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

(11) Publication number : **0 611 702 A1**

# (12) EUROPEAN PATENT APPLICATION

(21) Application number : **94830060.3**

(22) Date of filing : **16.02.94**

(51) Int. Cl.[5] : **B65D 5/36,** B65D 5/22, B65D 5/66, B65D 5/46

(30) Priority : **17.02.93 IT BO930023 U**
**06.05.93 IT BO930103 U**

(43) Date of publication of application :
**24.08.94 Bulletin 94/34**

(84) Designated Contracting States :
**AT CH DE ES FR GB IT LI**

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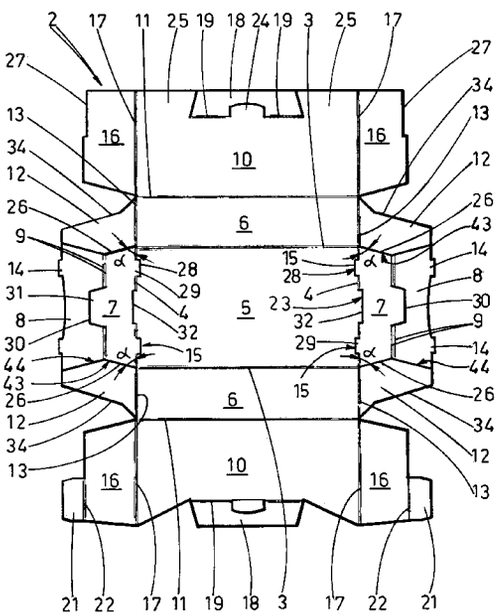
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## (54) A packing container.

(57) The container (1) is made from a single sheet (2) scored with longitudinal and transversal fold lines (3 and 4) defining a base (5), the longitudinal walls (6) and the transversal walls (7) being bilaterally provided with connecting tabs (12) transversally hinged to them, at least one of the longitudinal walls (6) being provided with a closing flap (10) and exhibiting folds (19) which define at least one longitudinal tab (18) destined to create, with apertures made on it, a handle (20). The closing flap (10) exhibits at least one vertical stiffening fluke (16) hinged to it and equipped with a locking and closing tab (21), also hinged to it and destined to be inserted in a seat (23) made on one of the transversal walls (7), or in the longitudinal wall (6) not provided with a closing flap (10).

*FIG 1*




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The invention relates to the field of single-piece cardboard containers for retail and transport of products, especially destined to wrap products needing a stiff container, such as pastries and articles of clothing.

It is usual, in pastry bakeries, to place ready foodstuffs on cardboard or plastic trays which are then wrapped around with paper and tied with ribbons which, once in place, function also as handles for the goods.

This is obviously a laborious process, and at the end the contents of the package are not greatly protected by such flimsy wrapping, and are thus liable to be damaged during transport.

To overcome this problem, a framework of single strips of cardboard is created around the tray, passing under it and over it in an arch-shape: subsequent overwrapping with paper stiffens the structure somewhat, but in essence the only guarantee against damage is that the paper wrapping will not come into contact with the food. Crushing is still probable with such a wrapping as the one described above: also problematic are the facts that the arch shape of the package precludes the possibility of piling one on top of another for transport, and indeed the shape also leads to possible instability of the whole tray.

Cakes and tarts are often packed in single-piece cardboard packages made from a star-shaped original sheet, having a quadrangular central base and four wings departing one from each side of the base. Two of the wings, on opposite sides to each other, are provided with at least one hole at their ends, and are foldable externalwise such as to meet and constitute a manual handle for the tray. The free ends of the other two wings have slits through which the handles can be slid freely. Recesses or tabs on the base of the handle prevent the slitted wings from slipping out.

Such containers are stronger than the previous-described ones, but also exhibit a cupola form, which together with the still weak mechanical resistance they present, render stacking unwise.

The need to stack these products derives from the fact that they cannot be packed in layers in a single container due to their perishability, so that the use of a considerable number of separate containers is unavoidable, and it is preferable that the containers be stackable.

Articles of clothing such as trousers, jackets and dressing gowns, present the same packing requirements. Here, when an article is packed after sale, it is usually inserted in a paper or plastic carrier bag, where it tends to slide downwards during transport and become creased and crushed.

The aim of the invention is thus to provide a packing container which is sufficiently rigid to offer some degree of crush and impact resistance, in order to overcome the above-mentioned drawbacks. The invention also aims to be easy and rapid to assemble.

The container also aims to be stackable, and to offer the possibility of packing with one hand only, without closing on itself due to its lack of rigidity.

Further characteristics and advantages of the present invention will better emerge from the detailed description that follows, of an embodiment of the invention, illustrated in the form of a non-limiting example in the accompanying drawings, in which:

figure 1 shows a plan view of a single cardboard sheet which is the basis of the invention;

figures 2 and 3 shows a partial plan view of two further embodiments of the sheet of figure 1;

figure 4 is a perspective view of the sheet of figure 1 during its assembly, for example, as a pastry container;

figure 5 is a partial perspective view of the sheet of figure 3 during its assembly;

figure 6 is a partial perspective view, with some parts removed and others sectioned better to evidence others, of the container of figures 1 to 4 in a partially closed configuration;

figure 7 is a partial perspective view, with some parts removed better to evidence others, of a detail of one end of the container resulting from the sheet of figure 2;

figure 8 shows in partial perspective view a detail of one end of the container deriving from the sheet of figures 3 to 5;

figure 9 is a partial perspective view from below of an end of the container during its closure operation;

figure 10 shows a perspective view of two stacked closed containers;

figure 11 shows a perspective view of a different closed container to that of figure 10;

figure 12 is a perspective view of an open container for articles of clothing;

figure 13 is a perspective view of the container of figure 12 in a closed configuration;

figure 14 is a plan view of a further embodiment of the cardboard sheet;

figure 15 shows in perspective view the container deriving from the sheet of figure 14 and arranged in its pack configuration, ready to be assembled;

figures 16, 17 and 18 are perspective views of the various conformations assumed by the containers during their assembly, starting from the pack condition of figure 15, achieve by previously assembling the sheet;

figure 19 is a perspective view of the container with some parts removed better to evidence others, destined for articles of clothing;

figure 20 shows in plan view a further embodiment of the sheet of figure 14;

figure 21 shows a perspective view of a container deriving from the sheet of figure 20;

figure 22 in a plan view of a further embodiment of the sheet of figure 14.

With reference to the drawings, 1 denotes a container according to the present invention, while 2 denotes the single sheet the container 1 originates from.

The sheet 2 is scored by longitudinal and transversal fold lines 3 and 4 which define the base 5 of the container on at least one side, the longitudinal walls 6 and the transversal lateral walls 7.

The transversal walls 7 each exhibit a stop fluke 8 hinged to the transversal wall 7 by a fold 9. In figure 1 two folds 9 are shown, which are distanced from each other by a distance equal to the thickness of the sheet 2, for a reason will become evident hereinbelow. Each fluke 8 exhibits meshing teeth 14 along its free longitudinal side and parallel to the hinges 9, which meshing teeth 14 will insert in corresponding seatings 15 in the base 5 when the container 1 is assembled.

Each seating 15 is obtained by realizing cuts 28 in the base 5, starting from the through hole 4, such as to generate lower teeth 29 in the transversal walls 7. Consecutive cuts 30 can be made in the flukes 8, so defining an upper central fluke 31 being a part of the respective transversal wall 7 as can be seen in figure 1. The height of the transversal walls 7 at the upper central fluke 31 is equal to the height of the longitudinal walls 6 and constitute a central support at the transversal walls 7 (see figure 6). In the embodiment of figure 2 the upper central fluke 31 is absent: in this case the connecting tabs 12 are formed such that a portion 35 of them is equal in height and proximal to the folds 13 with the longitudinal walls 6, such as to constitute a lateral support, as can be seen in figure 7.

Each longitudinal wall 6 has connecting tabs 12 hinged to it at respective transversal folds 13 aligned with the transversal folds 4 and a closing flap 10 hinged to it at a fold 11 parallel to the longitudinal folds 3. Figures 1 and 2 show how the connecting tabs 12 are arranged on opposite sides of the 7 are arranged on opposite sides of the transversal walls 7. When the container is assembled, the closing flaps 10 constitute a cover 33.

Each closing flap 10 has vertical stiffening flukes 16 hinged to it at transversal folds 17 aligned with the transversal folds 4 and a C-shaped longitudinal tab 18 hinged to it at folds 19 parallel to the longitudinal folds 3. The stiffening flukes 16 are of the same height as the transversal walls 7, such that they rest on the same surface as the base 5 when the container 1 is closed. The stiffening flukes 16 of a closing flap 10 are each equipped with a locking and closing tab 21 hinged to it along a transversal fold 22 parallel to the transversal folds 4. Each locking and closing tab 21 is destined to be inserted in a corresponding seating 23 inferiorly made in the corresponding transversal wall 7 by means of cuts 32 made coincidingly with the transversal folds 4. In the figures the closing flaps 10 are wider than the slit they fit into, measured from the folds 11 and perpendicularly to them. In this way, the closing flap 10 and the and the slit are partially superposed during the closure of the container 1. For this reason the vertical stiffening flukes 16 of the lower closing flap 10 are each equipped with a recess shaped like the seat 23.

The longitudinal tab 18 connected to the lower closing flap 10 internally defines a lateral supporting wing 24 and two lateral support wings 25 bilaterally to it. The longitudinal tabs 18 are destined to be folded with respect to the closing flaps 10 and to be rested one against the other, as illustrated in figures 10 and 11, to create a carrier handle 20.

To give greater strength for stacking purposes, the transversal walls 7 have a trapezoid conformation and are separated from the connecting tabs 12 by cuts 26 defining the sides 43 of the transversal walls 7 and the internal side 44 of the connecting tabs 12. Each of the connecting tabs 12 has a free side 34, parallel to the side defined by the cut 26, and at least at these sides is equal to or lower in height than the transversal walls 7, measuring perpendicularly up from the cut 26. Thus the longitudinal axis of each connecting tabs 12 is inclined with respect to the longitudinal axis of the longitudinal walls 6 by an equal angle to the angle of inclination of the cuts 26 with respect to the transversal folds 4. The free sides 34 of the connecting tabs 12 will function as a support for the portions of sheet 2 bordered by the parallel folds 9 separating the transversal walls 7 and the flukes 8. In the accompanying figures of the drawings, the larger base of the transversal walls 7 corresponds to the transversal folds 4, but it is obvious that, if necessary, the smaller base of the transversal walls 7 can be made at the transversal folds 4 (see figure 11).

Figure 1 shows how the flukes 8 can be shaped the same as the transversal walls 7, or instead they can be rectangular and have their longer side equal to the base of the corresponding transversal walls 7, to which they are hinged.

In the embodiment of figure 3 the parallel folds 9 are inclined with respect to the transversal folds 4 and stretch from the top of the base 5 such that the transversal walls 7 are trapezoid. The flukes 8, on the other hand, are triangular and separated from the connecting tabs 12 by cuts 26. This conformation enables the connecting tabs 12 and the corresponding flukes 8 to be fixed before sale, and also enables the whole sheet 2 to be folded to give it a flat shape for transport and stocking (not illustrated in the figures). When neede for use it is sufficient to distance the longitudinal tabs 18 from the base 5 in order to open the sheet 2 and thus open the container 1. In this embodiment the longitudinal walls 6 and the transversal walls 7 provide a rest surface for the cover 33, as shown in figure 8.

The sheets 2 of figures 1 and 2 can easily be stacked and transported as shown. The container

made from the sheet 2 of figures 1 or 2 is created by folding the connecting tabs 12 one towards another. Then the longitudinal walls 6 are folded, one towards another, up until the connecting tabs 12 are in contact with the transversal folds 4 (see figure 4). The transversal walls 7 are then folded up until they contact with the external sides of the connecting tabs 12, and the flukes 8 are folded up until they contact with the internal sides of the connecting tabs 12 (figure 4). Once this final operation is complete, the meshing teeth 14 are inserted in the respective seatings 15 in order to block the flukes 8, and at the same time the connecting tabs 12 are gripped between the transversal walls 7 and the flukes 8 (see figure 6). Once the product has been arranged in the container, the longitudinal tabs 18 are bent externalwise and the closing flaps 10 internalwise, with the closing flap 10 provided with the central supporting tab 24 and the support wings 25 below (in figure 6 where the upper closing flap 10, not yet brought into its closing position, has not been illustrated). To complete the closure of the container 1, the vertical stiffening flukes 16 are folded and the locking and closing tabs 21 are inserted into their respective recesses 27 and seats 23 (see figure 9). The locking and closing tabs 21 can be blocked in position by the product itself.

After having folded the longitudinal tabs 18 one towards another to create the handle 20, the container 1 is ready to be transported together with the product.

When more than one container 1 is to be transported, they can be stacked on on top of another, since they are flat. Their mechanical resistance to stacking is good, as they are truncoconical. Further to the stiffening flukes 16, the cover 33 also rests on the transversal walls 7 over their entire length (see figure 8), or over part of them (see figure 6 where the cover 33 rests centrally on the upper upper central fluke 31, and also figure 7 where the cover 33 rests laterally on the portions 35). In the embodiment of figure 8, the cover 33 rests on the transversal walls 7 for all of their length, and their stiffness is guaranteed by the rigid connection with the longitudinal walls 6. In the embodiments of figures 6 and 7, on the other hand, the rigidity of the transversal walls 7 is guaranteed by their triple thickness aas they are constituted, as can be seen in the background of figure 4, by the transversal walls 7, the connecting tabs 12 and the flukes 8.

The presence of the the central supporting tab 24 and the support wings 25 increases the rigidity and resistance of the cnetral part of the cover 33 constituted by the closing flap 10, and allows a product not resting on the transversal walls 7 to be arranged on it.

To increase the container's 1 practicality, especially in cases where (see figure 4) it constitutes a package for pastry products 46, the folds 11 can be made as weakening lines, such that when the container is opened the closing flaps 10 can be easily taken away, thus avoiding the generation of irregular edges. The container 1 opened thus can be directly used as a shop display container 1.

Figure 12 shows the container 1 employed as a package for clothes 37. In this case the closing flaps 10 do not exhibit longitudinal tabs 18 hinged to them at the folds 19. Obviously the closed container 1 (see figure 13) does not have a handle 20.

The container 1 allows for considerable economies from the production point of view, since the sheet 2 is rectangular and waste is therefore minimal. in particular, the maximum size of the containers 1 is constituted by the locking and closing tab 21 and the meshing teeth 14 on one side and the closing flap 10 on the other side. Figures 1 and 2 show how the longitudinal tabs 18 are made from the closing flap 10 but do not exceed them in length.

Figure 14 shows an embodiment in which the cuts 26 are inclined with respect to the transversal dimension of the sheet 2, with the sides 43 thus forming an angle alpha which is greater than 90 degrees with the transversal fold 4, and the sides 44 of the connecting tabs 12 form an angle beta in addition to alpha with the fold 13.

It is thus evident how each of the transversal walls 7 and each of the connecting tabs 12 exhibit an isosceles trapezoid shape; the smaller base of the transversal walls 7 coinciding with the transversal fold 4, through which they are hinged to the base 5, and the larger base of the connecting tabs 12 coinciding with the fold 13.

The transversal walls 7 each exhibit two folds 9 inclined with respect to the transversal folds 4 but with an opposite inclination with respect to the cuts 26 and thus to the sides 43. The folds 9 start from the top of the base 5 and develop in the direction of the longer base of the transversal wall 7. They define the flukes 8 bilaterally to the transversal walls 7.

The flukes 8 are triangular and are divided by the connecting tabs 12 by the cuts 26. This conformation, together with the ones described above referring to this part of the sheet 2, enable the connecting tabs 12 and the flukes 8 to be fixed before the container is presented for sale, with it also being possible to fold the whole sheet 2 until it assumes a flat pack form, as shown in figure 15, for transport and stocking purposes, which can speedily be assembled into a container 1 when needed.

In particular, each connecting tab 12 is fixed to a transversal wall 7 with its side 44 facing on to the longer free base of the transversal wall 7: since the cuts 26 are inlined, and the sides 30 of the transversal wall 7 form an angle alpha which is greater than 90 degrees with the transversal fold 4, and the sides 44 of the connecting tabs 12 form an angle beta supplementary to alpha with the fold 13, the longitudinal

walls 6 will form an angle A equal to alpha with the base 5. Further, the inclination of the two folds 9 is such as to permit, once each connecting tab 12 has been connected with a nearby fluke 8, a pack folding of the sheet 2 with each of the transversal walls 7 interposed between the base 5 and the fluke 8 and the connecting tabs 12 all covered by the longitudinal walls 6.

With particular reference to figures 20, 21 and 22, one only of the two longitudinal walls 6 exhibits a closing flap 10, hinged to it at a fold 11 parallel to the longitudinal folds 3. When the container 1 is mounted the closing flap 10 constitutes a cover 33, as can be seen in figure 22.

With reference to figure 20, the stiffening flukes 16 are two in number and are arranged at opposite sides of the free end part of the closing flap 10.

They can be limited in size, as indicated by the broken lines 45, or can exhinit an extension inclined towards the fold 11, which defines a further portion of fluke 16'. With reference to figure 22, there is only one stiffening fluke 16, connected to the free side of the closing flap 10, opposite and parallel to the fold 11. The stiffening fluke 16 is however hinged along a fold denoted by 17.

Each seat 23 for a locking and closing tab 21 is made inferiorly in a corresponding transversal wall 7 (figures 14 and 21) when the locking and closing flap 21 are two in number and arranged on opposite sides of the closing flap 10. Alternatively, it can be made inferiorly in the corresponding longitudinal wall 6, opposite to the other wall 6 to which the closing flap 10 is hinged.

With reference to figure 14, the closing flap 10 is provided at its central zone (denoted by C) with three distinct folds, denoted by 19, 19' and 19". The hinges are parallel and externally define two equal portions 10' and 10" of the closing flap 10, and internally two longitudinal tabs 18. The longitudinal tabs 18 are also provided with closed recesses 38 defining corresponding apertures 39.

In this case the portions 10" of the closing flap 10 not hinged to the longitudinal wall 6 bilaterally exhibits its vertical stiffening flukes 16 hinged to them along respective transversal folds 17.

The vertical stiffening flukes 16, measured perpendicularly to the respective folds 17, are equal in size to the transversal dimension of the longitudinal walls 6 and the transversal walls 7. Further, the closing flap 10 has a longitudinal size L and a transversal size T, measured between folds 19 and 19", which are equal to the aperture size of the container 1 when assembled.

The longitudinal tabs 18 will be superposed one on another, folding along folds 19, 19' and 19", and will be fixed in such a way as to generate (in cooperation with the aperture 39) a carrying handle.

Once the longitudinal tabs 18 have been fixed to each other, the portion 10" of the closing flap 10 can be folded about the fold 19" up until it is superposed on the other portion 10'. Then the two portions 10' and 10" are folded on the fold 11 and are supporposed on the transversal walls 7 and the longitudinal wall 6 already arranged as above. During this operation the stiffening flukes 16 are also folded, together with their locking and closing tabs 21 towards the portion 10" of the closing flap 10 such as to be interposed between the closing flap 10 and the longitudinal wall 6, as is shown in figure 15 by a broken line. In this way the container 1 is disposed as in figure 15, ready to be used and mounted according to the phases illustrated in figures 16, 17 and 18. After having fixed the connecting tabs 12 on the flukes 8, the longitudinal tabs 18 to each other, and afer having folding the sheet 2 in to its pack configuration (figure 15), as described above, the container is obtained by raising the closing flap 10 in the direction of arrow F1 of figure 15, and folding the transversal walls 7 upwards according to arrows F2 of figure 16, which transversal walls 7 draw the connecting tabs 12 with them, pushing the longitudinal walls 6 and forcing them to be arranged vertically by folding in a direction according to arrows F3. Once the conformation in figure 17 has been achieved, a meshing tooth 14 is folded internalwise of the container 1 and according to arrows F4. The meshing tooth 14 is provided on the transversal wall 7 at fold 41, and constitutes when parallel to the base 5 a stiffening element for said transversal wall 7. Then the portion 10" of the closing flap 10 is folded away from the other portion 10' according to the direction indicated by arrow F5 in figure 16, and thereafter all of the closing flap 10 is folded about fold 11 10 towards the transversal wall 7 and according to the direction indicated by arrow F6, up until the container is closed as illustrated in figure 18, the closing flap 10 striking against a longitudinal tab 31 provided on the longitudinal wall 6 (and hinged to it along fold 42) opposite to the longitudinal wall 6 the closing flap 10 is hinged to. Once again, the longitudinal tab 31 constitutes a stiffening element for the longitudinal wall 6. Figure 18 also illustrates the blocking phase of the cover 33, obtained through the stiffening flukes 16 with the respective locking and closing tabs 21, which are folded according to the direction of arrows F7 and introduced into the corresponding seats 23, as illustrated in figure 19.

Figure 21 shows a further embodiment of the container 1 where the handle is obtained through a manual grip 36 constituted for example by a tape applied directly on the closing flap 10 of the container 1.

Figure 19 shows the container used as a package for clothes 37.

The solution described herein clearly achieves the set aims. The special conformation of the closing flap 10 permits an operative in a baker's shop to open

the container on three sides, while the pack conformation possibility of the sheet 2 enables the container to be mounted quickly and easily when it is needed.

## Claims

1. A packing container of the type constituted by a single sheet (2) having a plurality of longitudinal folds (3) and transversal folds (4) defining at least a base (5), longitudinal walls (6) and transversal walls (7) of the container (1) when mounted, characterised in that the longitudinal walls (6) are bilaterally provided with connecting tabs (12) transversally hinged to the longitudinal walls (6) and arranged bilaterally to the transversal walls (7), said connecting tabs (12) being separated from the longitudinal walls (6) by cuts (26), and being destined to cooperate with the longitudinal walls (6) when the container (1) is assembled, at least one of the longitudinal walls (6) being provided with a closing flap (10) constituting, when the container (1) is closed, a cover (33) of the container (1), and exhibiting, on at least one free edge, and hinged to the free edge along a respective second fold (17), at least one vertical stiffening fluke (16) provided with at least one locking and closing tab (21) hinged to the stiffening fluke (16) along a respective third fold (22), said stiffening fluke (16) being destined to insert in a seat (23) made inferiorly in the transversal wall (7) or in the longitudinal wall (6).

2. A container as in claim 1, characterised in that the transversal walls (7) are each provided with a fluke (8) hinged to them at a fourth, transversal, fold (9) and the longitudinal walls (6) are provided with closing flaps (10) parallel to the longitudinal walls (6), and hinged to them along first longitudinal folds (11), and are further provided with connecting tabs (12) hinged to them at fifth transversal folds (13); each of the flukes (8) being provided, along a free longitudinal side, with at least one meshing tooth (14) destined to be inserted and blocked in a respective seating (15) on the base (5) after the connecting tabs (12) of each longitudinal wall (6) have been folded one towards the others, after the transversal walls (7) and the longitudinal walls (6) have been fold one towards the others up until the transversal walls (7) have been brought into contact with the external sides of the connecting tabs (12) and after the flukes (8) have been folded up until they contact the internal and free side of the connecting tabs (12); the closing flaps (10) bilaterally exhibiting vertical stiffening flukes (16), which are hinged to the closing flaps (10) along transversal folds (17) and which are destined to cover the transversal walls (7) externally; at least two of the vertical stiffening flukes (16) being provided with locking and closing tabs (21) hinged to them along the third transversal folds (22) and destined to be inserted in seats (23) made inferiorly in the transversal walls (7).

3. A container as in claim 2, characterised in that the closing flaps (10) each exhibit a width which is such that they partially overlap during assembly of the container (1) and that they exhibit c-shaped longitudinal tabs (18) on their free longitudinal sides, which tabs (18) are hinged to them along sixth folds (19) and create, when the container (1) is mounted, a handle (20); a first closing flap (10) being destined, when the container is mounted, to be partially arranged below a second closing flap (10), said first closing flap (10) exhibiting a central supporting tab (24) and two support wings (25) for supporting the second closing flap (10), defined by the longitudinal tab (18); the second closing flap (10) being provided with vertical stiffening flukes (16) equipped with the locking and closing tabs (21).

4. A container as in claim 1, characterised in that each of the transversal walls (7) has an isosceles trapezoid conformation and is separated from each of the connecting tabs (12) by a cut (26) forming and angle (alpha) with a contiguous transversal wall (7); each of the connecting tabs (12) being of a height, measured perpendicularly to the cut (26), which is not greater than a height of the transversal walls (7) and permitting the longitudinal walls (6) to form, with the base (5) when the container (1) is assembled, an angle (alpha) equal to a base of a pyramidal conformation of the transversal walls (7), the vertical stiffening flukes (16) being of a size measured perpendicularly to the folds (17) which is equal to the transversal size of the longitudinal walls (6) and the transversal walls (7) and being of a size, measured perpendicularly to the folds (17), which is equal to a transversal size of the longitudinal walls (6) and the transversal walls (7).

5. A container as in claim 2, characterised in that when the container (1) is mounted, the external vertical stiffening flukes (16) each exhibit a locking and closing tab (21), and the internal vertical stiffening flukes (16) each exhibit a recess (27) corresponding to the seating (23) of the transversal wall (7).

6. A container as in claim 2, characterised in that the flukes (8) have consecutive cuts (30) defining corresponding upper longitudinal tabs (31) which are an integral part of the transversal walls (7)

and which constituted, when the container (1) is mounted, a central support element for the cover (33).

**7.** A container as in claim 2, characterised in that each of the connecting tabs (12) exhibits, in proximity of the fourth folds (13), a portion (35) being of a same height as the longitudinal walls (6), which portion (35) constitutes, when the container is mounted, a lateral support element for the cover (33).

**8.** A container as in claim 2, characterised in that the fourth folds (9) are inclined with respect to the transversal folds (4) and start from a top of the base (5), the inclination of the second folds (9) being such as to permit of a rigid connection of each connecting tab (12) with its nearby fluke (8) and a pack-folding of the sheet (2) with each of the transversal walls (7) being interposed between a lower base (5) and the fluke (8) and the upper connecting tabs (12) and reciprocally rigidly connected and covered by the longitudinal walls (6).

**9.** A container as in claim 1, characterised in that the first fold (11) is a perforated line (11a) aimed at permitting of removing a portion from the flap (10), leaving a linear torn edge.

**10.** A container as in claim 1, characterised in that the closing flap (10) has, at a central zone (C), a manual handle (36) for the mounted container, which is directly applicable on the closing flap (10).

**11.** A container as in claim 1, characterised in that the closing flap (10) has at its central zone (C) three distinct fold lines (19, 19' and 19"), parallel to each other and defining externally two equal portions (10', 10") of the closing flap (10) and internally two longitudinal tabs (18) both provided with closed recesses (38) defining corresponding apertures (39) and destined one to be superposed on another, by folding along the folds (19, 19' and 19"), and fixed among themselves in such a way as to create, when the container is mounted and in cooperation with the apertures (39), a handle (20); the portion (10") of the closing flap (10) which is not hinged to the longitudinal walls (6) exhibiting on at least one free edge and hinged to it along a fold (17), at least one vertical stiffening fluke (16) provided with at least one locking and closing tab (21) hinged to it along a third fold (22) and destined to be inserted in at least one seat (23) made inferiorly in the transversal wall (7) or in the longitudinal wall (6).

**12.** A container as in claim 11, characterised in that the portion (10") of the closing flap (10) not hinged to the longitudinal wall (6) bilaterally exhibits vertical stiffening flukes (16) hinged to it along folds (17) and destined, when the container (1) is mounted, to cover the transversal walls (7) partially and externally, the vertical stiffening flukes (16) being provided with locking and closing tabs (21) hinged to them along third transversal folds (22) and destined to be inserted in seats (23) made inferiorly in the transversal walls (7).

**13.** A container as in claim 11, characterised in that the closing flap (10) exhibits longitudinal dimensions (L) and transversal dimensions (T), which transversal dimensions (T) are calculated to be less than a tract running between the folds (19 and 19'), and equal to the dimensions of the aperture in the mounted container (1).

**14.** A container as in claim 1, characterised in that each of the transversal walls (7) and each of the connecting tabs (12) have an isosceles trapezoid shape, the transversal walls (7) having a smaller base which coincides with the transversal fold (4) by which they are hinged to the base (5), and the connecting tabs (12) having a greater base which coincides with the fifth fold (13) by which they are hinged to the longitudinal walls (6); the cuts (26) defining the sides (43) of the transversal walls (7) and the sides (34) of the connecting tabs (12), the sides (43) forming an angle (alpha) which is greater than 90 degrees with the transversal fold (4) and the sides (34) forming an angle (beta) which is supplementary to angle (alpha) with the fifth fold (13) in such a way that when the container is assembled, with each of the connecting tabs (12) fixed to a respective transversal wall (7) with its side (34) along the free larger base of the transversal wall (7), the longitudinal walls (6) form an angle (A) equal to angle (alpha) with the base (5).

**15.** A container as in claim 1, characterised in that each of the transversal walls (7) exhibits two folds (9) which are inclined with respect to the transversal folds (4), with an inclination which is opposite to the inclination of the sides (43), starting from the top of the base (5) and going towards the larger base and defining, bilaterally to the transversal wall (7), a pair of flukes (8), the inclination of the fourth folds (9) being such as to permit, once each connecting tab (12) has been rigidly connected to a nearby fluke (8), a pack-folding of the sheet (2), with each of the transversal walls (7) being interposed betweeen the lower base (5) and the flukes (8) and the connecting tabs (12) all covered by the longitudinal walls (6), each of the transversal walls (7) exhibiting, at a

free larger base, a tab (40) hinged to the transversal wall (7) by a fold (41), said tab (40) forming, when the container is mounted and the tab (40) is folded internalwise of the container (1), a structural stiffening element for the transversal wall (7).

**16.** A container as in claim 1, characterised in that the longitudinal wall (6) opposite to the longitudinal wall (6) to which the closing flap is hinged (10) is provided with a longitudinal tab (31) hinged to it along a fold (42), the tab (31) constituting, when the container is mounted and after the tab (31) has been folded internalwise of the container (1), a stiffening element for the longitudinal wall (6).

FIG 1

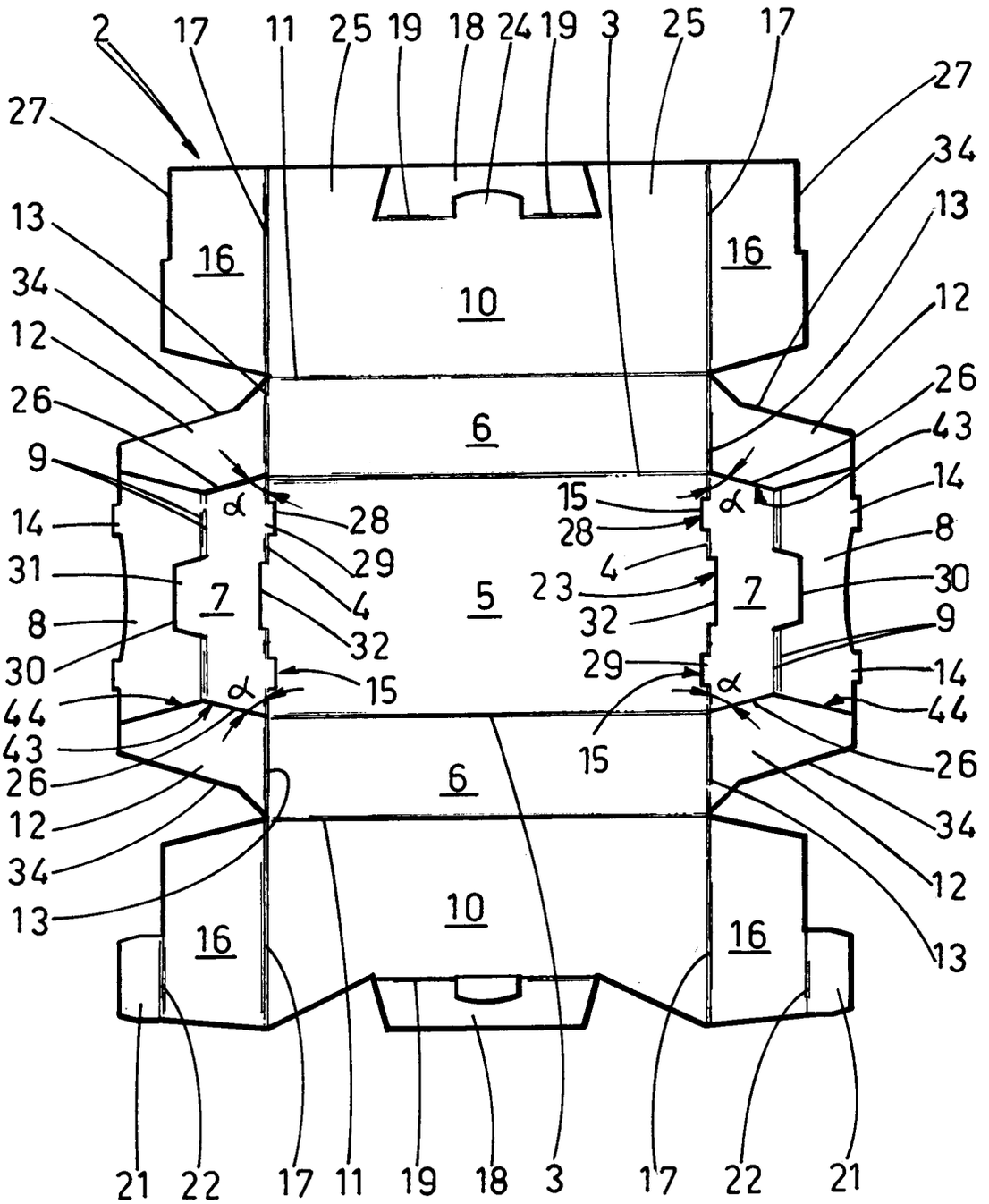

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FIG 2

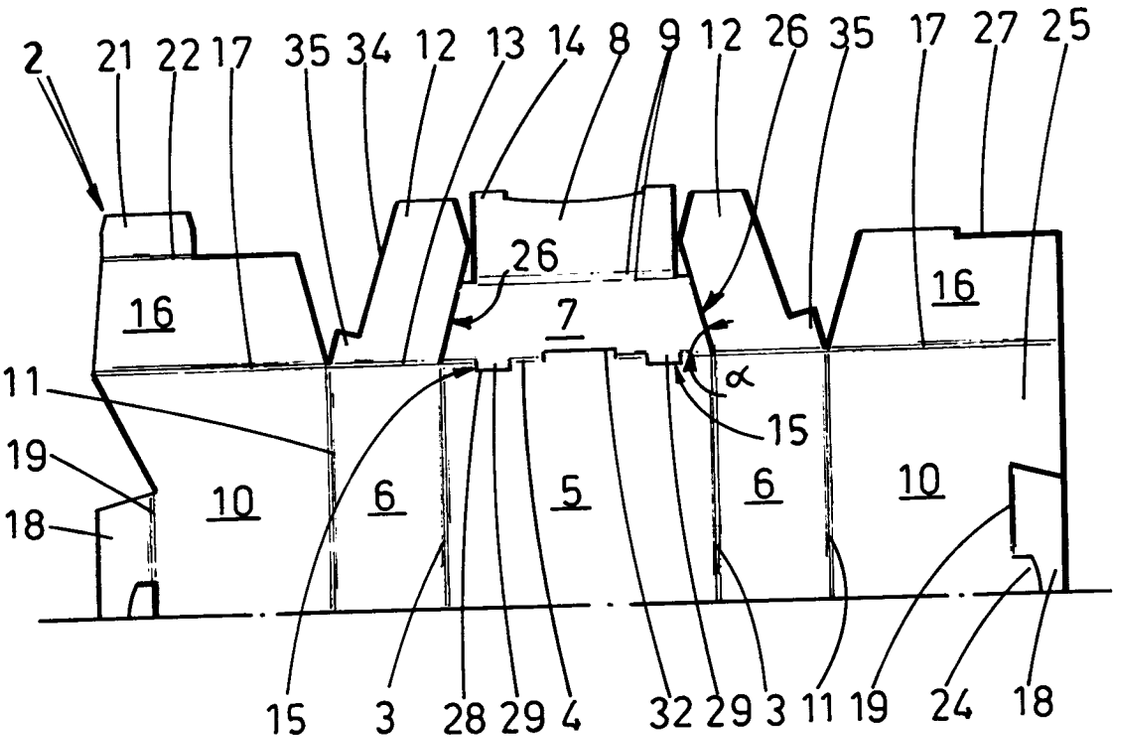

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FIG 3

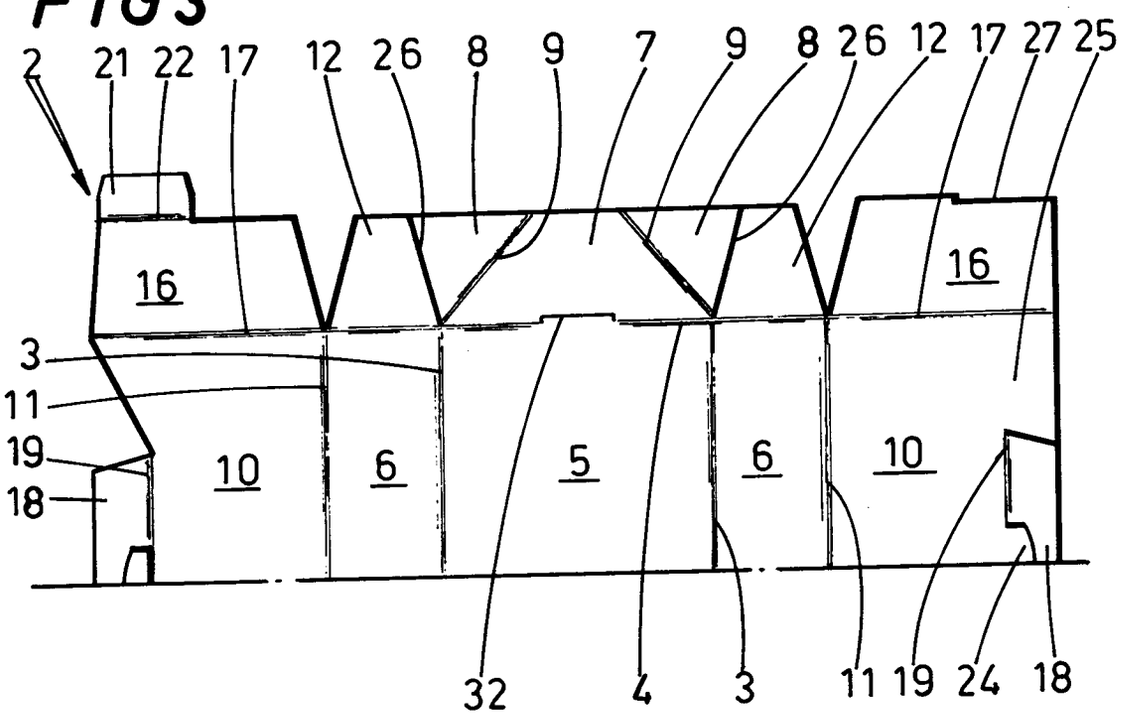

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FIG 4

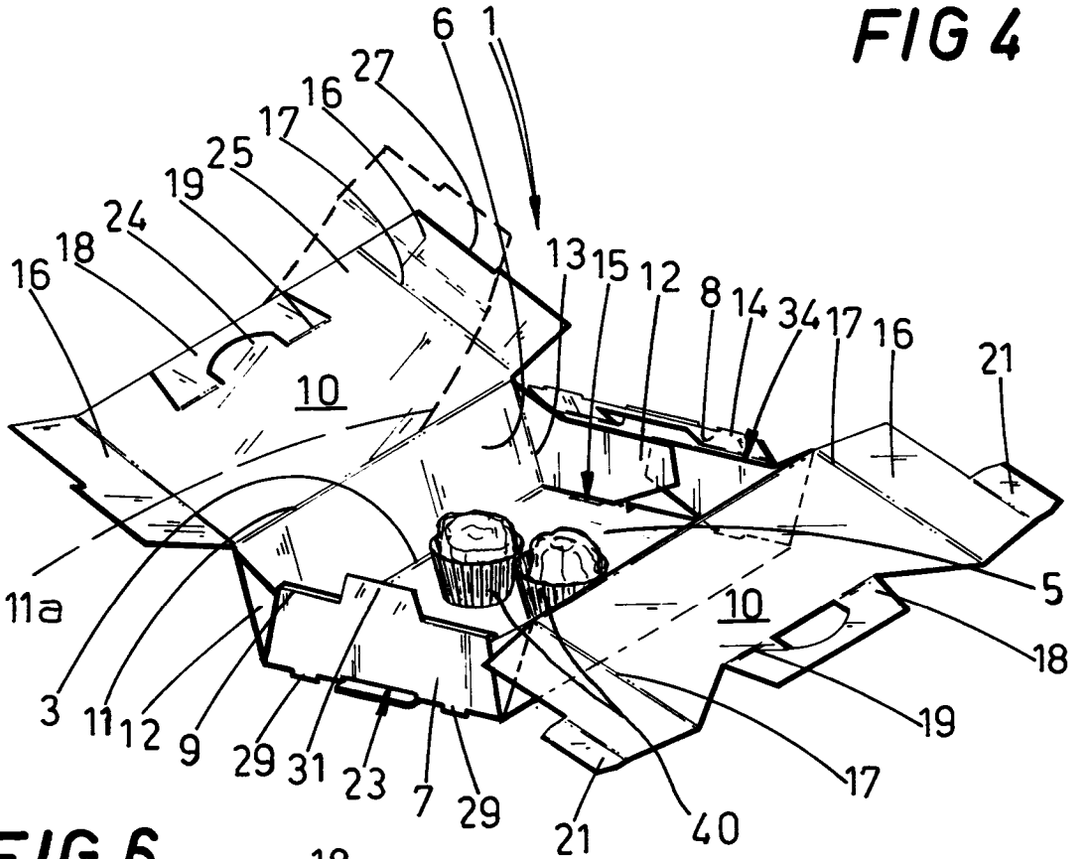



FIG 6

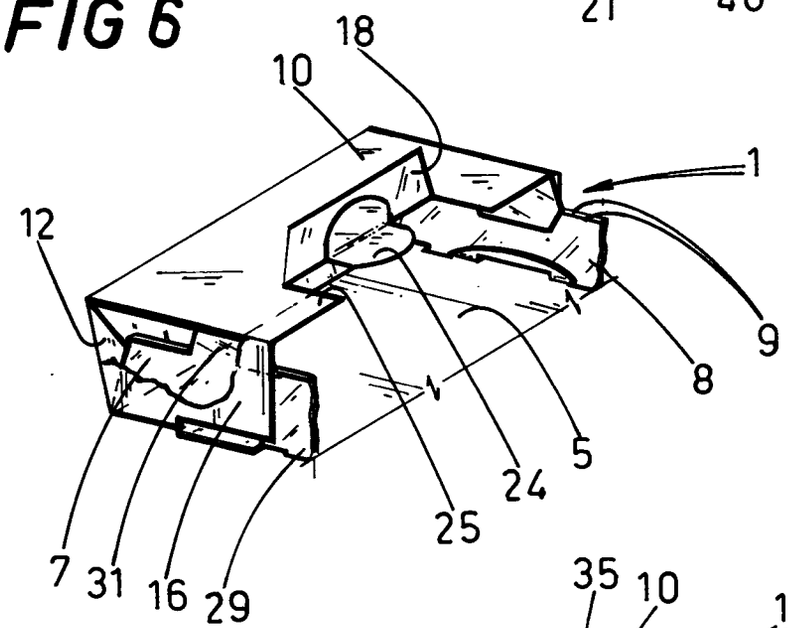



FIG7

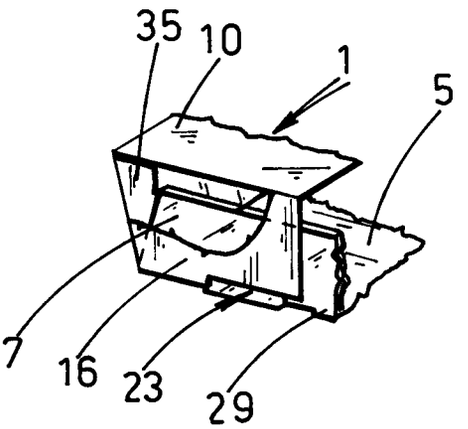


FIG 5

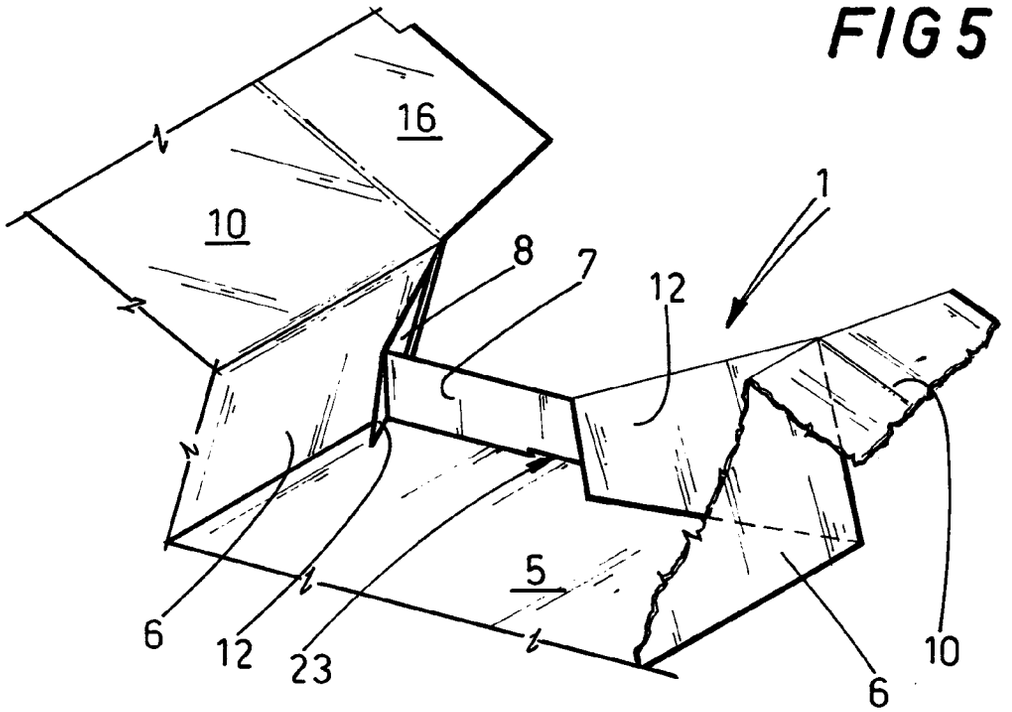



FIG 8

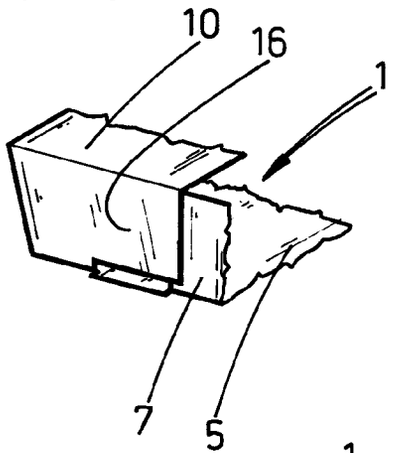



FIG 9

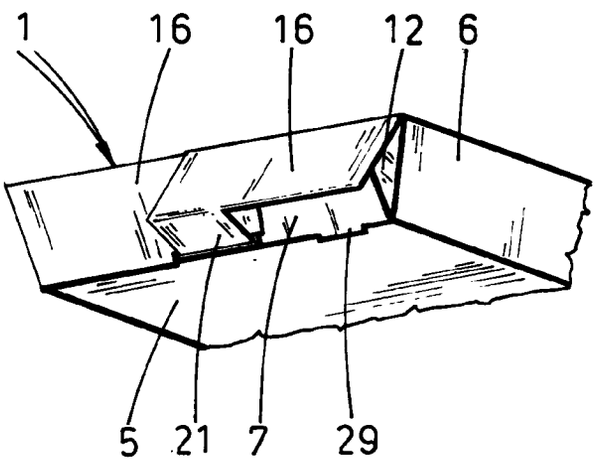


FIG 10

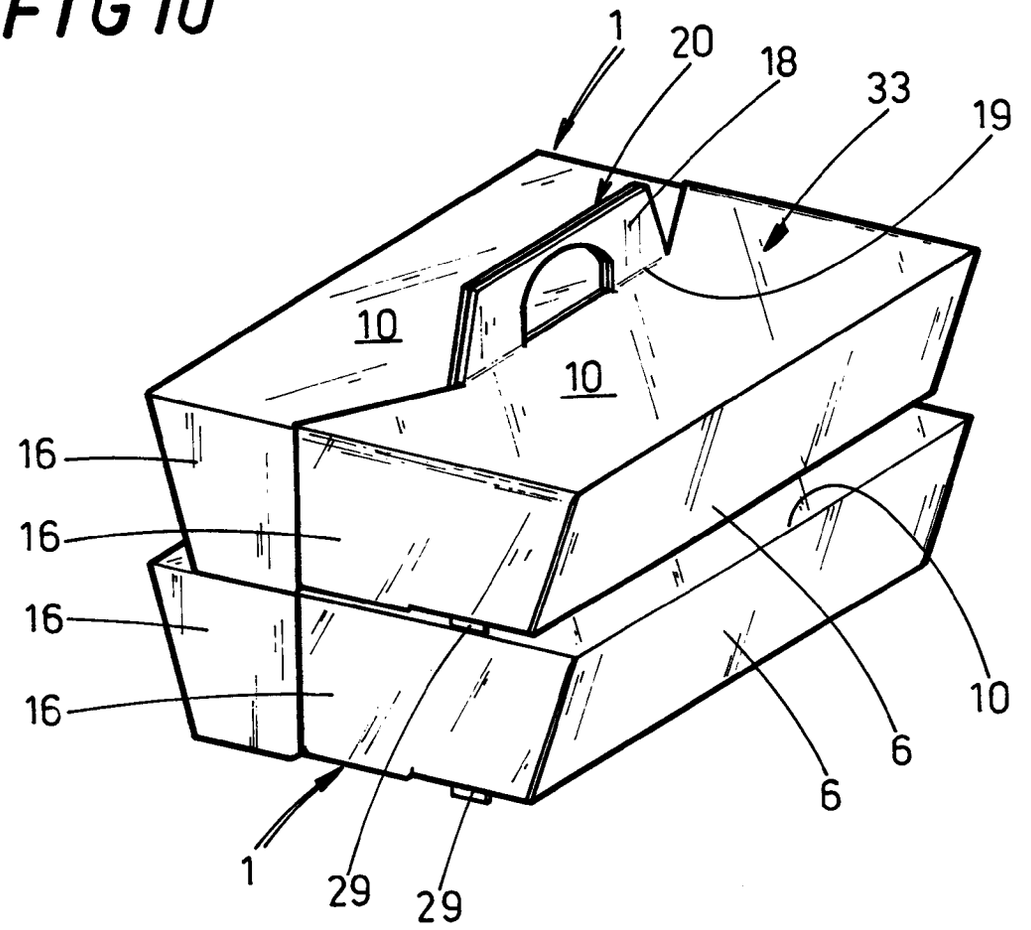



FIG 11

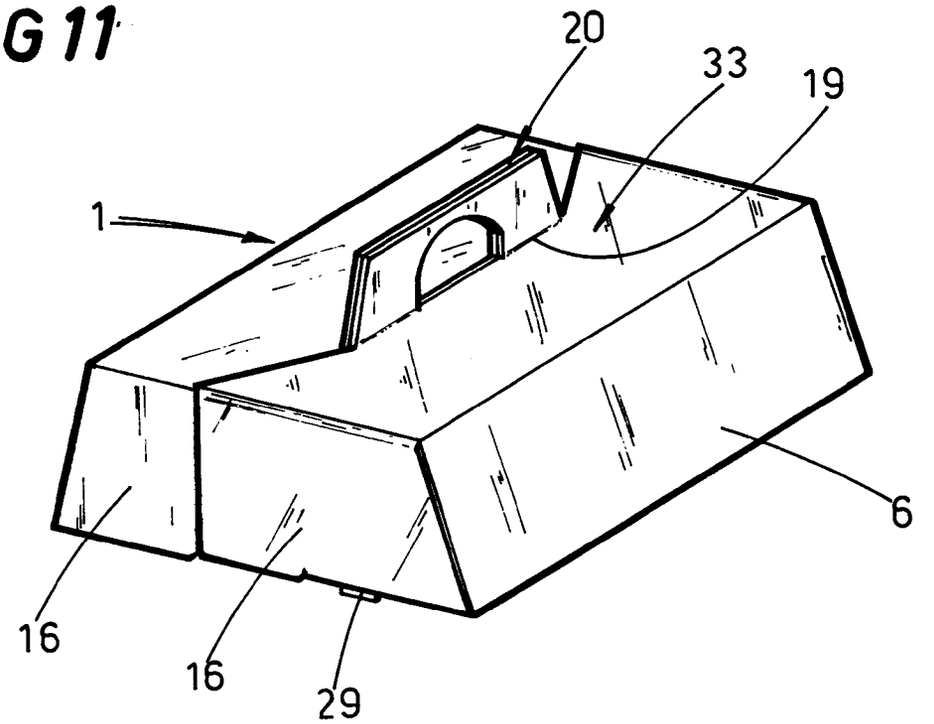


FIG12

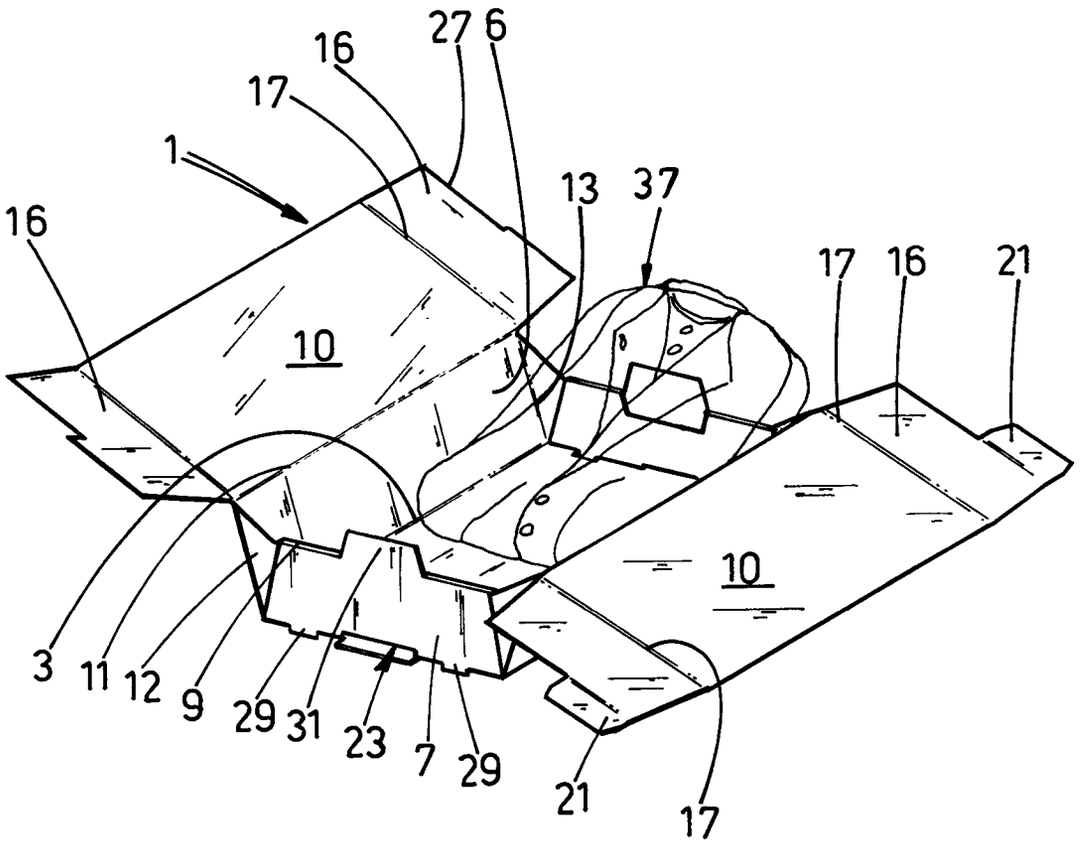

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FIG13

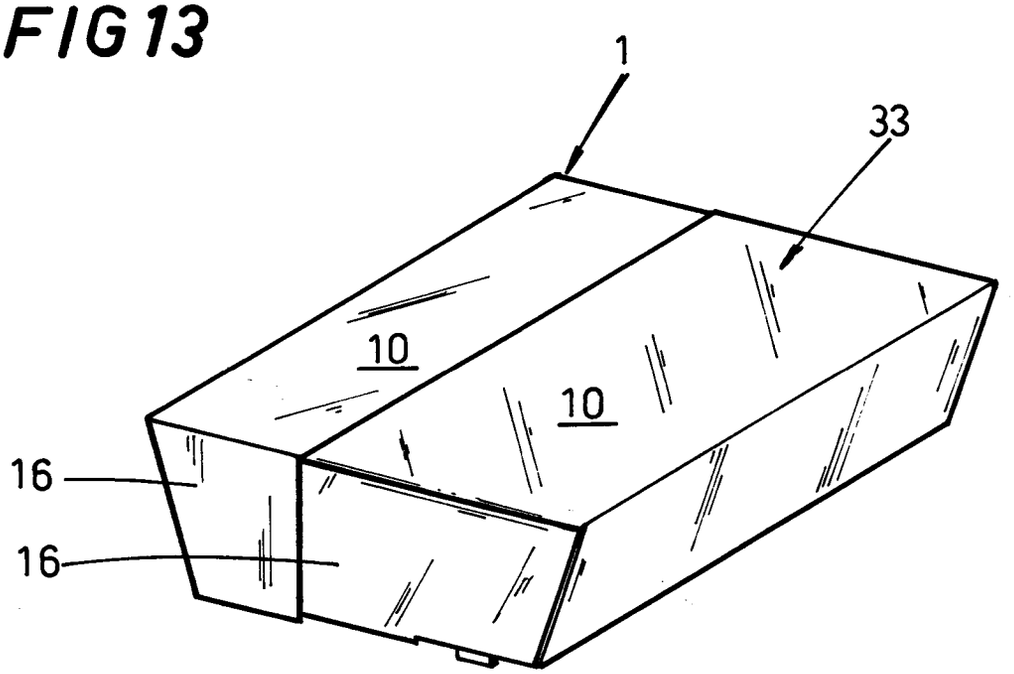

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FIG 14

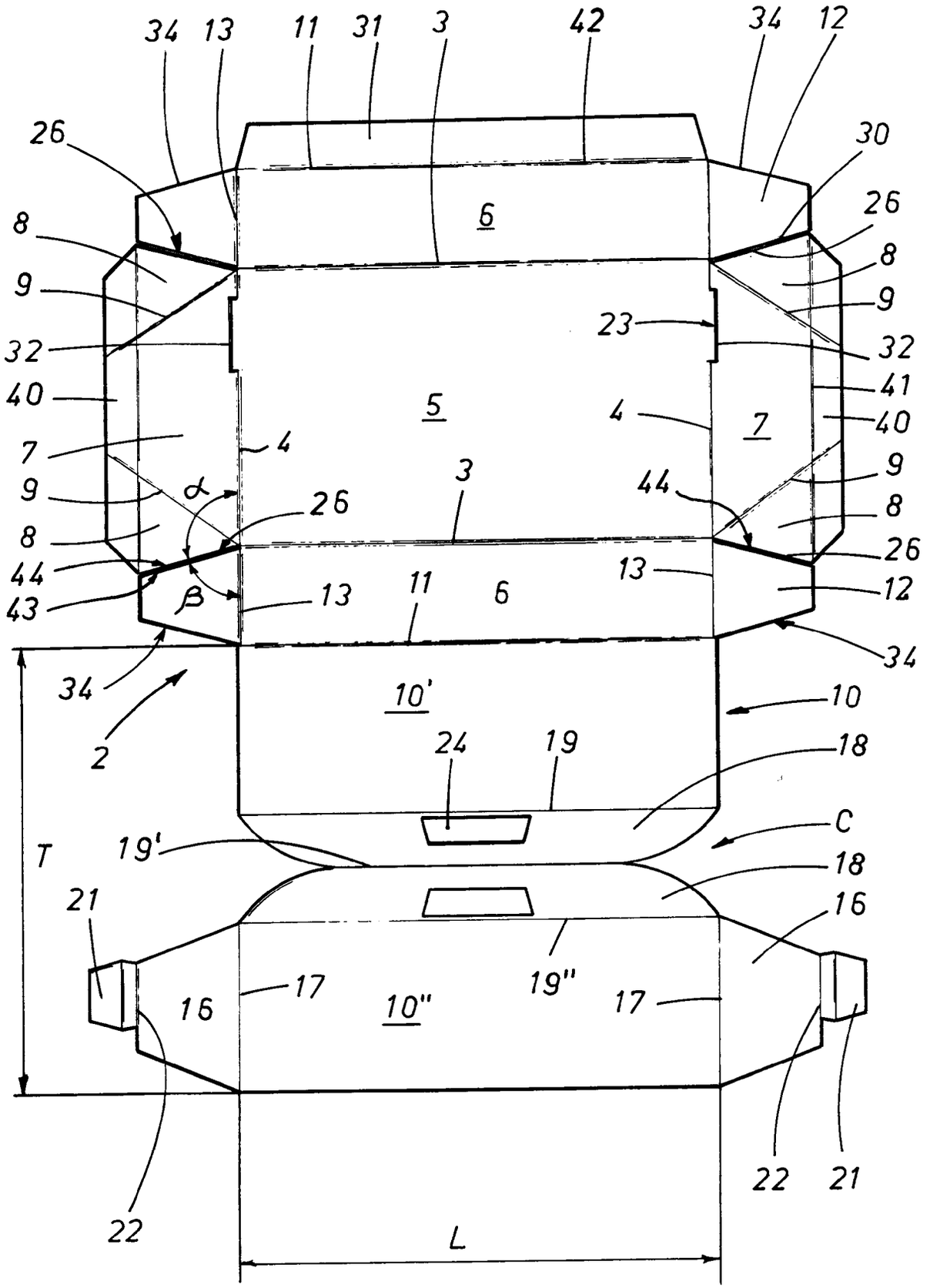

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FIG15

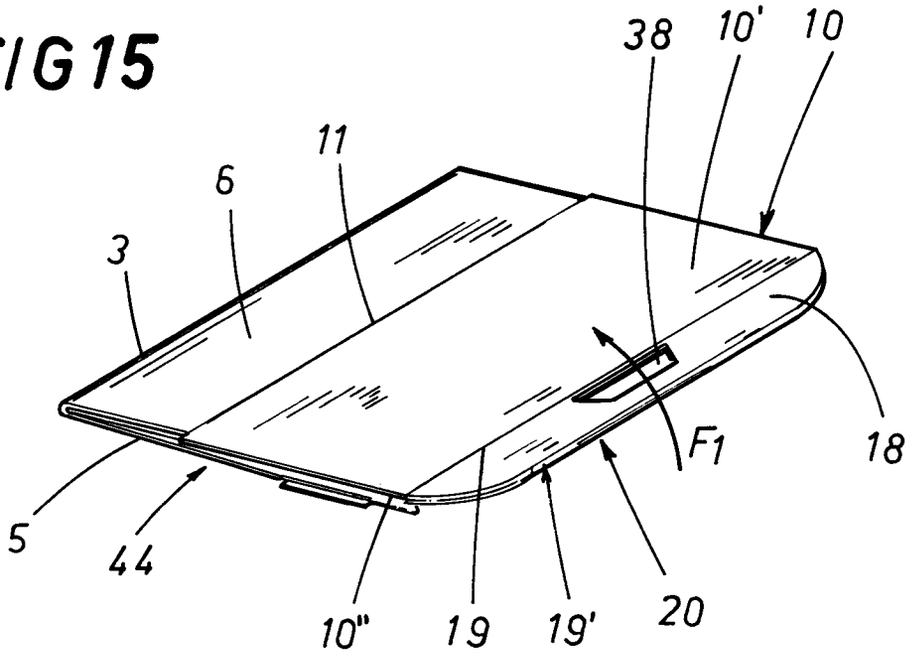



FIG19

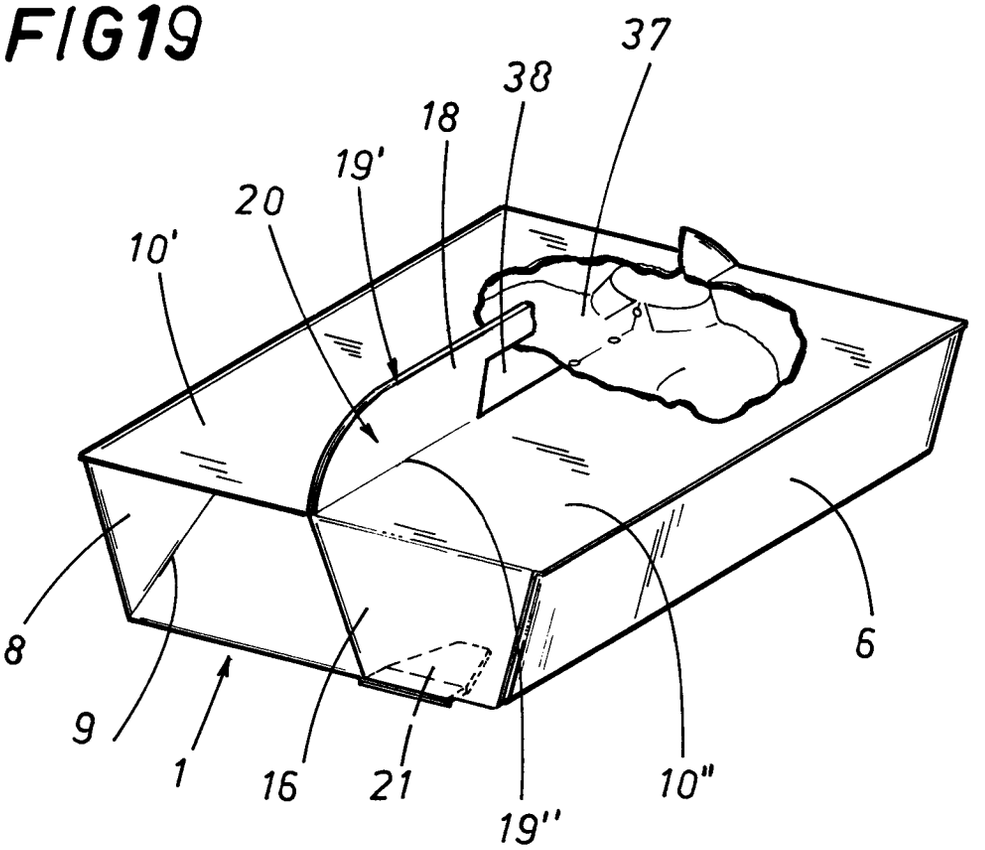


FIG16

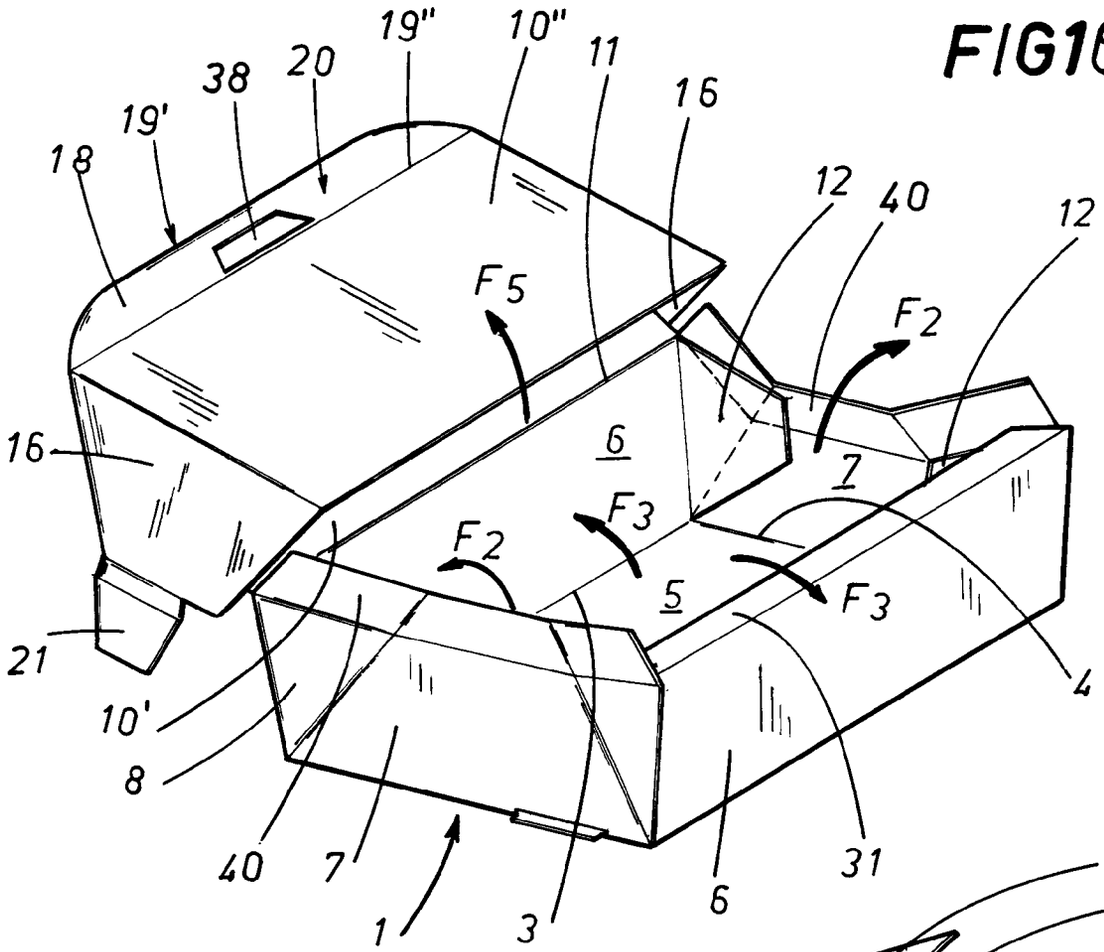

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FIG17

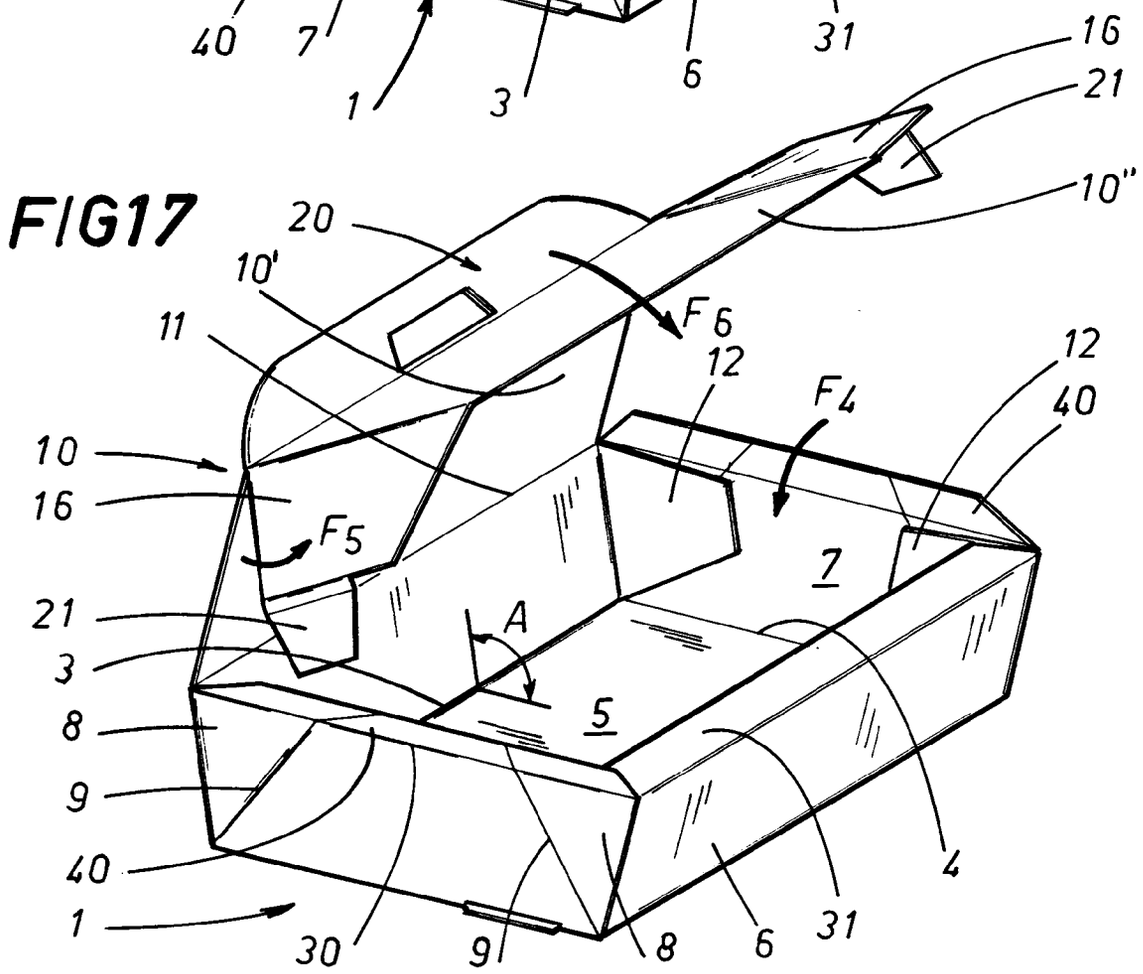

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FIG 18

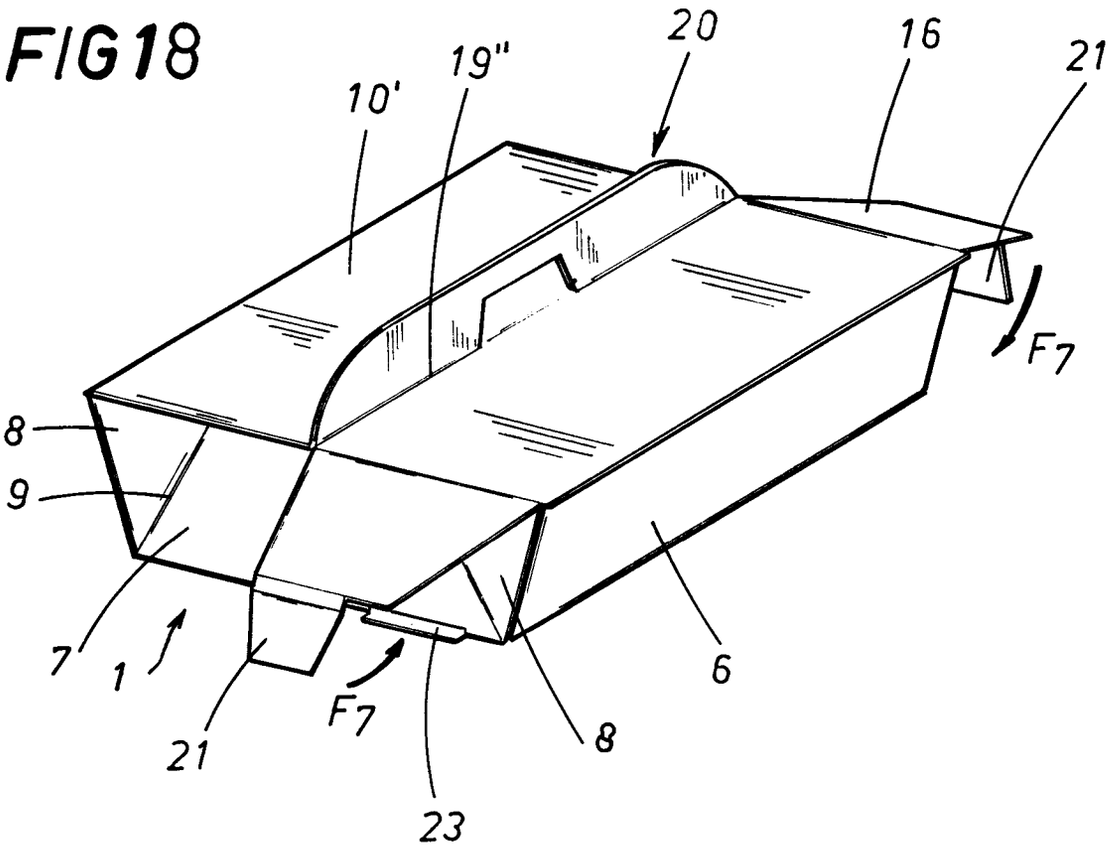



FIG 21

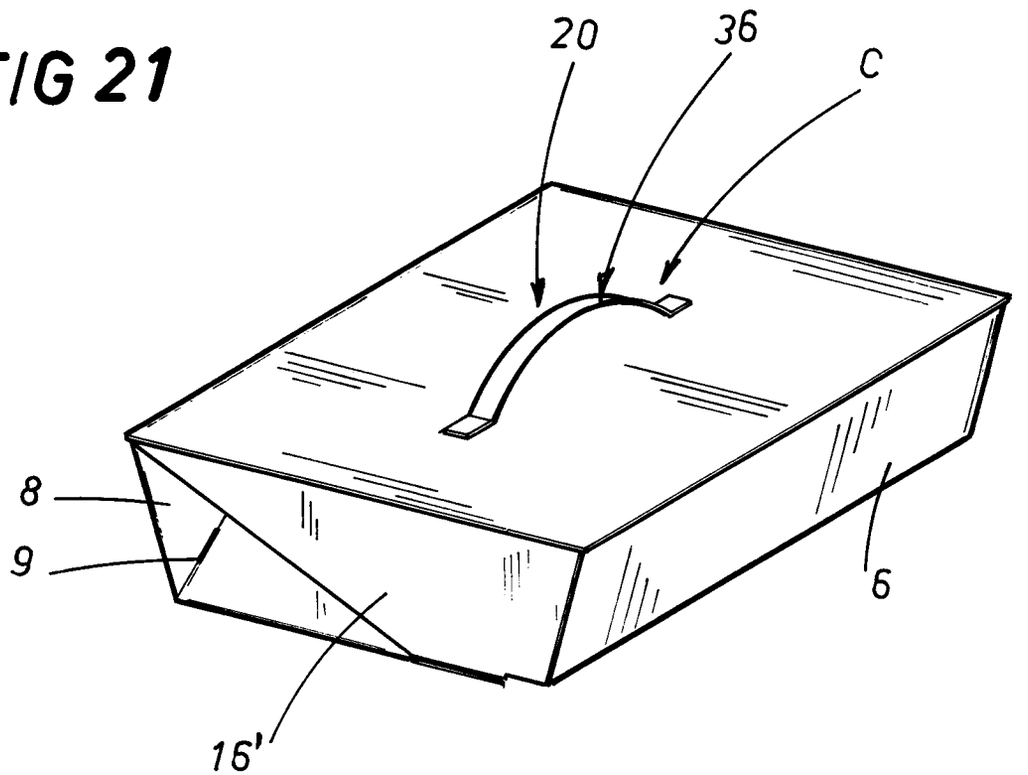


FIG22

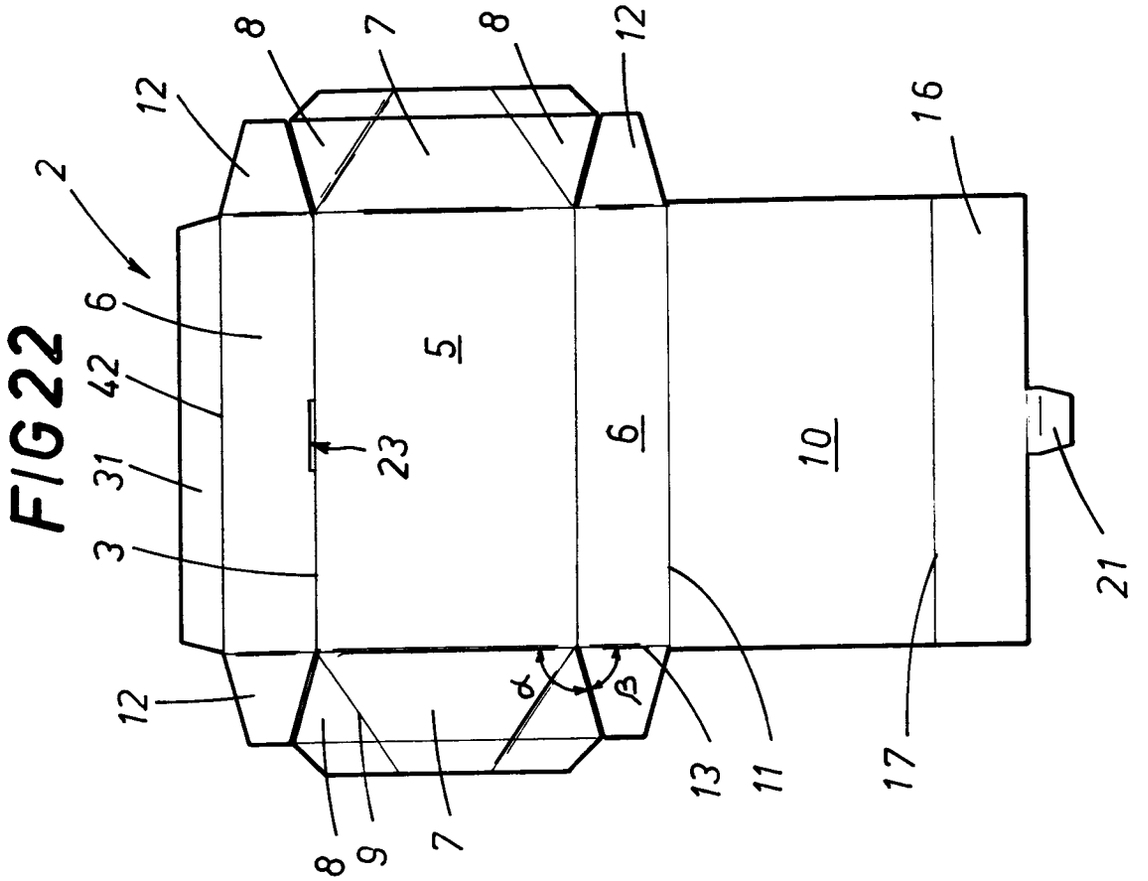
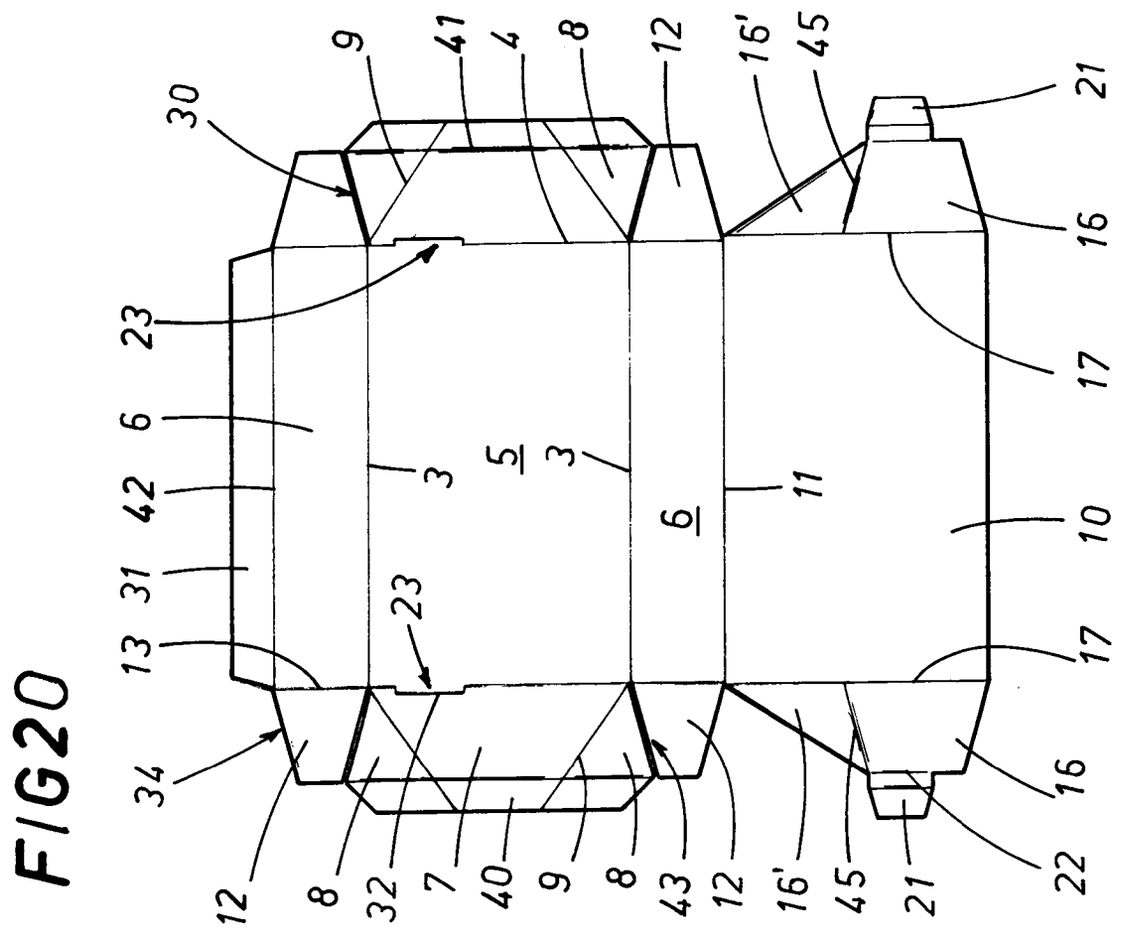

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FIG20


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European Patent Office

# EUROPEAN SEARCH REPORT

Application Number
EP 94 83 0060

## 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.5) |
|---|---|---|---|
| X<br>A | FR-A-2 276 229 (SOC. CAPRON)<br>* figure 1 * | 1<br>3,5,11,<br>14 | B65D5/36<br>B65D5/22<br>B65D5/66<br>B65D5/46 |
| Y | US-A-4 168 028 (R.J.MCCALL)<br>* abstract; figures * | 1,2 | |
| Y | FR-A-2 483 884 (M.PARROCCHIA)<br>* figure 1 * | 1,2 | |
| A | GB-A-2 076 782 (LEAMINGTON BOX COMPANI)<br>* figure 1 * | 1,3,5,14 | |
| A | US-A-4 362 266 (G.P.WEIBINGER)<br>* figure 2 * | 7 | |
| A | US-A-3 658 237 (K.ENGEL)<br>* column 5; figures 1,5 * | 16 | |
| A | US-A-2 221 368 (J.A.BUSER)<br>* figures 8,10 * | 6 | |
| A | US-A-1 725 524 (M.R.KONDOLF) | | TECHNICAL FIELDS SEARCHED (Int.Cl.5)<br>B65D |
| A | BE-A-675 060 (A.WALL GRAPHISCHER GROSSBETRIEB) | | |
| A | US-A-4 257 550 (S.G.FROHILICHER) | | |
| A | CH-A-269 963 (FRATELLI RODA) | | |

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 16 June 1994 | Zanghi, A |

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