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

(11) **EP 2 517 972 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
31.10.2012 Bulletin 2012/44

(51) Int Cl.:
B65D 33/16 *(2006.01)*

(21) Application number: **12165782.9**

(22) Date of filing: **26.04.2012**

(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
Designated Extension States:
BA ME

(30) Priority: **29.04.2011 IT BO20110236**

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(54) **A clip for closing a bag**

(57) A clip is described for closing and keeping closed a container (4), such as for example a mesh bag containing clams, which clip (1, 10, 11, 100, 1000) is made of an inelastic plastic material and also shapes at least two tines (2, 3, 20, 30, 200, 300, 22, 33, 2001, 2002, 3000) which project from a base portion (5, 50, 500, 5000, 55) which connects them, the clip having an open configuration (A) in which the tines are distanced so as to enable a section of a bag (4) to be housed between the tines, and is deformable into a plurality of annular closure configurations (C), in which the tines are curved so as to define, together with the base portion, a circumscribed internal space (O) having a size which depends on the curvature of the tines, the clip being characterized in that the tines have such shapes that in each annular closure configuration (C), a curved tine engages the other, whereby maintaining the size of the circumscribed internal space (O).

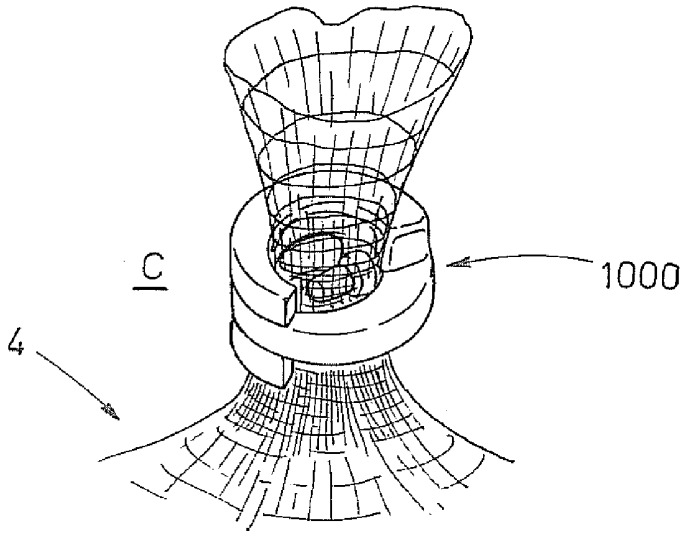

FIG. 6

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Description

[0001] The present invention relates to closing means for bags.

[0002] In more detail, the invention concerns clips for closing bags containing mollusc bivalves such as mussels and clams, etc.

[0003] In the present description, clips is taken to mean those clips used for closing bags, as this is now the common use of the term.

[0004] Often live bivalves are sold in bags to consumers.

[0005] In practice there are two ways of packing these molluscs.

[0006] In a first method, a preformed tubular net is used, made of a plastic material, initially quite limp (a sort of sock) which is inferiorly closed by a first clip, such as to define the bottom of the future pack; after which the tubular net is filled with a certain quantity of loose molluscs.

[0007] At this point, the mesh tube is stretched, by pulling upwards the second of the sock immediately above the part containing the molluscs, such that the net adheres tightly to the molluscs and crams them strongly up against one another.

[0008] This upper section is then closed by a second clip.

[0009] The reason why the sock is tightly stretched on the molluscs is because the final pack must force the molluscs strongly against one another with the aim of preventing their valves from opening.

[0010] In fact, when they are fished, the bivalve molluscs spontaneously close the valves, internally retaining water, and the water keeps the molluscs alive after they have been fished.

[0011] As the bivalve molluscs are sold live, their valves must as far as possible be prevented from opening after packing.

[0012] Thus the second clip also has the function of maintaining the net well stretched on the packed bivalves, apart from keeping the bag closed.

[0013] After applying the second clip, a third clip is applied to the tubular net, above the second, which third clip forms a further point of closure of the tubular net.

[0014] Lastly, the tubular net is cut between the second and third clips, such as to inferiorly define a closed mesh bag in which the molluscs are packed, with the third clip functioning's the first clip for inferiorly closing a next bag for molluscs, about to be formed.

[0015] The bag of the final pack is, clearly, no longer limp but is strongly stretched on the valves of the molluscs and is stretched thereby.

[0016] In a further mode, a type of bag is used, still quite limp, available on the market in a form in which the bottom is already closed (for example by stitching) and with an upper opening.

[0017] In this case, after the lower part of the bag has been filled with molluscs via the opening thereof, this bag too is stretched on the valves of the molluscs before application of the closing clip, for the reasons as explained herein above.

[0018] The clips at present used in the packs of bivalve molluscs is a metal staple, which in practice is a staple formed by a short metal segment, usually aluminium, in a U-shape, which receives a section of the bag, and is deformed by known dedicated apparatus that ring-close it by crushing such as to close the bag and keep it well stretched over the molluscs.

[0019] It is known that during the processing of the molluscs, before packing, the molluscs themselves might mix with small objects or fragments of metal which might then end up in the packs put up for sale.

[0020] These undesired metal objects can sometimes have fallen among the molluscs during the fishing operations, or could be parts of packing machines (for example screws or bolts) which have detached and become mixed up with the loose molluscs waiting to be packed.

[0021] A very widely felt need in the market of bivalve mollusc commerce is to be able to avail of packs that before being put up for sale can be subjected to a scan using metal detectors in order to check that among the packed molluscs there are not also undesired metal objects.

[0022] The use of metal clips confounds this operation, as they would produce false positives.

[0023] The market already provides plastic clips, i.e. not detectable by metal detectors, though they are not use in the specific sector of packing live bivalve molluscs.

[0024] These known plastic clips, in the initial open configuration, have substantially a U-shape, or a horseshoe shape, and conform two straight tines that project from a common curved tract connecting them.

[0025] To apply the known plastic clip to a bag the bag has to be inserted between the tines, which are then deformed by crushing, again using special and known apparatus, thus ring-closing the clip on itself such that one of its tines is superposed on the other.

[0026] While it is being deformed and curved, the tines of this known clip abut and slide against and on one another, i.e. they slide in such a way that one of the two bends upwards while the other bends downwards, such that they are not only parallel but also one above another, and define, together with the connecting tract, a closed configuration of the clip in which it takes on the shape of a "tarallo", i.e. an overlapping ring shape.

[0027] The known plastic clips exhibit a drawback which makes them poorly adapted for use in the technical sector of packing live bivalve molluscs.

[0028] As explained above, owing to the fact that the bag of the pack is stretched on the molluscs, the bag is stressed by reaction forces. This stress unloads on the closing clips (and also on the stitching if present).

[0029] If the known plastic clips were applied to the bags, the stress unloaded onto them would lead to a widening of the tines of the clip applied, and to the consequent separation of the clips from the bags, and the open-

ing thereof.

[0030] In fact, it is obvious that a plastic clip does not have the mechanical resistance of a metal clip.

[0031] Therefore the known plastic clip is unsuitable for closing or maintaining closed a bag for packing live bivalve molluscs, and naturally also for keeping them well packed on each other.

[0032] The aim of the present invention is to obviate the above-described drawbacks and others besides by making available a clip for closing and maintaining closed a container, such as for example the above-described bags, realised according to claim 1.

[0033] The disclosed clip is made of a plastic material, of an inelastic type, and conforms at least two tines which project from a base portion which connects them.

[0034] The clip exhibits an open configuration in which the tines are apart to enable receiving a section of the bag between the tines, and is destined to deform into a plurality of closed annular configurations, in which the tines are curved such as to define, together with the base portion, a circumscribed internal space having a size that depends on the curvature of the tines.

[0035] In the invention the tines have shapes that in every closed annular configuration at least a curved tine engages another such as to conserve the size of the respective circumscribed internal space.

[0036] The clip of the invention comprises at least three tines, of which at least a pair of prehensile tines comprising an upper prehensile tine and a lower prehensile tine, the first arranged above the second at such a distance that following the deformation of the clip, the third tine can be received interferingly between the first two.

[0037] When the clip is applied to the bag such as to close it and keep it stretched on the group of molluscs contained in the bag, it solidly presses the walls of the bag at a closure point and retains it in the circumscribed internal space.

[0038] In practice, the apparatus dedicated to application of the clips, not described herein because they are without the scope of the invention, bend the tines, curving them, so that they embrace a section of the bag which, as explained above, has been pulled upwards such as to place the bag in tension.

[0039] The degree of folding, which is correlated to the size of the circumscribed internal space, is a function of the dimensions and resistance offered by the section of the bag which is crushed at the point of closure.

[0040] Thus if the walls of the bag are thick, the size of the internal space will be greater with respect to a case in which the walls are thin and/or in part deformable.

[0041] Further, the clip has to solidly close and keep the bag stretched also in a case in which it is desired to apply a label, typically such as to indicate data relating to the product and/or commercial information, such as for example marks, which label is applied to the bag inserting a small end tail at the opening, at the point where the bag is to be closed, before applying the clip.

[0042] In practice, the proposed clip, when applied to close the stretched bag, self-adapts to the bag.

[0043] For this reason, following deformation thereof, it can be in various closed annular configuration, corresponding to different sizes, or dimensions of the circumscribed internal space in which the walls of the section of the bag are crushed at which it is closed.

[0044] Given that in the invention, independently of whatever the dimensions of the circumscribed internal space is in the various annular configuration of the clip, the tines engage against one another, then unlike the prior art the invention is able to provide a clip that resists the above-described stresses that the tensed bag unloads on it.

[0045] In fact, as the tines tend to maintain the dimensions of the circumscribed internal space thanks to the engagement of a tine to another, the stress pressures do not open them and the bag, even with the passage of time, remains stretched on the valves of the molluscs and keeps them crushed against each other.

[0046] After the opening of the bag and the extraction of the molluscs, it is advantageously possible to recycle the net bag together with the clip because both are made of plastic; thus the expensive step of separation between the bag and the clip, necessary using metal clips, can be avoided.

[0047] The clip is preferably made in a single body and of polycarbonate, a non-toxic material which has good plasticity characteristics.

[0048] In the following various examples of clips will be detailed, with the aim of the accompanying tables of drawings, in which:

- figure 1 and figure 2 are axonometric views of an example of a clip respectively in the open configuration and the deformed closed configuration;
- figure 3 and figure 4 are axonometric views of a second example of a clip, respectively in the open configuration and the deformed closed configuration;
- figure 5 is an axonometric view of a further example of a clip in the open configuration;
- figure 6 is a schematic view of a closed mess bag closed by a clip of the invention;
- figure 7 and figure 8 are axonometric views of a clip according to the invention, respective in the open configuration and in the deformed closed configuration;
- figure 9 is a schematic section view of the clip of the invention in the open configuration;
- figure 10 is a partial schematic view in section of the clip of the invention, representing the engaging modes of the tines, when the clip is in the closed configuration;
- figure 11 is an axonometric view of a further example of a clip in the open configuration; and
- figure 12 is a view from above in plan view of the clip of the preceding figure.

[0049] The figures illustrate possible examples of clips.

[0050] Each clip forms at least two tines that protrude from a base portion connecting them.

[0051] The clip has an initial open configuration A, which is the configuration in which it is removed from the mould, or in any case in which it is presented at the end of the manufacturing process. The open configuration A is to be understood as a configuration of the clip prior to its deformation and as the configuration exhibited by the clip before being fixed to the container, which for the purposes of the present will be assumed to be a mesh bag 4, for ease of description.

[0052] In this open configuration A the tines are distanced from one another and define, together with the base portion, an open housing K for accommodating the bag 4 to be closed.

[0053] In more detail, the open housing K is defined by the internal lateral edges of the tines and from the internal edge (or face) of the base portion (better described hereinafter in the specification of different embodiments).

[0054] At a practical level, this open housing K is the space between the tines, when the clip is in the open configuration A, in which the bag 4 is yet to be inserted between the tines.

[0055] After a section of the bag 4, for example in proximity of the rim of its opening, is received between the tines, the bag 4 can be closed by means of deformation of the clip, using dedicated equipment, not described herein as falling without the object of the invention.

[0056] Thanks to the deformation of the tines which gives the clip the form of a small ring that compresses and folds and crushes the walls of the section where the bag 4 is to be closed, defining therein a blocking point, the closure of the bag 4 itself is attained (see figure 6), and it can also be guaranteed that it remains tight and presses the molluscs against one another.

[0057] In the following, the conformations the tines assume will be described and, consequently, the manner in which they engage with each other, following the deformation of the clip, i.e. in its annular configuration C.

[0058] In practice, as a result of their deformation, the tines of the clip bend in a hook-shaped or semi-annular shape, or the like.

[0059] It is clear that when deformation of the clip is referred-to in the present description, it refers to the deformation that occurs with the folding of its tines towards the inside to define the deformed closed configuration C.

[0060] Note that in the present description the terms 'upper' and 'lower' refer to the operation where the clip is normally applied to the bag 4 i.e. with the tines horizontal and in any case as shown in figure 6.

[0061] In addition, when using the terms 'internal' and 'external' reference is made to the circumscribed internal space O, whether the clip is closed in the annular configurations C, or the open housing K, if the clip has not yet been deformed. The first example of a clip is shown in figures 1 and 2, in which it can be seen that when the clip 1 is in the open configuration A, it can be substantially horseshoe-shaped, while when it is in one of its multiple closed configurations C it clearly has the shape of a closed loop.

[0062] The tines 2, 3 of the clip 1 in the open configuration A are straight.

[0063] The clip 1 comprises a first tine which is a prehensile tine 2 and in turn comprises: an upper element 21 and a lower element 22, joined at a respective outer side edge 23, 24 by a joining wall 25, which is also a part of the first tine 2.

[0064] More in detail, the above-mentioned upper and lower elements 21, 22 can be flat, as shown in the figures, and the second tine 3 can comprise, in turn, a flat insertion element 3.

[0065] The upper and lower elements 21, 22 of the first tine 2 are inclined with respect to the joining wall 25 so as to define an undercut cavity 26 suitable for receiving the insertion element 3.

[0066] In practice, as a result of the deformation of the clip 1, see figure 2, the insertion element is inserted into the undercut cavity 26.

[0067] The longer the portion of the insertion element 3 which enters the cavity 26 following the deformation of the clip 1, the more the tines 2, 3 are curved (i.e., hook-shaped) and the smaller the circumscribed inner space O, suitable for containing the walls of the bag 4.

[0068] Thus, the different possible closed configurations C of the clip 1 depend on how far the insertion element 3 can be inserted in the cavity 26; this, in turn, depends on the bag 4 which is to be closed and held tight.

[0069] When the insertion element 3 is in the cavity 26, the face of its outer lateral edge 32 is abutting the internal face 26 of the joining wall 25, so that the prehensile tine 2 engages the second tine 3, covering it externally.

[0070] The undercut cavity 26 has such dimensions as also to involve the insertion element 3 by interference.

[0071] Further, the engagement between the prehensile tine 2 and second tine 3 is even stronger if the insertion element 3 has a thickness that increases from its internal lateral edge (not directly visible in the figures) towards the opposite external lateral edge 32, so that the insertion element 3 itself has a complementary shape to the undercut 26.

[0072] A feature of the clip 1 is constituted by the fact that the tine 2 which conforms the housing is the prehensile tine, which in the closed annular configurations C covers the outside and engages and abuts the second tine 3; thus the second tine 3, which instead remains internal, is the one that is directly stressed, and in any case is stressed more greatly stressed, by the bag in tension.

[0073] This stress on the internal tine 3 (the second tine) is however, compensated for by the engagement of the tine prehensile 2 (first tine).

[0074] This same technical concept can be implemented in other versions of the clip different from that of this first example, which however include a tine with a pre-

hensile upper element and the lower member joined at a external lateral edge by a joining wall such as to define a C-shaped housing (i.e. having a C-shaped cross-section) suitable for receiving the second tine, with the joining wall which, following the deformation of the clip, abuts and externally covers the second tine.

[0075] When in the present description reference is made to the C-shape, naturally it is from the point of view used in the figures and this will also be the point of view used when referece is made to the "upturned" C.

[0076] In order to facilitate the insertion of the flat element of the second tine 3 into the undercut 26, the flat element 3 can be tapered towards the free end 33 thereof.

[0077] Additionally, the base portion 5 joining the tines 2, 3 can conform a projection 6 arranged between the tines 2, 3 (that is, extending towards the circumscribed internal space O or towards the open housing K of the clip 1, depending on which configuration it assumes).

[0078] This primarily allows a firm anchoring of the clip 1 to the mesh bags 4 because when the clip 1 is in the closed configuration C, the projection 6 can be inserted between the meshes of the net and obstruct the separation of the clip 1 from the bag 4 which it closes.

[0079] Further, larger clips can be realised, i.e. with the tines that in the open configuration are spaced further apart.

[0080] In fact, on the one hand it is preferable that the tines are distant in the open configuration A of the clips 1 (i.e. with a wide common portion 5), to facilitate the insertion between the tines of the section 4 of the bag to be closed; while on the other hand, this might lead, in some cases, to defining a lower limit for the dimensions of the circumscribed internal space 0, that is, a minimum width defined by the maximum curvature that the tines can have.

[0081] However, by using the projection 6, even in the case of tines initially very far apart, it is possible in any case to obtain a very small internal space 0, following the deformation of the clip, due to the fact that the projection 6 occupies a part of the internal space O.

[0082] The projection 6 can for example be conical or cylindrical, pointed, bevelled, etc.

[0083] The projection 6 described here for the first example can also be present in the other examples, and in the clip 1000 of the invention, and will not be further described herein below.

[0084] The clip 10 of the second example is illustrated in figures 3 and 4, and it too can have a horseshoe shape 20, 30, with straight tines, when it is in the initial open configuration A.

[0085] It is in part similar to the clip 1 of the first example, and therefore will be described starting from this, but it has some different aspects that make its operation characteristic.

[0086] In the second example, the first tine is a receiving tine 20, the upper and lower flat elements 210, 211 whereof are united by the joining wall 250 at the respective internal lateral edge 230, 240 to define a housing for the second tine 30 which includes an undercut cavity 260, which in contrast to that of the first embodiment is in this case directed towards the outside.

[0087] Differently to the previous example, it is the second tine 30 of the clip 10 that acts as a prehensile tine for engaging to the other tine 20.

[0088] In fact, following the deformation of the clip 10, the tines are bent towards one another, with the flat element 30 of the second tine inserted into the cavity 260 and abutting with the outer surface 270 of the joining wall 250, covering it externally in various possible closed annular deformed configurations C of the clip 10.

[0089] The external surface 270 of the joining wall 250 is external with respect to the above-mentioned internal space O (or relative to the open housing K) but is internal of the undercut cavity 260.

[0090] Also in this case, the curvature and therefore the length of the tract of second tine 30 inserted in the cavity 260 determines the size of the circumscribed inner space O, which size is maintained by the engagement between the tines 20,30.

[0091] The second tine 30, when curving, can engage the first tine 20, which is also curved, covering and abutting the joining wall 250 and covering it externally.

[0092] In this case, is the first tine 20 and, in particular the joining wall 250 thereof, to be immediately and most affected by the stress of the stretched bag 4 and is the second tine 30 which engages the first from outside, at the outer surface 270 of the joining wall 250, preventing stress.

[0093] The second different aspect from the previous example is related to the idea of causing the thickness of the flat element of the second tine 30 to grow from its external lateral edge opposite to the internal lateral edge 340, so that the flat element 30 has a complementary shape with respect to the undercut housing 260.

[0094] The clip 10 can iunclude a receiving tine that has the shape of an upturned "C".

[0095] In practice, clips 10 can be realised in which the first receiving tine 20 has an upturned-C-shaped cross section but does not have an undercut cavity.

[0096] The flat element 30 of the second tine can be tapered towards the free end 330.

[0097] In general, variants can be provided of the first and second examples, having in common the fact that the second tine comprises a flat element and the fact that the first tine comprises an flat upper element arranged above the lower flat element at a distance there-from that is such that in the closed configuration C of the clip, the flat element of the second tine is interferingly received between the upper member and the lower member of the first tine. According to this aspect, the flat element of the second tine is in a median plane with respect to the plane containing the flat upper and lower elements. Furthermore, the thickness of the flat element of the second tine can vary in different ways between the internal lateral edge and the opposite external lateral edge thereof.

[0098] A further example is represented in figures 11

and 12, where the clip 100 can be seen in the open configuration A, in which it has a horseshoe shape, with straight tines 200, 300, and in a closed annular configuration in which it has already been deformed.

[0099] In this case, the first tine is a female tine and the second tine is a male tine 300; the female tine comprises a sleeve 200 provided with a cavity 2600 having an opening 261 at the free end 280 of the female tine, which cavity 2600 is suitable for receiving the male tine 300.

[0100] In this case, when the clip 100 is deformed into a given ring configuration C, the engagement which maintains it constantly in the assumed deformed shape develops between the external lateral surface 2700 of the cavity 2600 and the surface of the external lateral edge 3200 of the male tine 300, which, preferably, comprise a respective roughened surface.

[0101] The roughened surfaces, which can each include a knurling, are arranged such as to adhere to one another following insertion of the male tine 300 in the sleeve 200 of the female tine.

[0102] The cavity 2600 of the sleeve 200 of the female tine may be large enough to interferingly accommodate the male tine 300.

[0103] The male tine 300 can comprise a flat inserting element, for example tapered in the direction of a free end thereof, such as to facilitate its insertion into the cavity 2600 of the sleeve 200.

[0104] The examples mentioned up to this point have in common, following the deformation of the clip, that one of the tines engages the other by abutting a respective abutment surface, and externally covering the abutment surface.

[0105] In the first example, the abutment surface is the external lateral edge 32 of the second tine 3; in the second example it is the external lateral surface 270 of the joining wall of the first tine 20; while in the third it is the external lateral edge 3200 of the second tine.

[0106] A fourth example is illustrated in figure 5, in which the clip 11 is shown in its deformed ring configuration C.

[0107] This clip 11 has a first prehensile tine 22 that is coplanar with the second tine 33, with the clip 11 which, following the deformation thereof, assumes a closed configuration C in which it has a spiral development, with the prehensile tine 22 abutting and externally covering the second tine 33, and by doing engages it.

[0108] The prehensile tine 22, the base portion 5 and the second tine 33 of the clip 11 are defined in a single piece having a cylindrical shape.

[0109] In its open configuration A, the clip 11 can have a horseshoe shape. The clip 1000 of the invention is shown in figures 7, 8, 9 and 10.

[0110] The clip 1000 of the invention has at least three tines 2001, 2002, 3000, of which at least a pair of prehensile tines comprising a prehensile upper tine 2001 and a lower prehensile tine 2002, the first arranged above the second at a distance such that, as a result of the deformation of the clip 1000, the third tine 3000 can be received with interference between the first two.

[0111] Preferably, as shown in particular in figures 9 and 10, the thickness of the engageable tine 3000, decreases from the internal lateral edge 3012 to the external lateral edge 3013, and instead the thickness of the tines prehensile 2001, 2002 grows between the respective internal lateral edge 2011 , 2012 and the respective external lateral edge 2111, 2112, so as to have the advantages of complementarily-shaped engagement between the space defined by the prehensile tines and the third tine.

[0112] However in general the thickness of the tine engageable 300 and the thickness of each of the two prehensile tines 2001, 2002 can vary in different ways between the respective internal lateral edge 3012, 2011, 2012 and the respective external lateral edge 3013, 2111, 2112 opposite the internal edge. The tines 3000, 2001, 2002 of this embodiment may be tapered towards the free end thereof.

[0113] From the above description, it can be understood that a container 4 closed by at least one clip 1000, according to the invention, and deformed into an annular closed C, is a package in which the molluscs are maintained pressed against one another so that the valves thereof do not open, and able to give a good guarantee to the consumer that the contents have not been manipulated following closure. The pack is also suitable for scanning by metal detectors without giving false positive signals.

[0114] The above has been described by way of non-limiting example, and any constructional variants are understood to fall within the protective scope of the present technical solution, as claimed in the following.

Claims

1. A clip for closing and keeping closed a container (4), such as for example a mesh bag containing clams, which clip (1, 10, 11, 100, 1000) is made of an inelastic plastic material and also shapes at least two tines (2, 3, 20, 30, 200, 300, 22, 33, 2001, 2002, 3000) which project from a base portion (5, 50, 500, 5000, 55) which connects them, the clip having an open configuration (A) in which the tines are distanced so as to enable a section of a bag (4) to be housed between the tines, and is deformable into a plurality of annular closure configurations (C), in which the tines are curved so as to define, together with the base portion, a circumscribed internal space (O) having a size which depends on the curvature of the tines, the clip being **characterized in that** the tines have such shapes that in each annular closure configuration (C), a curved tine engages the other, whereby maintaining the size of the circumscribed internal space (O), and the clip comprises least three tines, of which at least a pair are prehensile tines comprising an upper prehensile tine (2001) and a

lower prehensile tine (2002), the first being arranged above the second at such a distance that, upon a deformation of the clip (100), the third tine (3000) can be housed with interference fit between the first two.

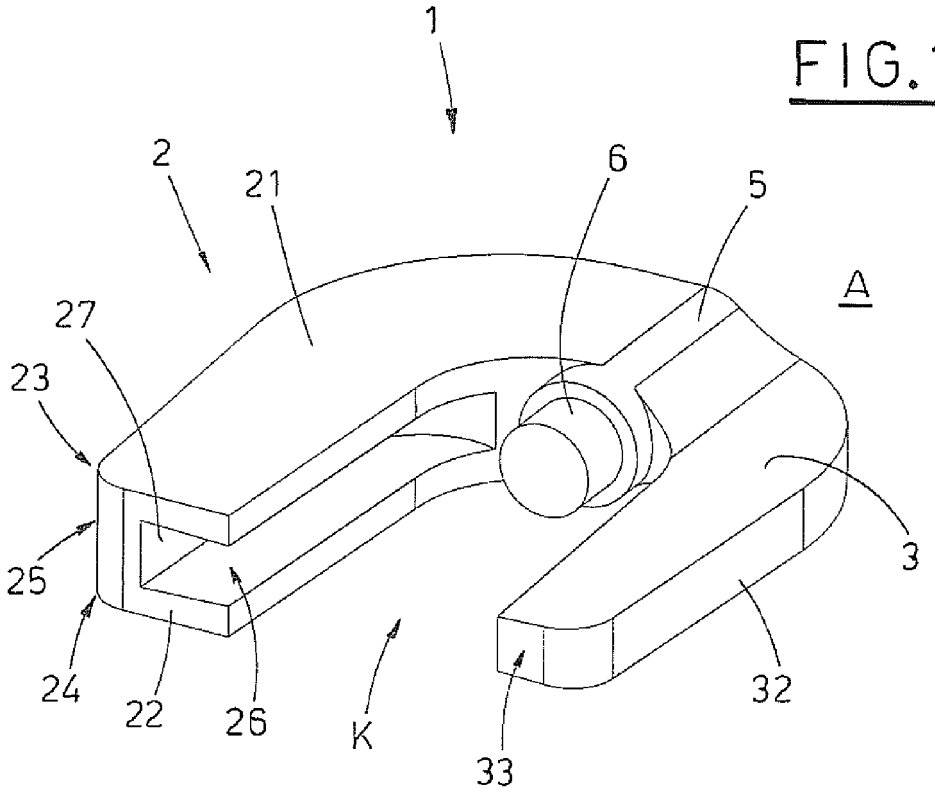
2. The clip of the preceding claim, wherein the thickness of the third tine (300) and the thickness of each of the two prehensile tines (2001, 2002) vary between the respective internal lateral edge (3012, 2011, 2012) and the respective external lateral edge (3013, 2111, 2112) opposite the internal lateral edge (3012, 2011, 2012).

3. The clip of any one of the preceding claims, realised in a single body made of polycarbonate.

4. The clip of any one of the preceding claims, wherein the portion of base (5, 50, 500, 5000, 55) which joins the tines shapes a projection (6) arranged between the tines.

5. A package comprising a container (4) that is closed by means of at least a clip (1, 10, 11, 100, 1000), as in any one of the preceding claims, in an annular closure configuration (C).

FIG.1



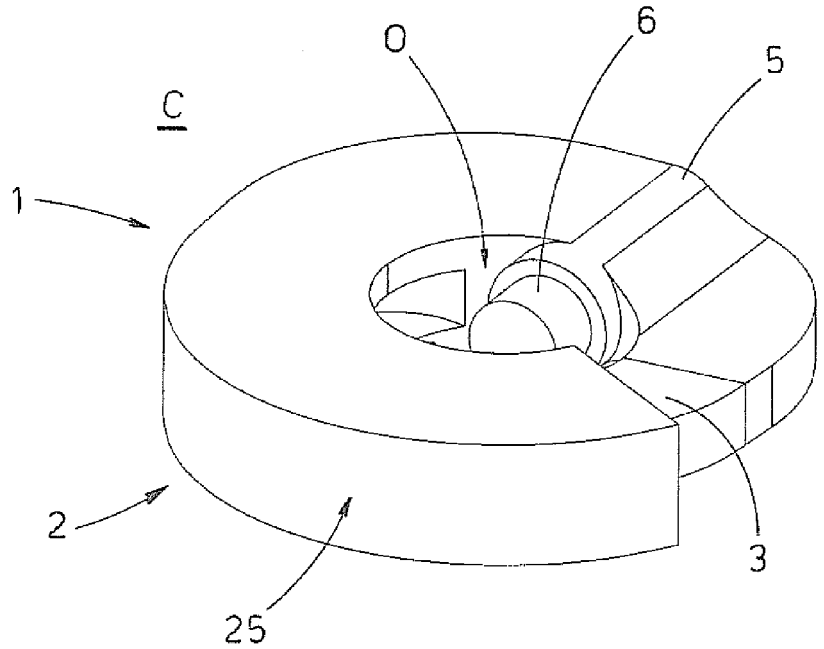


FIG.2

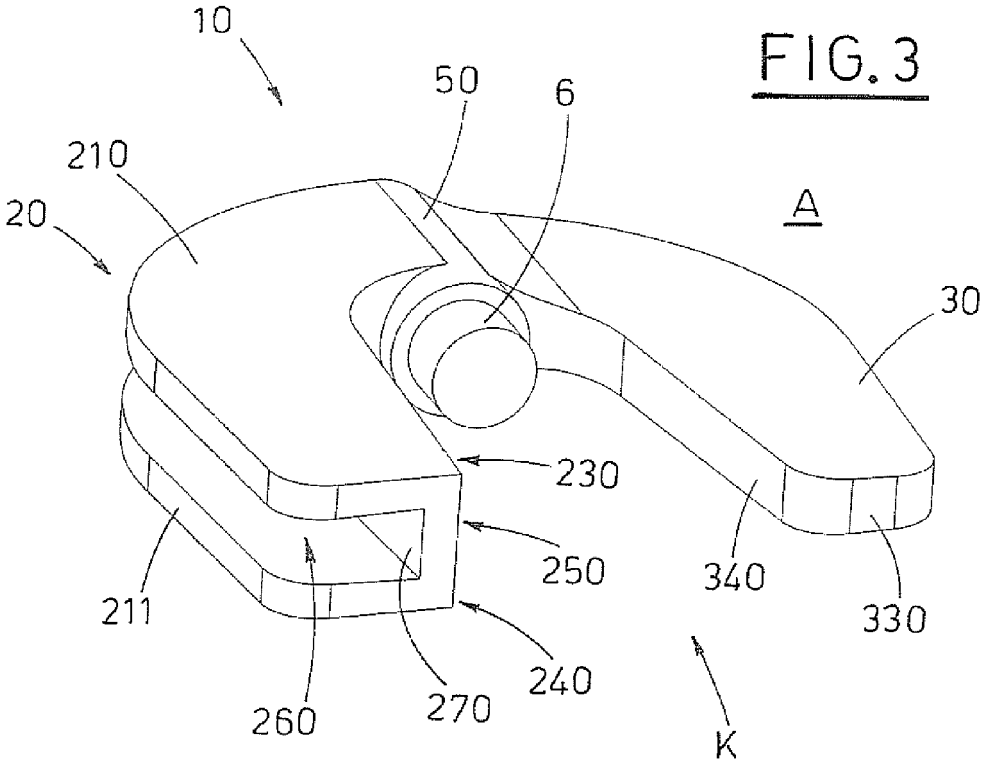


FIG. 3

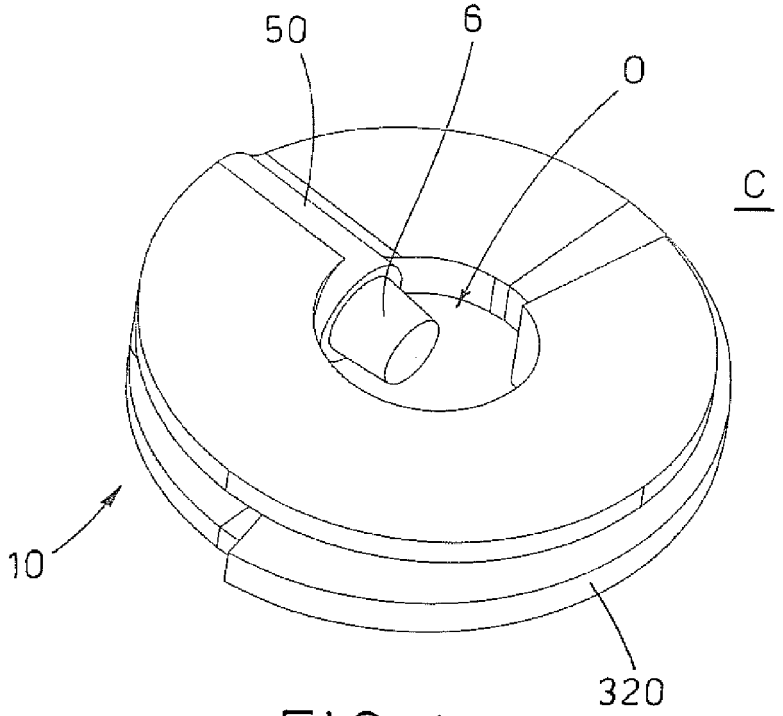


FIG. 4

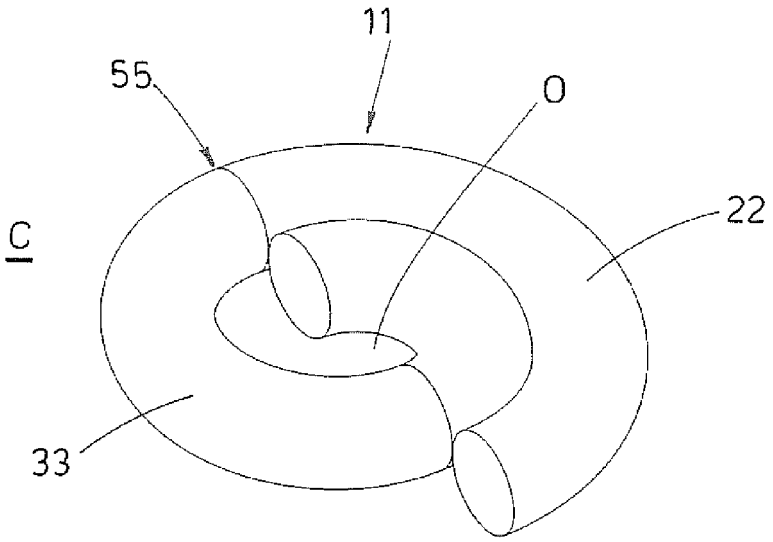


FIG. 5

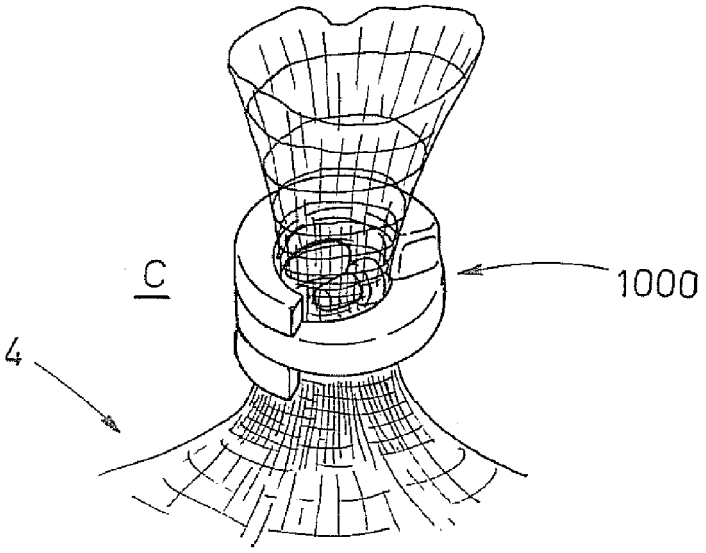
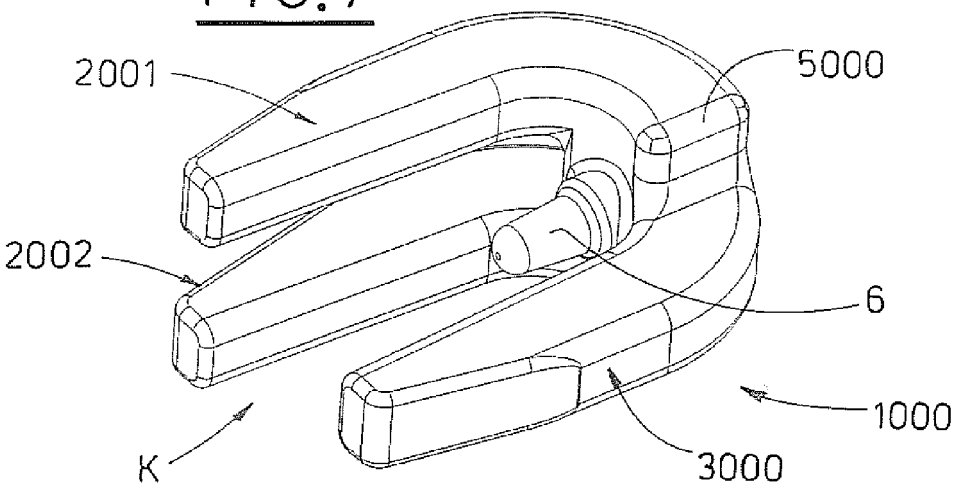


FIG. 6

FIG. 7



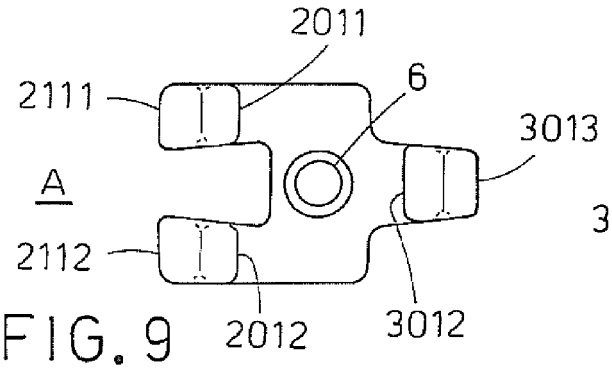


FIG. 9

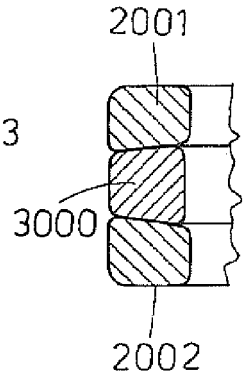


FIG. 10

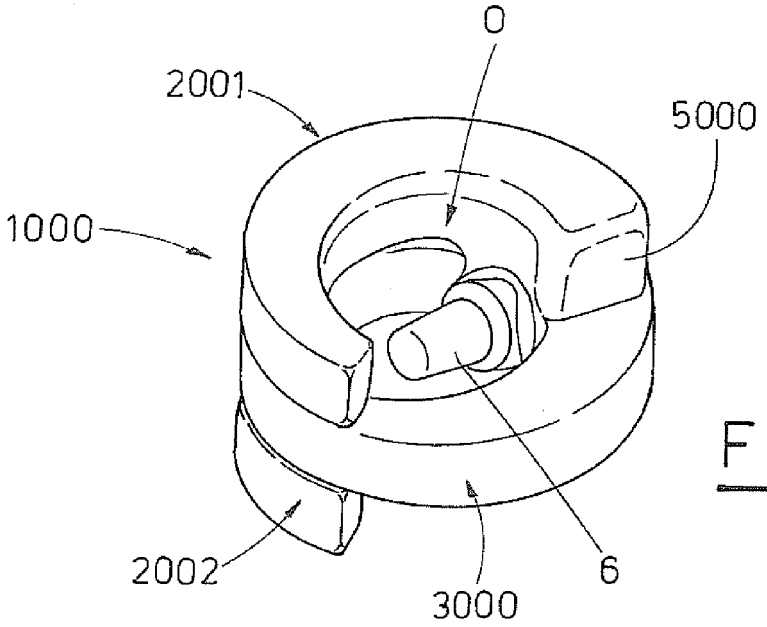


FIG. 8

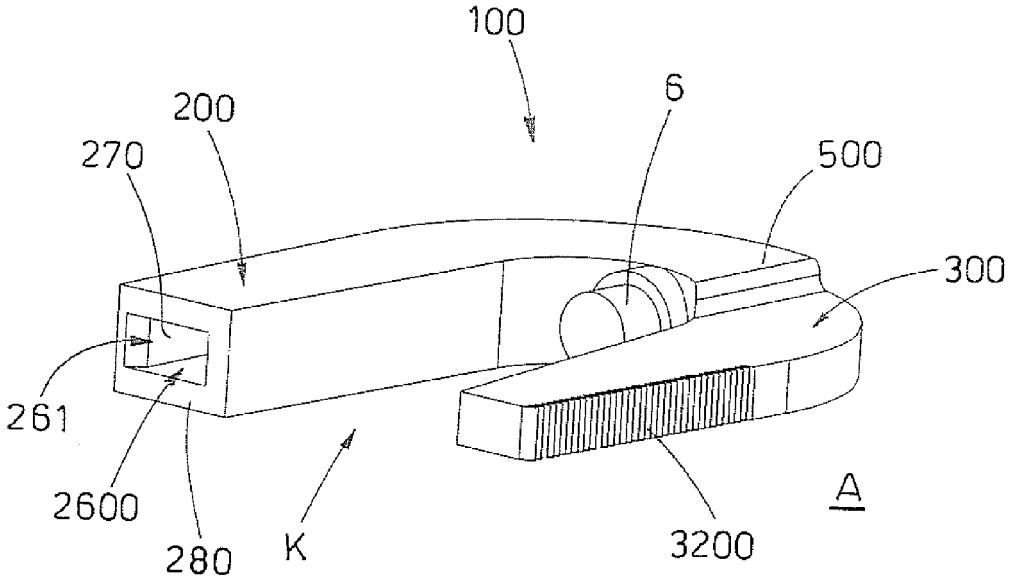


FIG. 11

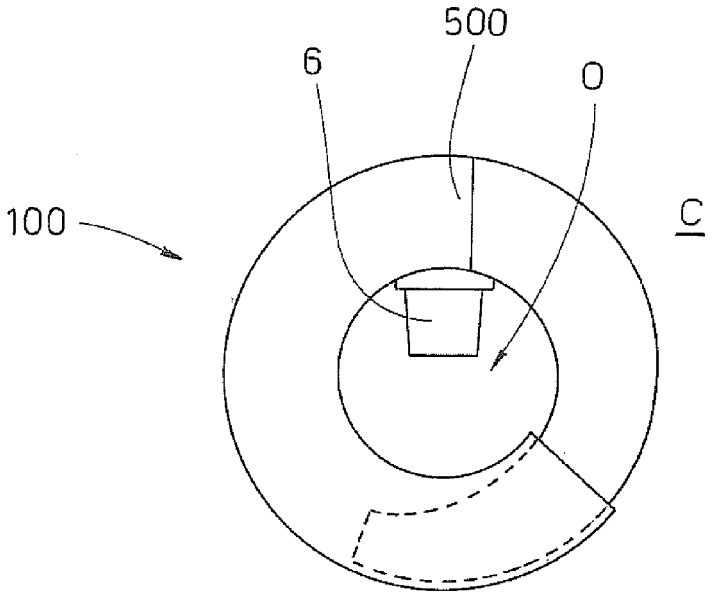


FIG. 12

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Application Number
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Place of search	Date of completion of the search	Examiner
Munich	9 July 2012	Ngo Si Xuyen, G

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