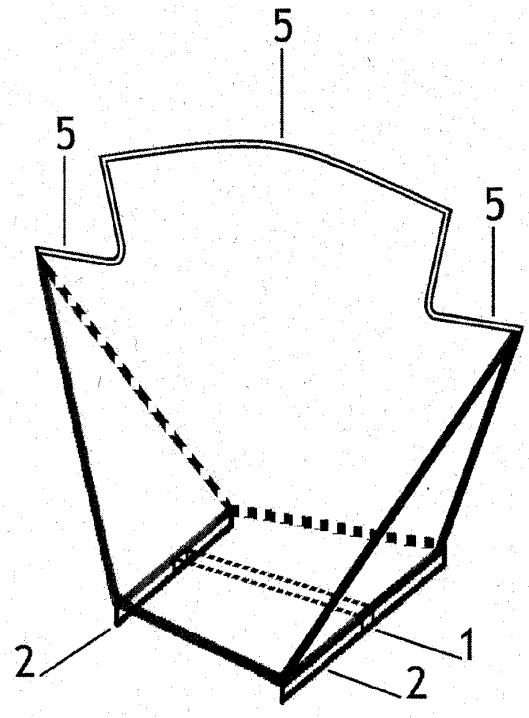


Fig79

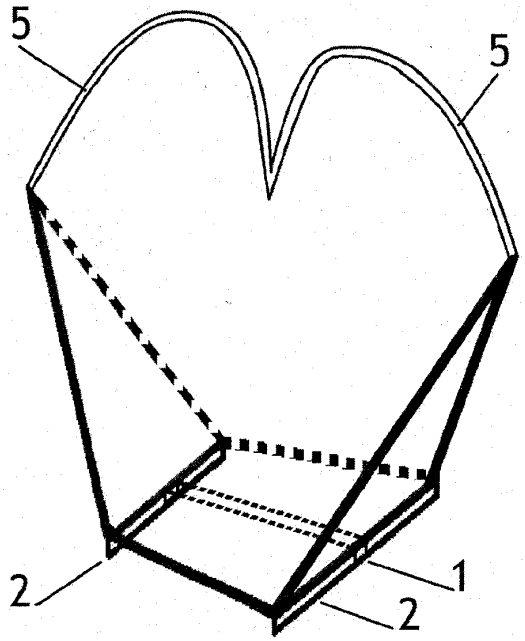


Fig78

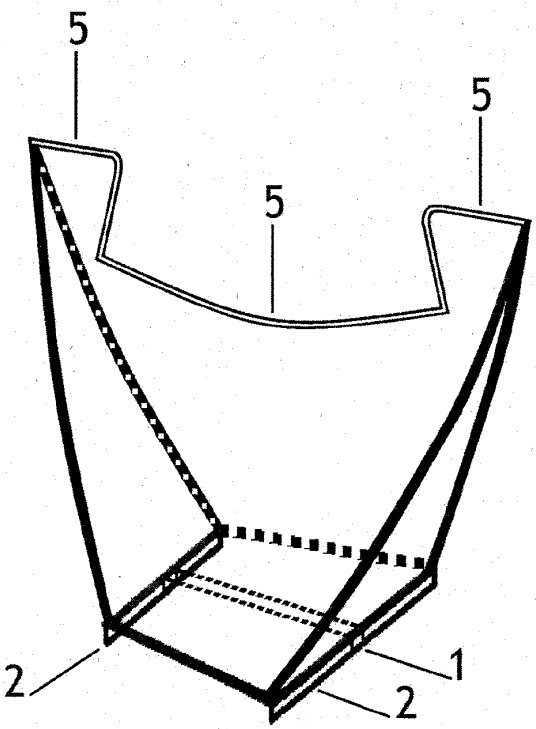


Fig80

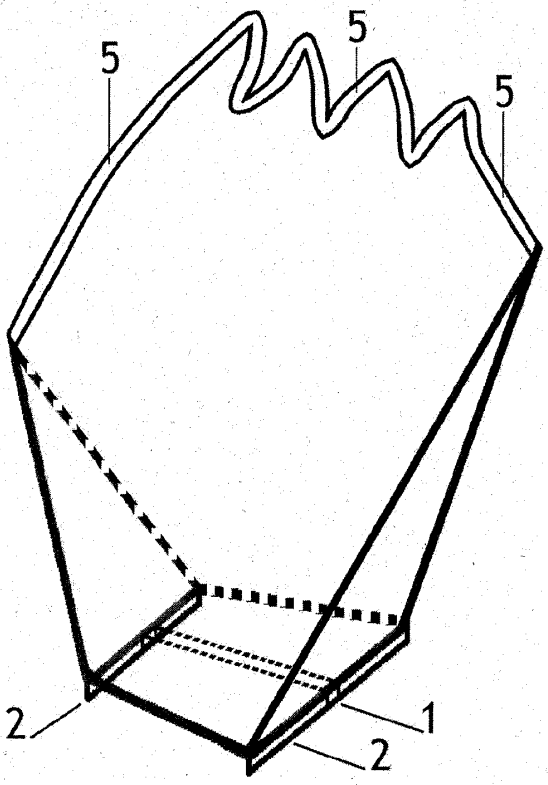


Fig81

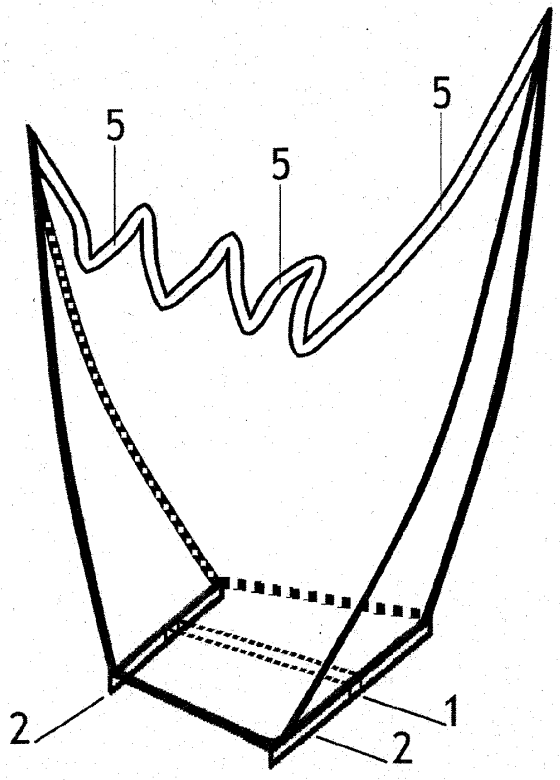


Fig82

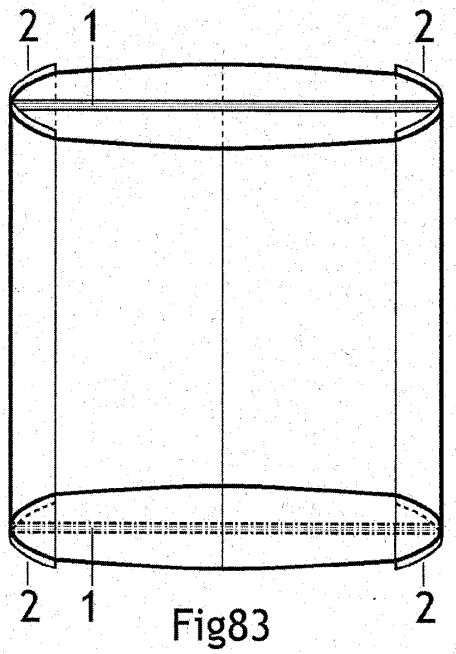


Fig83

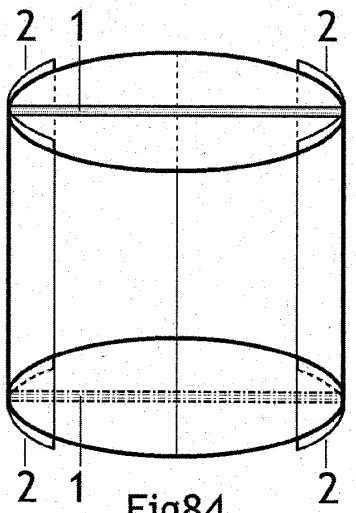


Fig84

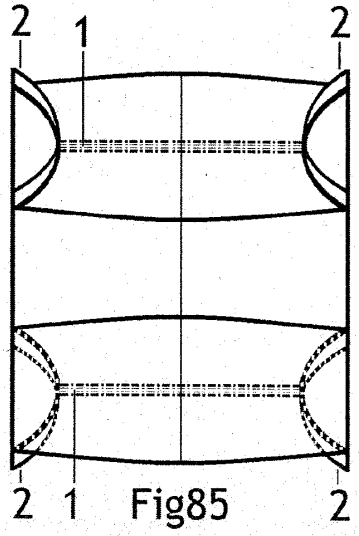


Fig85

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/000261

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65B, B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2008101358 A1 (LJUNGCRANTZ BILLY) 28/08/2008, abstract; claim 1; images.	1,108
A	EP 2308758 A1 (IASOPOR EQUIPAMENTOS DE EMBALAGEM UMIPESSOAL LDA) 13/04/2011, the whole document.	1,108
A	US 4750313 A (KAMMLER ING R ET AL.) 14/06/1988, the whole document.	1,108
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A	DE 102005015565 A1 (KRONES AG) 12/10/2006, abstract; claims; figures.	1,108

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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"O" document referring to an oral disclosure use, exhibition, or other means.
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18/02/2013	**(25/02/2013)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer V. Anguiano Mañero Telephone No. 91 3495538

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/000261

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	WO 9930972 A1 (DOMINGUEZ MARTIN FRANCISCO JAV) 24/06/1999, the whole document.	161
A	WO 9634804 A1 (MARTIN PETER JOHN) 07/11/1996, the whole document.	161
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Form PCT/ISA/210 (continuation of second sheet) (July 2009)

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PCT/ES2012/000261

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2012/000261

CLASSIFICATION OF SUBJECT MATTER

B65B3/02 (2006.01)
B65D77/06 (2006.01)
B65D5/00 (2006.01)