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(54) **Covering element in paper material, particularly for containers or trays for foodstuff**

(57) A covering element for food containers comprises a main body (2) of paper material having a substantially convex shape and set, under operating condi-

tions, to hold and cover foodstuffs, as well as hooking means (20) associated with the main body (2) and set to enable a steady engagement of the covering element with a tray for food.

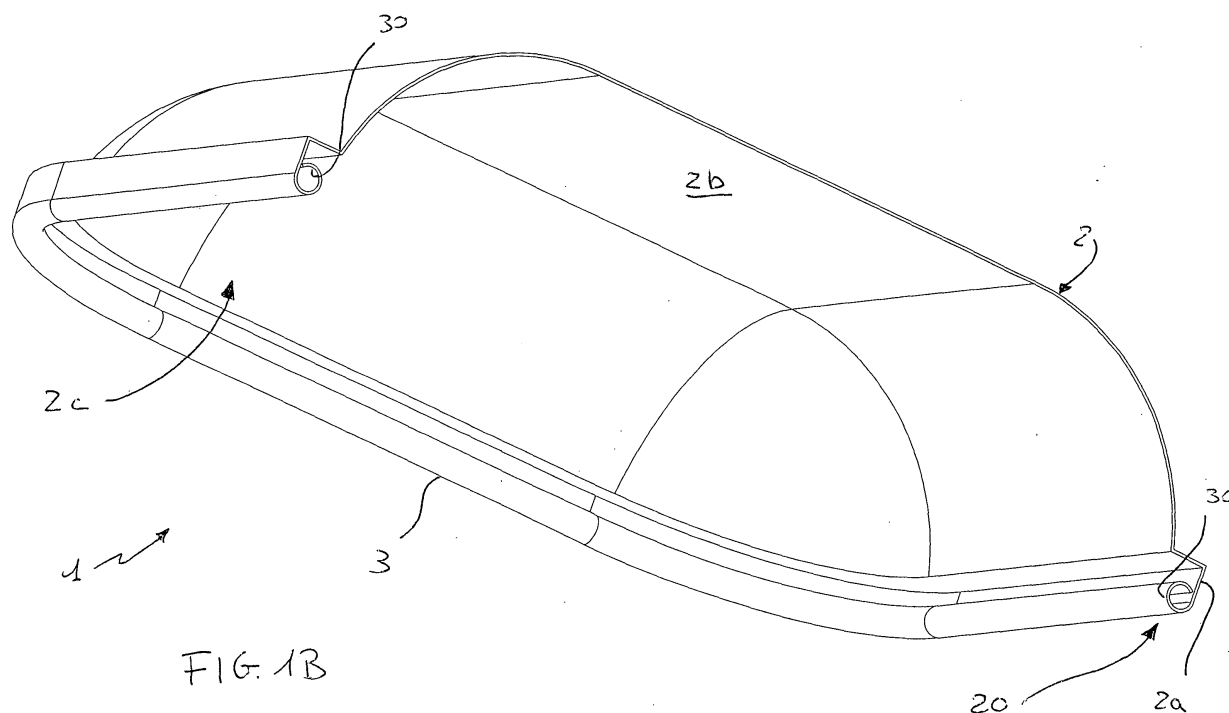


FIG. 1B

Description

[0001] The present invention relates to a covering element of paper material, in particular for food containers or trays.

[0002] It is known that as far as packaging of confectionery goods of small sizes is concerned, the most followed practice involves positioning of a predetermined number of these goods (that are generally of rather reduced sizes, so that they can be easily held on the palm of a hand) on a serving tray; then wrapping of the tray in a package of thin externally-decorated paper is provided. In this way, packaging of the confectionery goods in which the goods weight is supported by the tray is obtained, whereas the paper wrapping surrounding the tray and the goods acts as a protection and a cover against possible external atmospheric agents, and also an aesthetic attraction element.

[0003] Obviously, to give some structural coherence to the paper wrapping, one or more support ribs may be used, which are generally made of thin cardboard and which are arranged over the tray so as to define a corresponding "framework" (consisting of one or more arches extending between opposite tray sides). The framework acts as a support for the decorative paper and avoids the lower paper surface being in contact with the foodstuffs disposed below it.

[0004] Finally, for giving the packaging thus obtained the necessary steadiness, very often a ribbon-like element is fastened around the packet so as to prevent the decorative paper from even partly separating from the tray and also to further improve the aesthetic effect of the packaging by creating knobs and/or bows or loops of various shapes.

[0005] The known art briefly described above however has some limits.

[0006] In fact, first of all, preparation of this packaging appears to be long and complicated: as a matter of fact, causing passage of the covering paper under the tray after filling of the latter is practically indispensable; then possible stiffening ribs are to be associated with the tray before carrying out complete wrapping up of the tray itself with the decorative paper and finally, as already mentioned, a ribbon-like element is to be typically wound several times and in different directions around the packet.

[0007] All the above mentioned operations greatly increase the time required for obtaining a packet having the necessary features of steadiness and aesthetic acceptance, which on the other hand will involve non negligible risks of knocking over or damaging the confectionery goods contained therein (above all if the operator entrusted with packaging is not particularly qualified to handle the goods).

[0008] In addition, in this packaging procedure there is obviously a need for a great amount of decorative paper: to ensure a perfect closure of the packet several layers of decorative paper jutting out in different man-

ners and subsequently folded down towards the packet itself (and mutually linked) are required; a non negligible amount of decorative paper is also passed under the tray and this results in an excessive consumption of decorative paper (as compared with the amount that theoretically would be sufficient to form the packet), which adversely affects the operating costs.

[0009] Finally, which is important as well, the structural and aesthetic quality of the packaging depends on the subjective ability of the operator entrusted with said task.

[0010] Although in this particular sector no valid alternatives to the above exist, a second known technical solution is however to be mentioned.

[0011] In this case the problem to be faced concerns packaging of baked foodstuffs such as cakes or pizzas (or in general goods typically having bigger sizes than the palm of a hand); packages made for this type of goods can be used for transportation or temporary exhibition of the goods on the stands intended for sale.

[0012] Generally these packages in association with an element acting as a serving tray, have a covering element made of plastic and often transparent material which is suitably shaped so as to form a prismatic container inside which the goods are preserved and at all events maintained in sight.

[0013] These covering elements are therefore of one piece construction and are suitably produced by hot moulding of plastic materials such as polycarbonate or the like; contrary to what happens when confectionery goods are to be packaged, the typical use of these items does not involve the presence of decorative elements but only performs the function of separating the foodstuffs from the surrounding atmosphere; it will be understood that the external appearance of the packages made following this known technique is quite different from that typical of the confectionery packets, in terms both of sizes and mechanical and/or aesthetic properties.

[0014] Association of these monolithic covering elements with the serving trays greatly reduces complexity of the operations required for food packaging and gives the package itself higher mechanical capacities (so that a certain number of packets can be piled up for example, without running the risk of damaging contents of same).

[0015] However these devices too suffer for some shortcomings, in particular as regards cheapness and aesthetic appearance. In fact these covering elements are generally not very appreciated from an aesthetic point of view for use in confectionery (and are more used in the mass distribution of foodstuffs sold in great amounts); in addition, the purchase cost of these items is sometimes higher than that of paper packages.

[0016] Furthermore, as they are made of plastic material, further problems arise for disposal of said packages after use, due to clear bio-degradability reasons.

[0017] It is also to be pointed out that, as they have an appearance quite different from that typical of con-

fectionery packages, use of transparent covers of plastic material could never apply to confectioners' shops or shops dedicated to the retail sale of foodstuffs.

[0018] Under this situation, the technical task underlying the present invention is to devise a covering element, in particular for food containers or trays, capable of substantially obviating the mentioned drawbacks.

[0019] Within the scope of this technical task it is an important aim of the invention to devise a covering element that is substantially able to offer the same aesthetic appearance as a traditional confectionery packet, while at the same time offering a great simplification in the manufacturing and assembling processes.

[0020] It is a further important aim of the invention to devise a covering element that can be adapted to the already existing serving trays without particular expedients being adopted and also ensuring a very quick and steady connection and a high protection ability as regards the inner contents.

[0021] The present invention also aims at devising a covering element enabling an important material saving, and in particular capable of greatly reducing the use of decorative paper, while maintaining an unchanged aesthetic appearance for a consumer.

[0022] It is a further technical aim of the present invention to devise a covering element that can be used several times by a consumer and ultimately disposed of as rubbish, once its function has been exhausted, without encountering particular problems connected with a non-biodegradability of the material of which it is made.

[0023] Finally, it is a technical aim consistent with the present invention to obtain a covering element that can be manufactured with greatly simplified industrial operations while being advantageous in terms of production inexpensiveness and in conclusion of purchase costs.

[0024] The technical task mentioned and the aims specified are substantially achieved by a covering element having the features set out in one or more of the appended claims.

[0025] Description of preferred but not exclusive embodiments of a covering element in accordance with the invention is now given hereinafter by way of non-limiting example, with the aid of the accompanying drawings, in which:

- Figs. 1a, 1b and 1c show a covering element in accordance with the invention in a perspective view and a partly sectioned perspective view;
- Fig. 1d shows the respective tray for food in accordance with the present invention;
- Fig. 2 is a perspective view of an alternative embodiment of the covering element in accordance with the present invention;
- Figs. 2a and 2b are plan views showing the development in a plane of the covering element seen in Fig. 2 in accordance with two possible embodiments;
- Fig. 3 is a sectional view of the covering element

shown in Fig. 1a coupled with the tray shown in Fig. 1d;

- Fig. 3a is a view to an enlarged scale of a detail in Fig. 3;
- Fig. 4 is a sectional view of the covering element sectioned along line IV-IV in Fig. 2;
- Fig. 5 is a sectional view of the covering element sectioned along line V-V in Fig. 2;
- Fig. 6 is an alternative embodiment of the food container shown in Fig. 2 in a perspective view;
- Fig. 7 is a perspective view partly from below of the covering element in Fig. 6;
- Fig. 8 is a perspective view partly from below of an alternative embodiment of the covering element shown in Figs. 6 and 7;
- Fig. 9 is a sectional view of the covering element seen in Fig. 6, sectioned along line IX-IX in Fig. 7; and
- Fig. 10 is a detail to an enlarged scale of the covering element in Fig. 6.

[0026] With reference to the drawings, the covering element in accordance with the invention is generally identified with reference numeral 1.

[0027] In accordance with the present invention, the covering element 1 essentially comprises a main body 2 made of paper material. This main body 2 has an upper wall 2b and a side wall 2a emerging from the upper wall 2b.

[0028] The main body is of such an overall geometry that the side surface 2a and upper surface 2b in cooperation define a housing space 2c.

[0029] Conveniently, this housing space 2c has a substantially convex shape, so that it can accommodate items also of greater height than that of the tray housing them without any risk of interference. In other words, the housing space 2c, under operating conditions, is arranged so as to hold and cover foodstuffs.

[0030] Obviously, the side wall 2a has a free edge 3 delimiting the housing space 2c at the bottom; this free edge practically defines a lower opening (under use conditions of the covering element 1), through which the confectionery goods or in general foodstuffs are allowed to pass at the moment of carrying out packaging (for covering them).

[0031] At this point it is to be pointed out that in the main body 2 no bottom wall or similar element (from a functional point of view) is present adapted to completely close said opening; substantially this is made necessary by the fact that the covering element 1 is practically used as a cover or lid for a packaging or tray for foodstuffs which is itself designed to constitute the packaging bottom and more details about which will be given in the following.

[0032] In the preferred embodiment shown in Fig. 1a, the main body intended to define the covering element is made starting from a flat sheet of thin cardboard suitably cut out, which is then drawn to define the upper wall

2a and side wall 2a.

[0033] Simultaneously, the side wall 2a is turned up curl-wise upon itself so as to bring said wall to the configuration shown in Figs. 1a, 1b and 1c.

[0034] Obviously, the paper material in excess present in the corners of the covering element will be suitably compressed and will define small ribs.

[0035] In other words, the conformation shown in Figs. 1a, 1b and 1c can be defined starting from a single sheet of thin cardboard (without cuts, notches or the like) which is suitably drawn and folded.

[0036] In alternative embodiments shown in Figs. 2, 2a and 2b, the main body defining the covering element is made starting from a flat sheet of thin cardboard which is such cut out that it appears as in the example in Fig. 2a or 2b, ready to be suitably folded and fixed in position until reaching the configuration shown in Fig. 2.

[0037] In particular, shown in Fig. 2a or 2b are cuts or notches 30 disposed close to the angular portions designed to define the connecting portions 3c of the covering element.

[0038] Under assembled conditions in particular, the side regions 31 of the connecting portions 3c are intended to overlap the corresponding side regions 32 of the flaps designed to define the side surface 2a.

[0039] It is also to be noted that the portions intended to define the side surfaces 2a have a predetermined number of folding lines 33 to enable stiffening of the side surfaces 2a themselves, under assembled conditions of the covering element, and also to determine further engagement surfaces between said side surfaces 2a and the connecting portions 3c.

[0040] In particular, looking at Fig. 4 it is possible to see that the side surfaces 2a are actually made up of two layers consecutive to each other and folded up so as to define a double wall.

[0041] Obviously this configuration (which is an alternative to that of the example in Figs. 1a, 1b, 1c, 3 and 3a) enables the connecting portions 3c that actually will be engaged between the outermost wall and innermost wall of the side surface 2a, to be efficiently crimped at the angular regions of the covering element.

[0042] Advantageously, the main body 2 can be deformed, so that it can be conveniently worked and subsequently handled, but in particular it must have such a deformability that it can be assimilated to, and even "taken for" a true confectionery package.

[0043] The intrinsic deformability of the main body 2 is in any case maintained to such a level that two opposite portions of the side wall 2a can be moved apart from each other by a length equal to at least 15% of their operating distance (i.e. the distance at which they are when no outer mechanical stress is applied thereto) without causing breakages or permanent sets in the main body 2 itself.

[0044] It is to be pointed out that such an indication concerning deformability is achieved by an appropriate selection of the material and geometric proportions of

the main body 2; obviously, should circumstances require it, these design parameters can be varied so as to obtain a greater or smaller deformability than the stated one.

[0045] Conveniently, the free edge 3 has a substantially rectangular shape. In particular, it is to be noted in Figs. 1a, 2 and 6 that two first sides 3a and two second sides 3b parallel to each other and mutually opposite are present. In order to give a more agreeable aesthetic appearance and also to make a product devoid of sharp corners (to the advantage of safety in handling and resistance to tearing), sides 3a and 3b are respectively alternated with connecting portions 3c having a rounded course.

[0046] To protect the foodstuffs from an excessive exposure to the outer light and at the same time offer and appropriate aesthetic appearance to the finished product, the main body 2 is made of a non-transparent material; in addition, the main body 2 is such shaped that it has an external appearance recalling that of a confectionery packet or packaging. Thanks to this expedient, the covering element 1 in accordance with the present invention lends itself very well to be used in confectioners' shops as it is practically very similar, from an aesthetic point of view, to packages hand-wrapped by qualified operators (that obviously earn great approbation with consumers).

[0047] In more detail in terms of construction, it is to be noted that typically the first sides 3a have a length not exceeding 500 millimetres; likewise, the second sides 3b have a length not exceeding 350 millimetres.

[0048] Typical values of the lengths of the first sides 3a can be in fact the following: 385, 362, 330, 297, about 245 or 198 millimetres; at the same time, the typical length values of the second sides 3b can be 295, 267, 230, 215, 197, 170, or 139 millimetres.

[0049] More particularly as regards the invention, different main embodiments of the covering element are provided: a first preferred embodiment in which the main body 2 made of thin cardboard of one piece construction defines by itself the whole covering with the desired flexibility and deformability (Figs. 1 to 5) and a second alternative embodiment (Figs. 6 to 10) in which the covering element on the contrary is made of two distinct pieces coupled together prior to use to form the covering element.

[0050] Still as regards the construction parameters, in the first main embodiment in accordance with the present invention, for the first main body made of paper material use of a paper having a paper basis weight included between 250 and 1050 grams per square metre is provided; advantageously, paper having a paper basis weight in the range of between 300 grams per square metre and 800 grams per square metre is employed so as to give said main body a deformable character similar to that of a manually wrapped packet.

[0051] In accordance with the present invention and as can be seen in the figures, the upper wall 2b has con-

necting portions 2d. These connecting portions 2d physically connect the upper wall 2b to the side wall 2a and have a predetermined sequence of radii of curvature varying in a continuous or discontinuous manner (depending on the design requirements).

[0052] Conveniently, this connecting portions 2d are curved so that their concavity from the side wall 2a faces the housing space 2c.

[0053] In order to reach the best compromise between capability of making the connecting portions 2d and agreeable aesthetic impact, the connecting portions 2d have a minimum radius of curvature exceeding 7 millimetres (Fig. 3).

[0054] In this connection it is to be noted that the sequence of radii of curvature is also determined, in accordance with the present invention, so as to obtain an appropriate abutment region through which the covering element 1 will then be associated with a tray-shaped container, following modalities to be described later on.

[0055] In more detail, the main body 2 has an abutment surface 4 which is substantially flat and faces the opening delimited by the free edge 3; obviously, this abutment surface 4 is defined internally of the housing space 2c (see Figs. 3, 3a, 4, 5 and 9).

[0056] Still for the purpose of giving the finished product an aesthetic appearance quite similar to that of a traditional hand-wrapped package, the main body 2 has a ratio between its vertical dimension and the corresponding maximum horizontal dimension that does not exceed 0.25.

[0057] In the second main alternative embodiment of the present invention, the covering element 1 further comprises a support frame 5 which is associated with the main body 2 and is set to (at least partly) give the main body 2 a preestablished shape.

[0058] In other words, should requirements of resistance to collapsing and/or need for a great volume inside the covering element 1 made it necessary, the support frame 5 during manufacture of the covering is associated with the inside of the main body 2 so as to keep the same typical shape of a manually-wrapped package while at the same time obtaining a high structural coherence.

[0059] Where the support frame 5 is present, a sheet of paper material having a lower paper basis weight than that previously mentioned can be advantageously used for the main body 2: for example, a paper basis weight of about 100 grams per square metre is particularly appropriate (obviously, in this case too, glossy paper for food packaging will be preferably used for the main body 2).

[0060] Obviously, since the support frame must mainly perform a structural function, it will be always conveniently made of paper material, but having a stronger structure: in particular, in the present invention the support frame 5 is provided to be made of thin cardboard (frames of plastic material or other could also be made, although in this case problems of ecological type would

arise).

[0061] Advantageously, to maximise the structural efficiency while maintaining an exterior appearance of the covering element comparable with that of a traditional packet (and also for weight reduction), the support frame 5 has one or more lightening seats 6 (shown above all in Figs. 7 and 8).

[0062] These lightening seats are merely defined by through cavities and are fully covered with the main body 2. In this way, portions of the upper surface 2b are defined that, as they are not locally supported by the support frame 5, have a greater deformability than the corresponding portions of the same upper surface 2b that are close to the support frame 5 (or in other words directly rest thereon). Expressed in a different way, the presence of the lightening seats 6 enables the presence of portions of the main body 2 that can be free to wrinkle or be pleated exactly as it happens in traditional packets; in this manner an appreciable aesthetic effect is reached without necessarily renouncing the possibility of an important structural coherence.

[0063] Consistently with the above remarks, the main body 2 is directly in engagement with the support frame 5 (by glueing or a coupling of similar type, for example); in addition, due to clear aesthetic reasons, the support frame 5 is contained in the housing space 2c (so that it cannot be seen from the outside under use conditions of the covering element 1).

[0064] The lightening seats 6 are substantially confined by a plurality of upper stiffening portions 7b formed in the support frame 5. Associated with these upper stiffening portions 7b is a side portion 7a of a substantially rectangular closed conformation (of course, this side portion 7a acts as a support for the corresponding side wall 2a of the main body).

[0065] It is to be pointed out at this point that the side portion 7a and upper stiffening portions 7b are the main constituent elements of the support frame, that will take a conformation similar to that of a flattened dome of a polygonal base (in the accompanying figures the base polygon is clearly a rectangle, but it can be any geometric figure depending on requirements).

[0066] The relative arrangement of the upper stiffening portions 7b can be advantageously determined based on current requirements, so as to obtain the desired compromise between aesthetic appearance and sturdiness. For example, in the alternative embodiment shown in Fig. 8, the presence of four upper stiffening portions 7b is provided which extend starting from a central portion of the support frame 5 along directions substantially parallel to those of the first and second sides 3a and 3b (in this manner a support structure for the main body 2 is formed that is practically identical with that obtained by use of crossed thin cardboard strips in traditional packets).

[0067] Of course, this configuration can be obtained using two distinct transverse bands in overlapped relationship or a single sheet of thin cardboard suitably cut.

[0068] Alternatively, Fig. 7 shows another embodiment in accordance with the present invention in which there is the presence of a plurality of upper stiffening portions 7b radially extending from the central portion of the support frame 5; in this case the overall stiffness of the covering element 1 is much higher than that of a traditional packet.

[0069] Advantageously, the sheet of paper material defining the main body 2 has at least one discontinuity line 7 that is located at least at the upper surface 2b and crosses the latter in a longitudinal direction. This discontinuity line 7 mainly has aesthetic purposes if the support frame 5 is present, but can also advantageously act as a stiffening rib (or even as a handgrip, depending on its sizes), should the covering element 1 be exclusively made up of the main body 2.

[0070] In particular, this discontinuity line 7 is defined by a first folding of the sheet of paper material, close to which (in a particularly convenient embodiment) a second folding is disposed; this second folding is parallel to the first folding and these two folds substantially give the sheet a "Z"-shaped cross section (see Fig. 10). Of course, should technical/aesthetic requirements make it necessary, the discontinuity line 7 can be defined by different folding lines that, depending on the circumstances, will give rise to cross-sections having a more or less complicated shape (in the form of an inverted-W or of "Ω" for example).

[0071] Advantageously, the support frame 5 has an abutment portion 8 (that substantially corresponds to the abutment surface 4 of the main body 2), which is designed to mechanically interfere with a tray-shaped container (to be described later) so that a food container can be defined.

[0072] As visible in the figures, this abutment surface 4 or 8 is substantially flat and is defined internally of the housing space 2c.

[0073] In an original manner, the covering element in accordance with the invention is also provided with hooking means 20 associated with the main body and adapted to enable a removable engagement with a food tray, as better specified in the following.

[0074] As shown in Figs. 1a-1c, the hooking means 20 comprises at least one predetermined stretch of the lower edge 3 turned up curl-wise so as to allow a snap-engagement with the food tray.

[0075] Preferably but not exclusively, this curl 30 can extend over the whole perimeter of the lid. It is also to be noted that this curl 30 is obtained through direct folding of the side wall 2a.

[0076] The hooking means 20 alternatively comprises a predetermined number of tabs 21 set to enable said snap-engagement with the food tray.

[0077] Said tabs can be made of one piece construction with the main body 2 (Fig. 2b) or separated therefrom to be then linked thereto (Fig. 2a).

[0078] Said tabs 21 representing the second embodiment of the hooking means are defined by elements of

rectangular form and made of thin cardboard for example, that are inserted in the main body 2 and linked thereto. In particular these tabs 21 can be folded or engaged in such a manner that they emerge from surface 2a internally of the housing space 2c. The tabs 21 themselves that are in the form of laminar elements can be linked both to the connecting portions 3c (this being the preferred embodiment) and to the side surfaces 2a.

[0079] In accordance with the embodiment shown in the accompanying figures 2, 2a, 2b, 4 and 5 and referring particularly to the sectional view in Fig. 5, it is possible to see that said tabs are associated (or folded) close to each of the connecting portions 3c and have a first end 21a rigidly fixed to the side surface 2a at the free edge 3 and a second free end 21b that, under a disengaged condition of the tray-covering element, is disposed at least partly away from the surface of the connecting portion 3c.

[0080] Referring again to the configuration of the covering element it is also possible to envisage the presence of a grip element (not shown) associable with the main body 2 in such a manner that the package can be carried very easily.

[0081] For example, this grip element can be defined by a common cloth ribbon suitably linked to an upper central portion of the main body itself (portion 2b in Fig. 1a, for example).

[0082] The process for manufacturing a covering element 1 in accordance with the example shown in Fig. 2 conveniently comprises the following main steps. To make the covering element shown in Figs. 1 to 4, a first flat sheet of paper material, preferably thin cardboard having the appropriate paper basis weight, is set and a preestablished number of cuts 30 is formed therein by punching at the connecting portions 3c.

[0083] Then the flat sheet is folded up upon itself so that it takes a concave configuration in which the connecting portions 3c are brought to the inside of the cavity defined by the covering element in partial overlapping relationship with the corresponding adjacent side surfaces.

[0084] In particular, the side regions 31 and 32 of the connecting portions 3a and the side surfaces 2a respectively, are in overlapped relationship with each other thereby generating contact surfaces that are used for mutual engagement.

[0085] Once the side regions 31 are linked to the corresponding side regions 32 the body takes a tridimensional rounded shape. At this point the portions defining the side surface 2a can be folded up upon themselves along preestablished folding lines 33. In this manner a configuration of the side surface 2a of the type shown in section in Fig. 4 is obtained, i.e. where the region defining the free edge 3 consists of a double wall. This, first of all, enables the structure of the covering element to be stiffened and further surfaces to be defined, close to the connecting portions 3c and in contact therewith, so that a stronger and more efficient link is created.

[0086] Also provided is a further step of arranging the hooking means 20 or tabs 21 which, in the first embodiment (Fig. 2b) are merely folded in place and in the second embodiment are preferably irremovably associated, at a first end 21a thereof, with the connecting portions 3c (shown in chain line in Fig. 2).

[0087] The further end 21b of the tabs is such positioned that it projects from portion 3c so that, under engagement conditions, it interferes with an edge 10 of a tray (see Fig. 3).

[0088] Of course, the second embodiment (Fig. 6-10) too can be provided with the appropriate tabs 21 or curls 30 so that hooking means 20 quite similar to those of the first embodiment can be obtained for a removable engagement with the corresponding tray.

[0089] It is also an object of the present invention to provide the whole packaging for foodstuffs (which packaging particularly applies to confectionery goods such as sweets, pastries, cakes, savoury biscuits and the like); this packaging essentially comprises one tray 9, disposed at the lower part and designed to receive a plurality of foodstuffs (practically acting as a support surface for said foodstuffs) and a covering element 1 having one or more of the features set out above and such arranged that it can be fitted onto the tray 9 itself.

[0090] In more detail as regards this food container, it is possible to notice that the shape of the side wall 2a of the covering element 2 matches the shape of the corresponding peripheral wall 9a of tray 9; in addition the abutment surface 4 or 8 (belonging to the covering element 2) is designed to be brought into contact with an edge band 10 belonging to the peripheral wall 9a of tray 9. Substantially, the food container hitherto described consists of tray 9 and of the covering element 1 which are mutually disposed in such a manner that a container is defined the appearance of which is practically identical with that of a hand-wrapped confectionery package.

[0091] In fact, an operator wishing to pack a multiplicity of confectionery goods must place them on tray 9, then (unlike what happens in traditional circumstances) the only necessary operation consists in placing the covering element 1 over tray 9 making the two components integral with each other by the previously described hooking means 20.

[0092] In particular, it is a very simple and reliable operation, since the covering element is disposed over tray 9 the shape of which conforms to that of said element and is then fitted thereon until the abutment surfaces 4 or 8 touch the corresponding mating edge 10 of the tray. During the coupling step, curls 30 or alternatively tabs 21 (and in particular the second end or free end 21b) are elastically pushed by the edge 10 itself against the connecting portion 3c; as soon as the edge 10 abuts against the respective edge of the covering element, the tab or curl disengages from the turned-up edge portion 10 and elastically go back to the position moved away from the connecting portion 3c and actually reaches the position shown in Figs. 3, 3a or 4 at which there is an

interference with edge 10.

[0093] Furthermore, use of strips of adhesive tape or strings or ribbons may be provided although the latter are quite additional items and are exclusively connected with the final presentation of the product; in this way a container is advantageously obtained that has the same appearance as a traditional packet but accomplishment of which is much more quickly and with less practical problems.

[0094] In a particular embodiment of the present invention, for achieving an excellent mating capability between the tray and covering element, use of a tray having one or more of the following features is provided. The tray will be associable with a food container in accordance with the present invention.

[0095] Through examination of a particular embodiment of tray 9, it is possible to see that it first of all comprises a substantially flat bottom wall 9b and a peripheral wall 9a connected to the latter. The bottom wall 9b and peripheral wall 9a in mutual cooperation define a cavity 9c designed to house a plurality of foodstuffs; obviously, this cavity 9c having an opening facing upwardly in the normal use position of the container, helps in defining the inner volume of the food container in accordance with the present invention, together with the housing space 2c confined by the covering element 1.

[0096] In particular, the tray will be set to contain a predetermined number of pastries, cakes or in any case products of reduced sizes as compared with the plan extension of the container itself.

[0097] The peripheral wall 9a has an inner surface facing cavity 2c which is substantially concave; in other words, the inner surface of the peripheral wall 9a has an arched profile in the cross section of the bottom wall 9b (as can be viewed from Figs. 1d, 3, 4, 5, 6 and 9). Preferably, tray 9 seen in plan view is of substantially rectangular shape, i.e. it comprises two long straight sides 9e and two short straight sides 9f. Conveniently, these short and long sides substantially correspond to the first and second sides 3a and 3b of the covering element 1; however, the shape of this tray 9 can be that of any polygon (and therefore, consistently with what described in connection with the covering element 1, it will correspond to the shape in plan view of said covering element).

[0098] At angular positions with respect to the straight sides 9e and 9f, connecting arcs are provided that are obtained, like the straight sides 9e and 9f, by cutting out the laminar material of which tray 9 is advantageously made (generally cardboard material coated with a film for food on an upper face thereof and used to make these types of trays).

[0099] In accordance with a particularly efficient embodiment from a structural point of view which also has important aesthetic qualities, at each of the connecting arcs 9d a plurality of stiffening ribs is provided (shown in Fig. 1a) which in their major extension direction transversal to the bottom wall 9b have an arched shape cor-

responding to the concavity of the peripheral wall 9a along the straight sides 9e and 9f.

[0100] In an original manner, the peripheral wall 9a comprises an edge band 10 turned up outwardly and such disposed as to define, for at least one portion but preferably completely, the contour of the opening ideally delimiting the side wall 9a. The edge band 10 is adapted to delimit a base portion 11 which has a concave surface practically belonging to the same peripheral wall 9a (see Figs. 1d, 3 or 4 and 5). In other words, the edge band 10 is of arched shape with a convex curvature and is disposed in the extension of the concave curvature of the base portion 11 of the peripheral wall 9a.

[0101] Advantageously, the edge band 10 extends in a manner adapted to dispose its margin 12 at the end, which margin corresponds to the cutting line of the laminar material; in accordance with the present technical teachings, this margin 12 is substantially turned downwardly in the normal use position of the container, so that it prevents possible contacts of the foodstuffs with the tray 9 portion that is not covered with the film for food.

[0102] The arched shape with a convex curvature of the edge band 10 therefore extends in the extension of the concave curvature of the base portion 11 through an angle adapted to orientate margin 12 downwardly. Practically, since the tangent at the inflexion point between the concavity of the base portion 11 and the convexity of the edge band 10 normally forms an angle of about 60° with respect to the plane of the bottom wall 9b, this extension angle of the convexity of the edge band 10 is at least as wide as about 120°.

[0103] As a consequence of the above, the vertical plane passing orthogonal to the bottom wall 9b and the tangent to the edge at the margin point will form an angle as wide as or wider than 120°.

[0104] Practically it is this geometry of the tray edge that enables a snap engagement between the covering element and tray (see Fig. 3).

[0105] It is also to be pointed out that the radius of curvature of the edge band 10 must be much smaller than that of the base portion 11 in order to obtain a sufficient stiffness and must not exceed the value of 1/4 of that of said base portion, for example.

[0106] Another original feature of tray 9, if the above mentioned arched ribs are present (at the connecting arcs 9d) resides in the conformation of the ribs themselves.

[0107] In fact, these ribs instead of consisting of arched beads as in the known art, i.e. of narrow convex regions alternated with wider (or at most of identical width) concave portions, are defined, always on the side of the concavity defined by tray 9, by convex portions disposed side by side so as to form complementary grooves which in turn substantially have the shape of sharp corners.

[0108] Practically, externally of the cavity defined by tray 9, the concavities and convexities that are complementary to the just described convexities and sharp-

edged grooves respectively, appear to substantially correspond to the inner surface (i.e. the surface turned towards the cavity) of the corresponding connecting regions present in the trays of the known art.

[0109] In other words, the radii of curvature of the convex portions are greatly larger than those corresponding to the concave portions and therefore the stiffening ribs at the upper folded edge are wider and individually rounded, whereas the convex portions are of much more reduced extension and at some points of their surface they are almost sharp-edged.

[0110] In addition, a small number of ribs is present (3 to 6, but preferably 4) to prevent the material from breaking or avoid the presence of pleats and unaesthetic marks on the material itself.

[0111] Since the edge band 10 extends along the whole periphery of the tray-shaped container, it has an external development and delimits not only the straight portions of the peripheral wall 9a, but also the convex stiffening ribs and it is disposed according to an axis of curvature that is transverse to the longitudinal axis of curvature of the convex portions themselves.

[0112] Since the curvature of the convex type of ribs 9 (described above in detail) continues into the curvature of the edge band 10 which is convex as well although transverse, the moulding operations for manufacturing the tray-shaped container are facilitated and yield phenomena of the laminar material are avoided, which phenomena could on the contrary occur should execution of the convex folding of the edge band 10 take place terminally and transversely of the concave portions that are present in the known art.

[0113] It will be appreciated that the folded edge 10 of tray 9 actually defines a hooking portion which is set to receive the curls 30 or tabs 21 of the covering element 1 in a removable engagement, making the two components integral with each other.

[0114] Note at all events that the main mechanically-interacting areas essentially consist of the abutment portion 4, 8 and the curls 30 or tabs 21 of the covering element 1 and of the edge band 10; in fact, due to their particular conformation, a very steady coupling between the covering element 1 and tray 9 is obtained. In other words, due to coupling of the edge band 10 and abutment portion 8, possible relative separations between the tray 9 and covering element 1 along substantially horizontal directions (or more generally along directions parallel to the lying plane of the bottom wall 9b) are avoided; a vertical sliding away of the two parts is instead inhibited by curls 30 (or tabs 21) and edge 10; in this manner, completion of a packaging obtained using the above described components is very easy and safe, because a connection between the tray 9 and covering element 1 is only to be ensured along the vertical direction through an appropriate shape of the hooking portion and curls 30 (tabs 21).

[0115] With reference to the drawings, the external appearance that is wished to be obtained with the

present invention is that shown in Figs. 1a or 2; the other representations, while being consistent with and in compliance with the inventive idea of the present invention, are diagrammatic views adapted to highlight some of the technical features of the invention such as the shape, some dimensional ratios of the product, abutment surfaces, etc.

[0116] The invention achieves important advantages.

[0117] In fact, first of all, the construction architecture of the present invention enables availability to the public of an item having an aesthetic appearance substantially coincident with that of traditional confectionery packets while being at the same time handleable without the difficulties encountered in making traditional packets. These features are very advantageous because the above container can be easily used also by unqualified staff or when a great amount of packets is to be made in a short period of time.

[0118] In addition, the possible presence of a support structure of paper material which however has more marked mechanical properties than the component acting both as a covering and as an aesthetic element, ensures a correct preservation of the confectionery products and a handling capability similar to that of packages of strong conformation.

[0119] A further advantage of the covering element in accordance with the present invention is given by the fact that it enables an important paper saving in use, because less decorative paper is employed as compared with the traditional packets where said paper is used in excess since it is also placed under the bottom of the serving tray and also defines the flaps to be folded back in the packet itself.

[0120] In addition, the total amount of the material employed for offering a complete packaging is greatly reduced and since the packets are fully made of paper material disposal of the same after use is much easier.

[0121] As can be seen, such a covering element reduces the production costs and greatly simplifies the manufacturing processes, because the required shapes are not particularly complicated and the operations for preparing the covering element are of reduced number and easy accomplishment from a technical point of view.

[0122] Finally storage and transportation of the different covering elements is made easier as they can be piled up.

Claims

1. A covering element of paper material, particularly for food containers or trays, **characterized in that** it comprises a main body of paper material having an upper surface (2b) and a side surface (2a) emerging from said upper surface (2b), said side surface (2a) and upper surface (2b) in cooperation defining a housing space (2c) of substantially convex shape and which is set, under operating condi-

tions, to hold and cover foodstuffs, the side wall (2a) having a free edge (3) delimiting said housing space (2c) and defining an opening disposed, under use conditions, at the lower part of the covering element (1).

2. A covering element as claimed in claim 1, **characterized in that** it further comprises hooking means (20) associated with the main body and capable of allowing a removable engagement with a food tray, the hooking means being particularly connected to the side surface (2a) of the main body and preferably emerging from said surface (2a) internally of the housing space (2c).
3. A covering element as claimed in claim 2, **characterized in that** said hooking means (20) comprises a predetermined number of curls (30) and/or tabs (21) designed to enable a snap-engagement with the food tray.
4. A covering element as claimed in claim 3, **characterized in that** said tabs have a first end (21a) rigidly connected to the side surface (2a) and a second free end (21b) designed to interfere, under engagement conditions with the tray, with an edge (10) of the tray itself, said tabs being preferably made of paper material and being more preferably defined by laminar elements inserted in or linked to the main body (2) or rigidly connected to said body and folded down.
5. A covering element as claimed in claim 1, **characterized in that** said main body (2) does not show any bottom wall adapted to completely close said opening defined by the free edge (2) of the side wall (2a).
6. A covering element as claimed in claim 1, **characterized in that** the main body (2) can be deformed to such an extent that opposite portions of the side wall (2a) are able to be moved away from each other by a length corresponding to at least 15% of their operating distance without causing breakages or permanent sets in the main body (2).
7. A covering element as claimed in claim 1, **characterized in that** the free edge (3) delimiting the housing space (2c) has a substantially rectangular shape with first and second opposite sides (3a, 3b) alternated with connecting portions (3c) respectively, preferably the hooking means (20) being engaged at least at the connecting portions (3c).
8. A covering element as claimed in claim 7, **characterized in that** said first sides (3a) have a length not exceeding 500 millimetres and **in that** said second sides (3b) have a length not exceeding 350 mil-

limetres.

9. A covering element as claimed in claim 1, **characterized in that** the main body (2) has a paper basis weight included between 250 and 1050 grams per square metre and preferably in the range of from 300 grams per square metre to 800 grams per square metre, so as to give the same a deformability similar to that of a manually-wrapped package.
10. A covering element as claimed in claim 5, **characterized in that** the upper wall (2b) has connecting portions (2d) having a predetermined sequence of radii of curvature, from the side wall (2a) to the housing space (2c), said connecting portions (2d) preferably having a minimum radius of curvature exceeding 7 millimetres.
11. A covering element as claimed in claim 1, **characterized in that** the main body (2) has a substantially flat abutment surface (4) facing said opening, said abutment surface (4) being defined internally of the housing space (2c).
12. A covering element as claimed in anyone of the preceding claims, **characterized in that** it further comprises a support frame (5) preferably of paper material associated with the main body (2) and set to at least partly give a preestablishes shape to the main body (2).
13. A covering element as claimed in claim 12, **characterized in that** the support frame (5) has one or more lightening seats (6) defined by through cavities, said lightening seats (6) being internally covered with the main body (2) so that, in cooperation with the main body (2) itself, they define upper surface portions (2b) having a greater deformability than the corresponding upper surface portions (2b) close to the support frame (5).
14. A covering element as claimed in claim 12, **characterized in that** the main body (2) is directly engaged on the support frame (5), preferably by glueing or similar coupling, the support frame (5) being contained in the housing space (2c) and in particular being not visible from the outside under use conditions of the covering element (1).
15. A covering element as claimed in claim 12, **characterized in that** the support frame (5) has an abutment portion (8) substantially corresponding to the abutment surface (4) of the main body (2), said abutment portion (8) being substantially flat and defined internally of the housing space (2c).
16. A covering element as claimed in claim 3, **characterized in that** said curls (30) are defined by arched

portions of the side wall (2a) and extend over the whole lower periphery of the covering element, for example.

17. A process for manufacturing a covering element (1), in particular for food containers or trays, in accordance with anyone of the preceding claims, **characterized in that** it comprises the following steps:
 - setting a first flat sheet of paper material;
 - drawing said flat sheet until it takes a tridimensional concave configuration with a lower opening, under use conditions of the covering element;
 - setting hooking means (20) associated with said connecting portions (3c) and/or said side surfaces (2a) to enable a steady engagement with a food tray or container.
18. A process as claimed in the preceding claim, **characterized in that** said step of setting the hooking means (20) comprises the following sub-steps:
 - forming a predetermined number of tabs (21);
 - associating a first end (21a) of said tabs (21) with said connecting portions (3c) and/or said side surfaces (2a);
 - leaving a second end (21b) of said tabs free, to allow the same to interfere, under use conditions of the tray, with an edge (10) of the tray itself.
19. A process as claimed in claim 17, **characterized in that** the step of setting the hooking means (20) comprises a step of rolling up the side wall (2) inwardly of the housing space (2c) to define at least one curl (30).
20. A process as claimed in claim 17, **characterized in that** it further comprises the step of turning up upon itself the portion defining the side surface (2a) to obtain a free edge (3) with a double wall and possibly increasing the contact surface between the connecting portions (3c) and side surface (2a).
21. A packaging for foodstuffs, in particular confectionery goods such as sweets, pastries, cakes, savoury biscuits and the like, comprising:
 - a tray (9) designed to receive a plurality of foodstuffs;

characterized in that it further comprises a covering element (1) set to be fitted over said tray-shaped container (9), said covering element being of the type as claimed in anyone of the preceding claims 1 to 16.

22. A packaging as claimed in claim 21, **characterized in that** the shape of the side wall (2a) of the covering element (2) matches that of a peripheral wall (9a) of the tray (9).

23. A packaging as claimed in claim 22, **characterized in that** the tray (9) comprises:

- a substantially flat bottom wall (9b) and a peripheral wall (9a) defining a cavity (9c) having an opening facing upwardly in the position of normal use of the container itself, the peripheral wall (9a) preferably having a substantially concave inner surface facing said cavity, said peripheral wall (9a) comprising an edge band (10) turned up towards the outside, which is disposed at least at a peripheral portion of said opening, said edge band (10) being adapted to delimit a base portion (11) exhibiting said substantially concave surface.

24. A packaging as claimed in claim 23, **characterized in that** the edge band (10) has an arched shape with a convex curvature disposed in the extension of the concave curvature of said base portion (11) of the peripheral wall (9a).

25. A packaging as claimed in claim 23, **characterized in that** the tray (9) is made up of a laminar material and **in that** the edge band (10) extends in a manner adapted to terminally show a margin (12) corresponding to the cutting line of said laminar material and substantially turned downwardly in the normal use position of the container.

26. A packaging as claimed in claim 24, **characterized in that** the edge band (10) has an arched shape with a convex curvature extending through an angle at least as wide as 120°, with respect to a plane parallel to the bottom wall (9b).

27. A packaging as claimed in claim 23 incorporating a tray (9) designed to receive a plurality of foodstuffs, of the type having a substantially rectangular shape angularly provided with connecting arcs (9d) between straight sides (9e, 9f) and comprising a substantially flat bottom wall (9b) and a peripheral wall (9a) defining a cavity (9c) having an opening facing upwardly in the normal use position of the container itself, the peripheral wall (9a) having an inner surface turned towards said substantially concave cavity (9c) and comprising, at each of said connecting arcs (9d), a plurality of stiffening ribs (10) that, in a major extension direction substantially transverse to said bottom wall (9b), have an arched shape corresponding to the concavity of the peripheral wall (9a) itself along said straight sides (9e, 9f), **characterized in that** said stiffening ribs (10) are

defined on the side of said cavity (9c), by convex portions (12) disposed in side by side relationship so as to form complementary grooves (13) substantially terminating with a sharp corner.

28. A packaging as claimed in claim 27, **characterized in that** said peripheral wall (9a) comprises an edge band (10) turned up outwardly and such extending as to delimit the base portion (9b) of the straight sides (9e, 9f) showing said concave surface, said edge band (10) also delimiting said stiffening ribs (11) disposed at the connecting arcs (9d).

29. A packaging as claimed in claim 28, **characterized in that** the edge band (10) has an arched shape with a convex curvature opposite to the concave curvature of the base portion (9b) and disposed along an axis transverse to the longitudinal axis of curvature of said convex portions (12) defining the stiffening ribs (11).

Amended claims in accordance with Rule 86(2)EPC

1. A covering element of paper material, particularly for food containers or trays, comprising:

- a main body of paper material having an upper surface (2b) and a side surface (2a) emerging from said upper surface (2b), said side surface (2a) and upper surface (2b) in cooperation defining a housing space (2c) of substantially convex shape and which is set, under operating conditions, to hold and cover foodstuffs, the side surface (2a) having a free edge (3) delimiting said housing space (2c) and defining an opening disposed, under use conditions, at the lower part of the covering element (1);
- hooking means (20) associated with the main body and capable of allowing a removable engagement with a food tray, the hooking means being connected to the side surface (2a) of the main body, **characterized in that** the free edge (3) delimiting the housing space (2c) has a substantially rectangular shape with the first and second opposite sides (3a, 3b) alternated with connecting portion (3c) respectively, preferably the hooking means (20) being engaged at least at the connecting portion (3c).

2. A covering element as claimed in claim 1, **characterized in that** said hooking means (20) comprises a predetermined number of curls (30) and/or tabs (21) designed to enable a snap-engagement with the food tray.

3. A covering element as claimed in claim 2, **characterized in that** said tabs have a first end (21a)

rigidly connected to the side surface (2a) and a second free end (21b) designed to interfere, under engagement conditions with the tray, with an edge (10) of the tray itself, said tabs being preferably made of paper material and being more preferably defined by laminar elements inserted in or linked to the main body (2) or rigidly connected to said body and folded down.

4. A covering element as claimed in claim 1, **characterized in that** said main body (2) does not show any bottom wall adapted to completely close said opening defined by the free edge (2) of the side wall (2a).

5. A covering element as claimed in claim 1, **characterized in that** the main body (2) can be deformed to such an extent that opposite portions of the side wall (2a) are able to be moved away from each other by a length corresponding to at least 15% of their operating distance without causing breakages or permanent sets in the main body (2).

6. A covering element as claimed in claim 1, **characterized in that** said first sides (3a) have a length not exceeding 500 millimetres and **in that** said second sides (3b) have a length not exceeding 350 millimetres.

7. A covering element as claimed in claim 1, **characterized in that** the main body (2) has a paper basis weight included between 250 and 1050 grams per square metre and preferably in the range of from 300 grams per square metre to 800 grams per square metre.

8. A covering element as claimed in claim 4, **characterized in that** the upper wall (2b) has connecting portions (2d) having a predetermined sequence of radii of curvature, from the side wall (2a) to the housing space (2c), said connecting portions (2d) preferably having a minimum radius of curvature exceeding 7 millimetres.

9. A covering element as claimed in claim 1, **characterized in that** the main body (2) has a substantially flat abutment surface (4) facing said opening, said abutment surface (4) being defined internally of the housing space (2c).

10. A covering element as claimed in anyone of the preceding claims, **characterized in that** it further comprises a support frame (5) preferably of paper material associated with the main body (2) and set to at least partly give a preestablishes shape to the main body (2).

11. A covering element as claimed in claim 10,

characterized in that the support frame (5) has one or more lightening seats (6) defined by through cavities, said lightening seats (6) being internally covered with the main body (2) so that, in cooperation with the main body (2) itself, they define upper surface portions (2b) having a greater deformability than the corresponding upper surface portions (2b) close to the support frame (5).

12. A covering element as claimed in claim 10, **characterized in that** the main body (2) is directly engaged on the support frame (5), preferably by glueing or similar coupling, the support frame (5) being contained in the housing space (2c) and in particular being not visible from the outside under use conditions of the covering element (1).

13. A covering element as claimed in claim 10, **characterized in that** the support frame (5) has an abutment portion (8) substantially corresponding to the abutment surface (4) of the main body (2), said abutment portion (8) being substantially flat and defined internally of the housing space (2c).

14. A covering element as claimed in claim 2, **characterized in that** said curls (30) are defined by arched portions of the side wall (2a) and extend over the whole lower periphery of the covering element, for example.

17. A process for manufacturing a covering element (1), in particular for food containers or trays in accordance with anyone of the preceding claims, **characterized in that** it comprises the following steps:

- setting a first flat sheet of paper material;
- drawing said flat sheet until it takes a tridimensional concave configuration with an upper surface (2b) and a side surface (2a) emerging from said upper surface (2b) in cooperation defining a housing space (2c) of substantially convex shape with a lower opening, under use conditions of the covering element, said side wall (2a) having a free edge (3) delimiting said housing space (2c) and having a substantially rectangular shape with first and second opposite sides (3a, 3b) alternated with connecting portion (3c) respectively;
- setting hooking means (20) associated with said connecting portions (3c) and/or said side surfaces (2a) to enable a steady engagement with a food tray or

16. A process as claimed in the preceding claim, **characterized in that** said step of setting the hooking means (20) comprises the following sub-steps:

- forming a predetermined number of tabs (21);
- associating a first end (21a) of said tabs (21) with said connecting portions (3c) and/or said side surfaces (2a);
- leaving a second end (21b) of said tabs free, to allow the same to interfere, under use conditions of the tray, with an edge (10) of the tray itself.

17. A process as claimed in claim 15, **characterized in that** the step of setting the hooking means (20) comprises a step of rolling up the side wall (2) inwardly of the housing space (2c) to define at least one curl (30).

18. A process as claimed in claim 15, **characterized in that** it further comprises the step of turning up upon itself the portion defining the side surface (2a) to obtain a free edge (3) with a double wall and possibly increasing the contact surface between the connecting portions (3c) and side surface (2a).

19. A packaging for foodstuffs, in particular confectionery goods such as sweets, pastries, cakes, savoury biscuits and the like, comprising:

- a tray (9) designed to receive a plurality of foodstuffs;

characterized in that it further comprises a covering element (1) set to be fitted over said tray-shaped container (9), said covering element being of the type as claimed in anyone of the preceding claims 1 to 14.

20. A packaging as claimed in claim 19, **characterized in that** the shape of the side wall (2a) of the covering element (2) matches that of a peripheral wall (9a) of the tray (9).

21. A packaging as claimed in claim 20, **characterized in that** the tray (9) comprises:

- a substantially flat bottom wall (9b) and a peripheral wall (9a) defining a cavity (9c) having an opening facing upwardly in the position of normal use of the container itself, the peripheral wall (9a) preferably having a substantially concave inner surface facing said cavity, said peripheral wall (9a) comprising an edge band (10) turned up towards the outside, which is disposed at least at a peripheral portion of said opening, said edge band (10) being adapted to delimit a base portion (11) exhibiting said substantially concave surface.

22. A packaging as claimed in claim 21, **characterized in that** the edge band (10) has an arched

shape with a convex curvature disposed in the extension of the concave curvature of said base portion (11) of the peripheral wall (9a).

23. A packaging as claimed in claim 21, **characterized in that** the tray (9) is made up of a laminar material and **in that** the edge band (10) extends in a manner adapted to terminally show a margin (12) corresponding to the cutting line of said laminar material and substantially turned downwardly in the normal use position of the container.

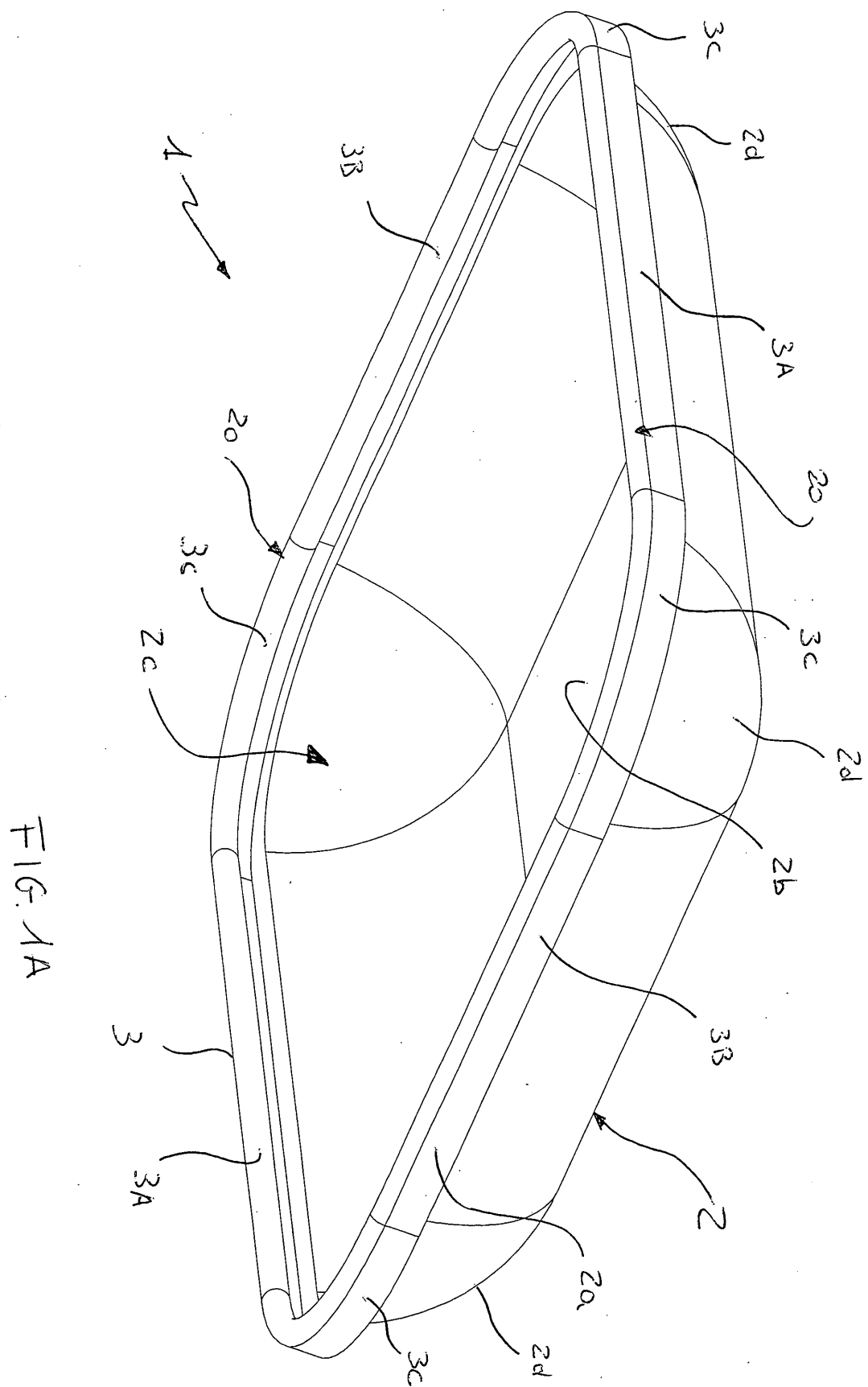
24. A packaging as claimed in claim 22, **characterized in that** the edge band (10) has an arched shape with a convex curvature extending through an angle at least as wide as 120°, with respect to a plane parallel to the bottom wall (9b).

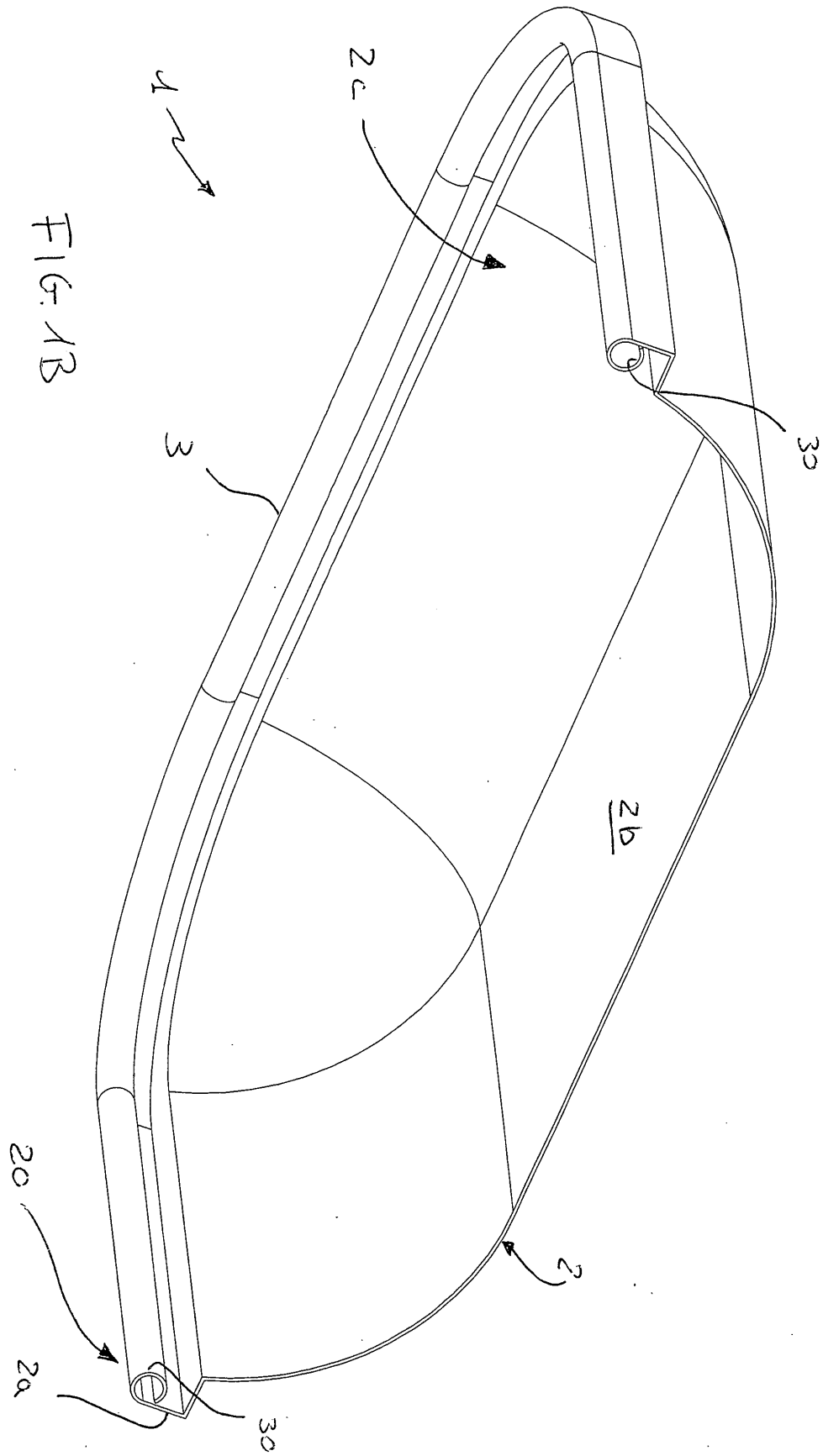
25. A packaging as claimed in claim 21 incorporating a tray (9) designed to receive a plurality of foodstuffs, of the type having a substantially rectangular shape angularly provided with connecting arcs (9d) between straight sides (9e, 9f) and comprising a substantially flat bottom wall (9b) and a peripheral wall (9a) defining a cavity (9c) having an opening facing upwardly in the normal use position of the container itself, the peripheral wall (9a) having an inner surface turned towards said substantially concave cavity (9c) and comprising, at each of said connecting arcs (9d), a plurality of stiffening ribs (10) that, in a major extension direction substantially transverse to said bottom wall (9b), have an arched shape corresponding to the concavity of the peripheral wall (9a) itself along said straight sides (9e, 9f),

characterized in that said stiffening ribs (10) are defined on the side of said cavity (9c), by convex portions (12) disposed in side by side relationship so as to form complementary grooves (13) substantially terminating with a sharp corner.

26. A packaging as claimed in claim 25, **characterized in that** said peripheral wall (9a) comprises an edge band (10) turned up outwardly and such extending as to delimit the base portion (9b) of the straight sides (9e, 9f) showing said concave surface, said edge band (10) also delimiting said stiffening ribs (11) disposed at the connecting arcs (9d).

27. A packaging as claimed in claim 26, **characterized in that** the edge band (10) has an arched shape with a convex curvature opposite to the concave curvature of the base portion (9b) and disposed along an axis transverse to the longitudinal axis of curvature of said convex portions (12) defining the stiffening ribs (11).





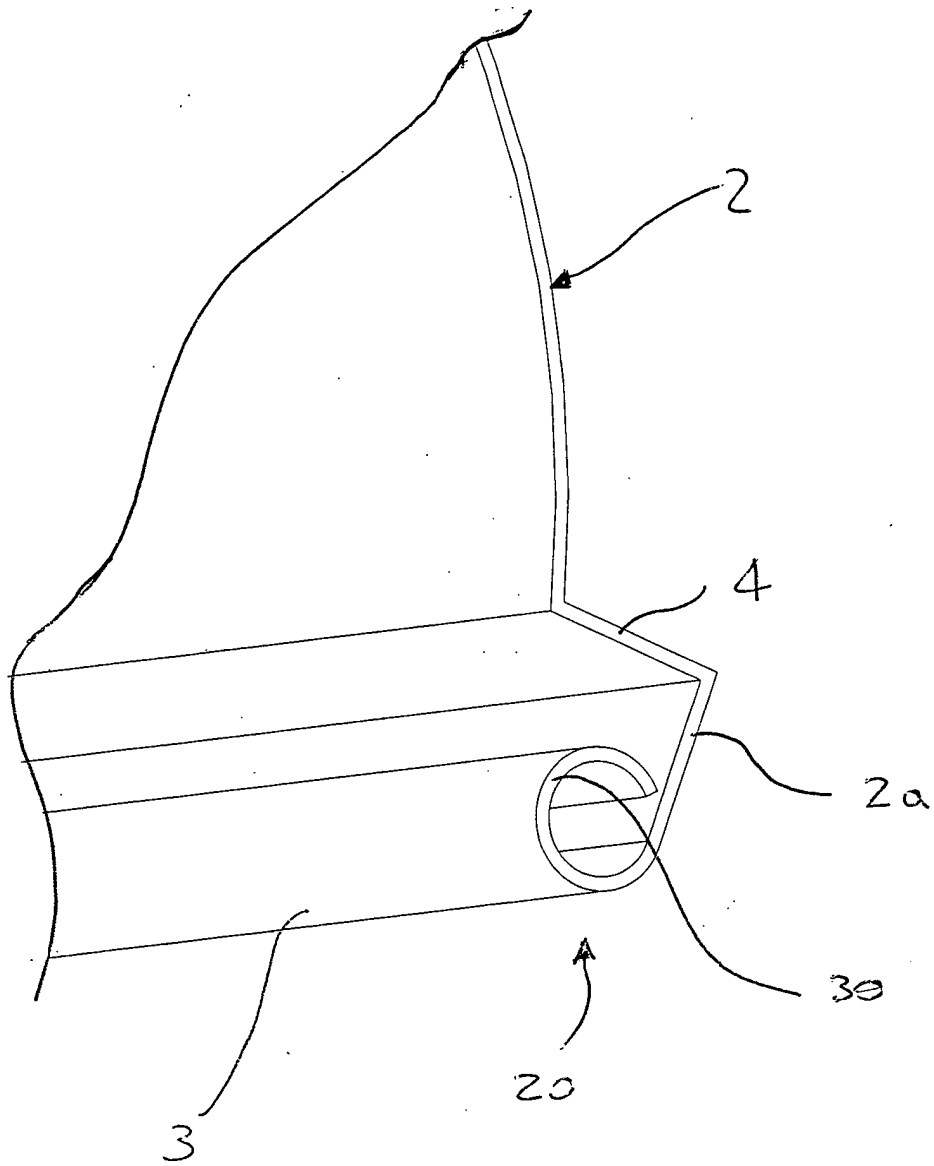


FIG. 1C

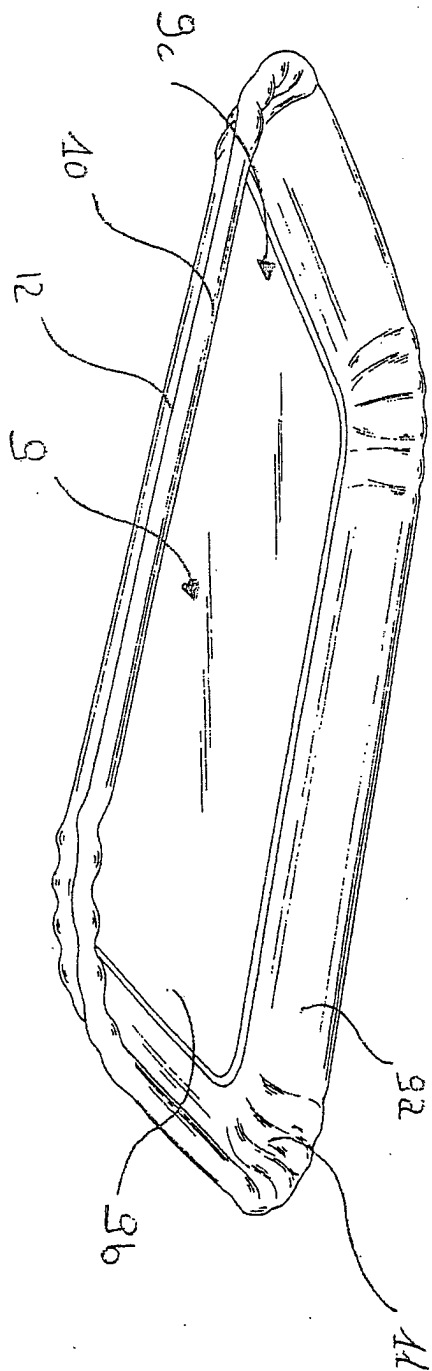


Fig. 1D

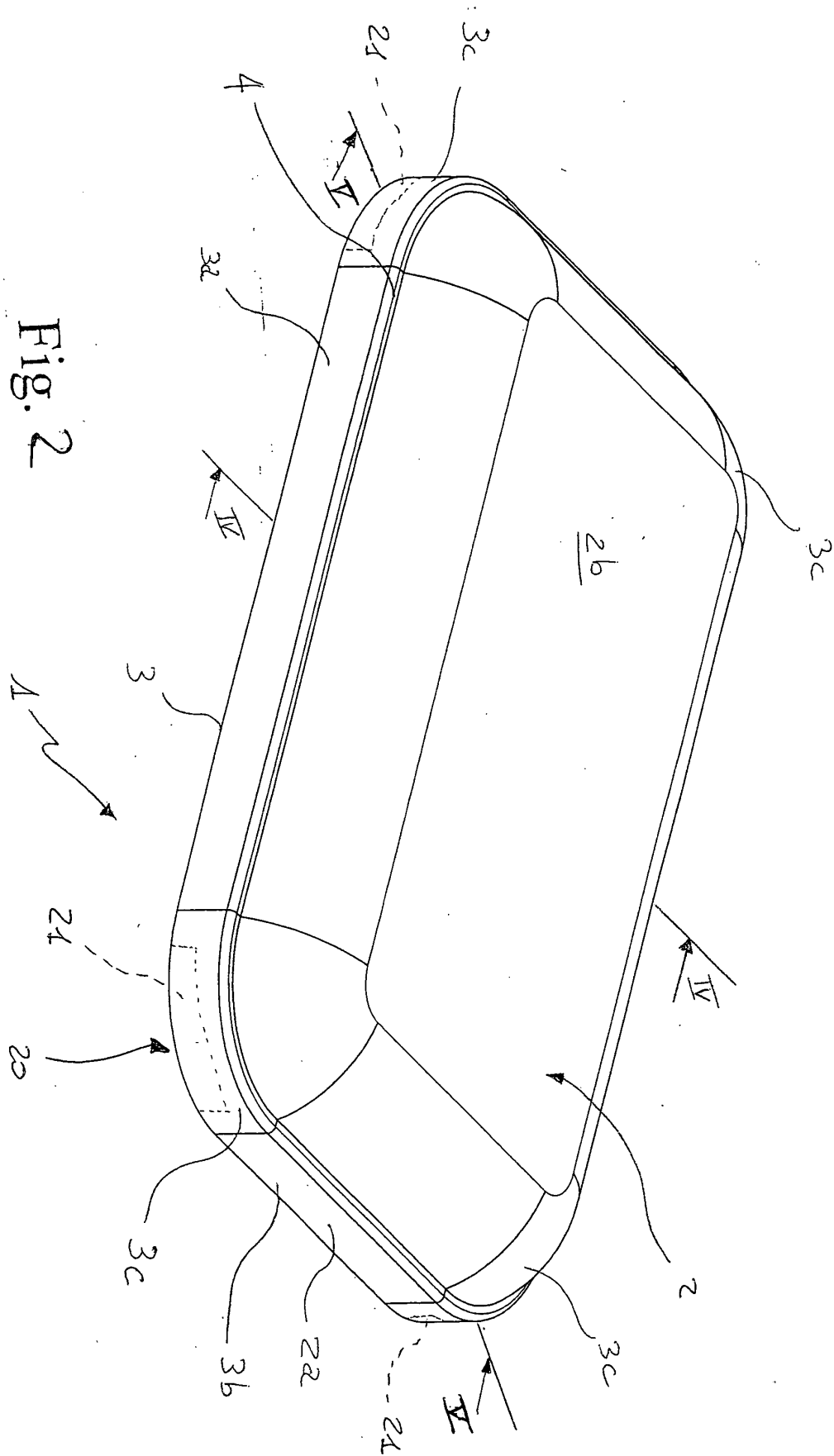
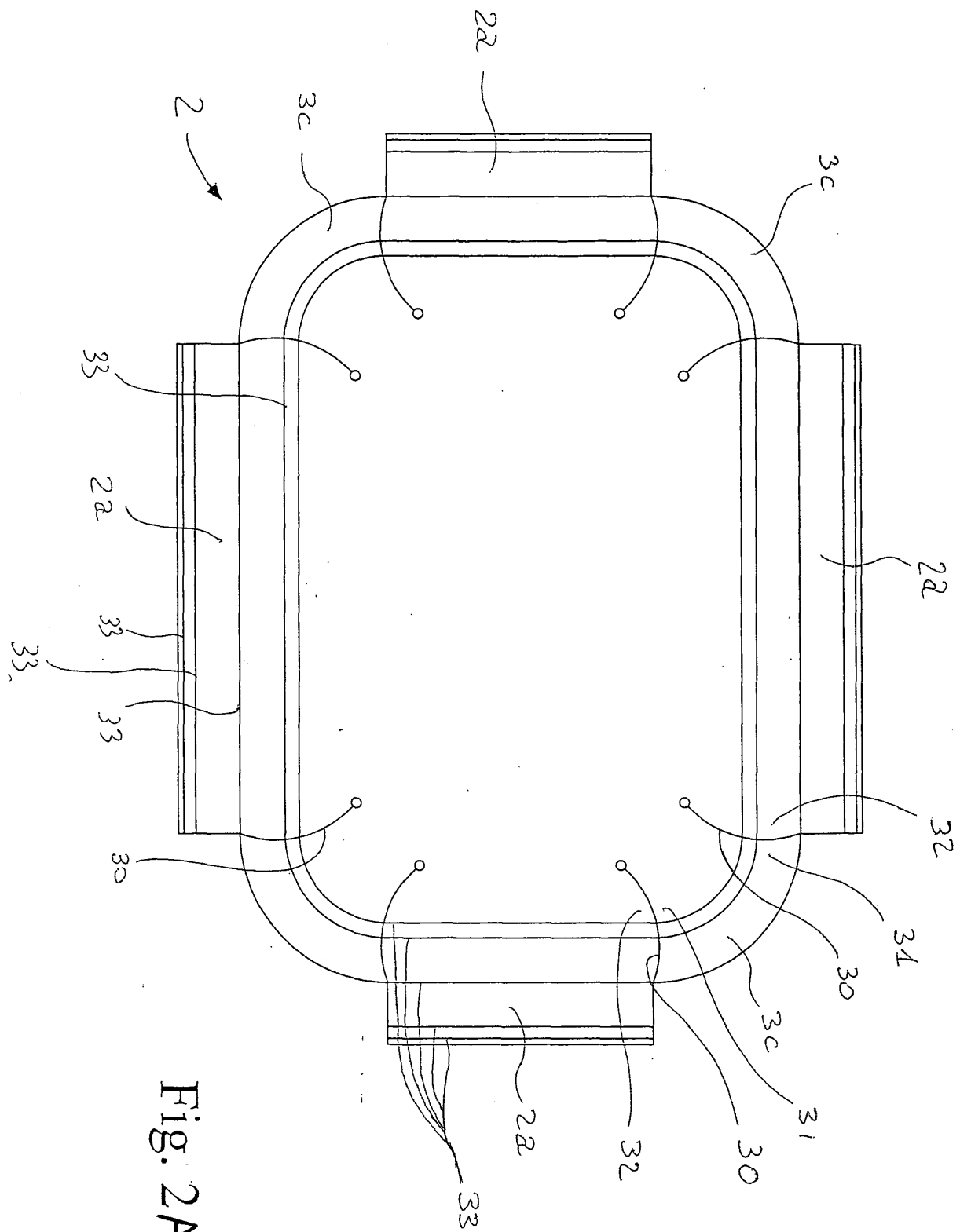


Fig. 2





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 01 0655

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 2 246 695 A (PHILLIPS CHARLES E) 24 June 1941 (1941-06-24) * the whole document *	1-5, 11, 16, 17, 21-23	B65D43/02
X	US 4 583 680 A (ALBA ANDREW J ET AL) 22 April 1986 (1986-04-22) * the whole document *	1-5, 17, 21, 22	
X	US 2 798 631 A (DAVID ENGEL) 9 July 1957 (1957-07-09) * left-hand column, line 17-24; figures *	1, 2, 17, 21	
X	NL 8 301 218 A (FRANK VAN T VEER) 1 November 1984 (1984-11-01) * the whole document *	1, 2	
A	US 3 797 730 A (ZACH E ET AL) 19 March 1974 (1974-03-19) * figures *	1	
A	WO 00 15341 A (INST ANGEWANDTE CHEMIE BERLIN ;CLAUS PETER (DE); RODEMERCK UWE (DE) 23 March 2000 (2000-03-23) * figures *	7	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 24 October 2003	Examiner Fournier, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 01 0655

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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24-10-2003

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