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(54) **Pliable box**

(57) Box made of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel (2) having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls (3a,4a,5a,6a) connected to the first edges via a folding line and two second upright walls (3b,4b,5b,6b) connected to the second edges via a folding line, in which the first (3a,4a,5a,6a) and the second (3b,4b,5b,

6b) upright walls each comprise two wall panels that are spaced apart in order to define a hollow wall space there in between, in which the first (3a,4a,5a,6a) upright walls are attached to the bottom panel (2) in a collapsible manner and by means of a glue connection and the second upright walls (3b,4b,5b,6b) are attached to the rest of the box through inter-engaging of second coupling means provided on the second upright walls (3b,4b,5b, 6b) and first coupling means provided on the rest of the box.

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Description

[0001] The invention relates to an erectable box, in particular a box made of cellulose material, such as cardboard, for transporting foodstuffs.

[0002] As a result of the development of suitable types of cardboard, it has for some time now been possible to transport food products, such as fruit, in cardboard boxes. The material and/or construction of the box is sufficiently strong to retain sufficient strength when the food secretes juices (such as with tomatoes).

[0003] Usually the boxes are made from a blank that is glued and erected into a ready-made box on machines in the cardboard factory, which are then transported by road or rail to the market gardener/food factory. During transport, however, the erected boxes take up a lot of volume, so that the attainable weight per drive is low.

[0004] A solution for this problem was the so-called quick-erecting-box, which box among others is subject of European patent application 0.109.116. Said box has diagonal folding lines in two opposite walls, and as a result can be completely glued together in the cardboard factory, but transported in a flat-folded, collapsed position to the market gardener and the like. The ready box has single-walled walls, which may or may not be consisting of two layers of solid cardboard glued against each other.

[0005] The increased knowledge regarding the possibilities of cardboard also rendered it possible to pack food products in boxes, which products are perishable and as a result need to be chilled. An example of this is fish.

[0006] Fish was usually transported in polystyrene trays, strong enough for carrying the fish and containing the water from the preserving ice and the fish. A drawback of said trays, however, is that they are not recyclable and -just like the old cardboard boxes already discussed above- both empty and filled take up the same transport volume.

[0007] In the meantime there are also double-walled cardboard boxes available in which fish can be transported and sold. Said boxes are recyclable, but have already been erected in the cardboard factory, so that the volume drawback is still there.

[0008] It is an object of the invention to improve on this. To that end, from one aspect, a box is provided made of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls connected to the first edges via a folding line and two second upright walls connected to the second edges via a folding line, in which the first and the second upright walls each comprise two wall panels that are spaced apart in order to define a hollow wall space there in between, in which the first upright walls are attached to the bottom panel

in a collapsible manner and by means of a glue connection and the second upright walls are attached to the rest of the box through inter-engaging of second coupling means provided on the second upright walls and first coupling means provided on the rest of the box.

[0009] Thus a double-walled box is provided which can be transported in planar position, and which for a large part is ready because of pre-arranged (glue) connections, but the final erection of the box can take place at the buyer's of the box, just before filling the box, by inter-engaging the coupling means, which requires no gluing activity.

[0010] Preferably the first coupling means are provided on the first upright walls, in which way the upright walls are able to keep each other in the upright position.

[0011] Preferably the first upright walls are provided with end members that towards the outside abut parts of the second upright walls and are provided with first coupling means, as a result of which the second upright walls are retained to the outside.

[0012] When at least a part of the first coupling means have been provided on the end members of the first upright walls which extend into the hollow wall space of the second upright walls, the smoothness of the box's surface kept intact as much as possible.

[0013] Preferably the first coupling means have been provided on the bottom side and the top side of the upright walls, for an optimal stability of the walls.

[0014] Preferably the second coupling means are at least partly formed on second attachment strips provided on the outermost of the wall panels of the second upright walls which are connected to it via a folding line, in which the second attachment strips are part of the second coupling means. The second attachment strips form an easy point of engagement for the person erecting the box.

[0015] Preferably the second coupling means are at least partly formed by the inner wall panels of the second upright walls, in which the first coupling means engage behind said inner wall panels. This can be achieved in a constructionally easy way when the first coupling means that engage behind the inner second wall panels are formed at the ends of an upper longitudinal bridge strip of the first upright walls.

[0016] Preferably the first coupling means engage into the second upright walls. In this way a stable corner confinement is obtained, in which the second upright walls engage about the end members of the first upright walls.

[0017] According to a further development the outermost of the wall panels of the first upright walls are provided with first attachment strips connected to said walls by a folding line, in which the first attachment strips apart from their ends are glued to the bottom surface of the bottom panel, in which the second attachment strips are inserted in an insertion space between the ends of the first longitudinal attachment strips and the bottom panel.

[0018] Preferably the coupling means form a hook or

snap connection, that can be detached in order to bring the box into a planar position after use, so that it takes up little space during transport to the place of packing or to the paper collection company.

[0019] Preferably a part of the hook or snap connection is provided at the ends of the second attachment strips, near their folding line. It is advantageous here when at least a part of the hook or snap connection has been provided at end members of the first upright walls, which end members extend within the hollow space of the second upright walls.

[0020] From a further aspect the invention provides a box made of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls connected to the first edges via a folding line and two second upright walls connected to the second edges via a folding line, in which the first and the second upright walls each comprise two wall panels that are spaced apart in order to define a hollow wall space there in between, in which the innermost of the wall panels of the first and the second upright walls are connected to the bottom panel via said folding lines, and its outermost wall panels are provided with attachment strips that extend at the bottom side of the bottom panel.

[0021] From a further aspect the invention provides a box made of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls connected to the first edges via a folding line and two second upright walls connected to the second edges via a folding line, in which the first and the second upright walls each comprise two wall panels that are spaced apart in order to define a hollow wall space there in between, in which the outermost of the wall panels of the first and the second upright walls are provided with first and second longitudinal attachment strips, respectively, connected to them via a folding line, in which the first upright walls are folded towards the outside and in which they are fixated to the rest of the box with their longitudinal attachment strips and the second upright walls are connected to the rest of the box in a mechanical manner, by means of means that are part of the cardboard of the box.

[0022] Preferably the adjacent innermost wall panels of the first and the second upright walls are connected to each other by means of a corner piece, that is folded double diagonally and is accommodated in one of the hollow wall spaces. In that way the corner between both walls is reinforced and the position one to the other of both walls can in that way be controlled to an increased extent. The diagonally folded corner piece can be inserted into the hollow wall space of the second walls in an advantageous manner. When erecting the second walls

they can simply be turned about the corner pieces in a continuous movement.

[0023] Preferably the outer wall panels of the first upright walls and/or the second upright walls are provided with an end member, which is inserted within the hollow wall space of an adjacent upright wall, in order to reinforce the corner area. It is advantageous here when the end member is loosely, preferably clampingly, inserted into said hollow wall space.

[0024] Preferably the adjacent upright walls are detachably connected to each other.

[0025] If necessary further reinforcement of the corner area can be obtained when the outer wall panels of the first upright walls and/or of the second upright walls are provided with an end member, which is folded down against the wall panel in question and preferably is glued to it.

[0026] The collapsibility of the first walls is improved when the first attachment strips limit the hollow wall spaces of the first upright walls downward. Thus the first attachment strips lie against the lower surface of the bottom panel, so that the attachment is situated out of reach of the food product and possible water/fluids, so that the strength is maintained.

[0027] In case the second longitudinal attachment strips limit the hollow wall spaces of the second upright walls downward, the transition between the bottom panel and the second wall remains closed at the inside of the box.

[0028] Preferably the first longitudinal attachment strips extend with unglued ends over the second longitudinal attachment strips, in order to retain them through clamping cooperation with the bottom panel.

[0029] In case it is not desired that water can remain standing in the box, drainage holes can be provided at a distance from the corners of the bottom panel, as a result of which water can also be drained in a directed and possibly controlled manner.

[0030] In case the first walls are longer than the second walls, the box can be provided with a glue connection over its largest length beforehand, which is advantageous in view of the strength.

[0031] From a further aspect the invention provides in a folded or collapsed condition which apparently is suitable for turning it into a box without using connection aids such as glue or staples and the like.

[0032] From yet a further aspect the invention provides a collapsed box to be erected for use, made of cellulose material, such as cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first planar walls extending to the outside, connected to the first edges via a folding line and two second planar walls extending to the outside, connected to the second edges via a folding line, in which the first walls in cross-section are defined by four panels, having two wall panels, a connection strip between the longitu-

dinal outer edges of said panels, and a longitudinal attachment strip with which the bottom wall panel is attached to the lower surface of the bottom panel, in which the second walls at least comprise two wall panels and a longitudinal attachment strip foldably connected to the outermost of said panels, which longitudinal attachment strip is free from the bottom panel and which is provided with second coupling means for coupling engagement with spaced apart first coupling means on the rest of the box, in particular the first upright walls.

[0033] Such a planar box is suitable to be transported in stacks to a food producer, such as a fish auction, and to be erected there by employees in order to be filled with the food product after that.

[0034] Preferably the ends of the longitudinal attachment strips attached to the lower surface are loose to define a clamping space for the ends of the longitudinal attachment strip of the two walls.

[0035] From yet another aspect the invention provides a method for packing foodstuff that has to be kept within a certain range of temperature, such as fish, in which the box comprises a rectangular bottom panel and upright from it two pairs of double or hollow walls, a first pair of opposite walls having a substantially rectangular cross-section and being adhered to the bottom panel with an attachment strip connected to it and in a position folded down to the outside, being kept in a plane with the bottom panel, and the second pair of opposite walls also in a position folded down to the outside, being kept in a plane with the bottom panel, solely connected to the bottom panel via a folding line, in which in this planar position the boxes are transported in stacks from the cardboard factory to the foodstuffs factory or wholesaler in order to be packed there, to which end the packer swings the first pair of walls upwards and subsequently brings the second pair of walls in an erect position while fixating the erect position of the second pair of walls by means of inter-engaging the attachment means belonging to said pair of walls with the bottom panel and/or first pair of walls, after which the box is filled with the foodstuff and is transported together with several boxes to the wholesaler or retailer.

[0036] Preferably a box is used of which the end edges that are situated near the corners of the first pair of walls and/or the second pair of walls are provided with end members, and in which during erecting the second pair of walls the end members of either the first pair or the second pair of walls are inserted into the hollow wall space of either the second or the first pair of walls, respectively, to form a corner connection between adjacent erect walls.

[0037] Preferably use is made of end members that form a unity with the wall members of both pairs of walls that are immediately connected to the bottom panel, in which said end members are folded diagonally when erecting the box and are inserted in one of the adjacent hollow wall spaces.

[0038] Preferably use is made of attachment mem-

bers that belong to the outermost wall panel of the second pair of walls, which attachment members are brought into insertion connection with the retaining members on the rest of the box that cooperate with them.

[0039] After the food has been sold, the boxes can be brought back into the collapsed position by detaching the other pair of walls and folding them down, and subsequently also folding down the one pair of walls, after which several collapsed boxes can be transported to a place of collection for wastepaper for recycling.

[0040] The invention will be elucidated on the basis of the exemplary embodiment shown in the accompanying figures, in which:

Figure 1 shows a blank for an exemplary embodiment of a box according to the invention;

Figure 2 shows the box made of the blank of figure 1, upside down in collapsed position with parts partially broken away;

Figure 3A shows a top view on a corner area of the box of figure 2, during a first stage of its erection;

Figure 3B shows the corner area of figure 3, during a second stage of its erection;

Figure 4A and 4B show a top view and a rear view on the corner piece of figures 3A and 3B, in completed erection; and

Figure 5 schematically shows a cycle of a box according to the invention.

[0041] In figure 1 a blank 1 is shown made of solid cardboard, substantially consisting of a bottom panel 2 and short walls 3 and 4 and long walls 5 and 6 connected to the bottom panel 2 via folding lines 20 and 21.

[0042] The walls 3-6 are in fact double-walled, and are built up, respectively, from first wall panels 3a, 4a, 5a and 6a, and second wall panels 3b, 4b, 5b and 6b, which are intended to lie substantially parallel to each other in the completed box. To that end bridge strips 3c, 4c, 5c and 6c are situated in between the wall panels 3a and 3b, the wall panels 4a and 4b, the wall panels 5a and 5b, and the wall panels 6a and 6b, which bridge strips form a flat horizontal upper edge of the walls 3-6 in the completed box. The walls 3c-6c can also improve the stackability of the boxes. The bridge strips 3c and 4c are connected to the wall panels 3a, 3b and 4a, 4b by means of folding lines 22 and 23, and the bridge strips 5c and 6c are connected to wall panels 5a, 5b and 6a, 6b by means of folding lines 26 and 27.

[0043] At the outer edges, as seen in the drawing, attachments strips or attachment flaps 3d, 4d and 5d, 6d are connected to the wall panels 3b, 4b and 5b, 6b via folding lines 24 and 28, respectively.

[0044] It can be seen that the wall panels 3a-5a, 5a-4a, 4a-6a and 6a-3a are connected to each other by corner pieces 11, 13, 14 and 12, respectively, which because of diagonal folding lines 32 are each two-piece with the portions 11a, 11b, 13a, 13b, 14a, 14b and 12a, 12b. In this top view on the blank 1 the folding lines 32 make an upward approach of both abutting portions of the corner pieces possible. The folding lines 33, 34 with which the corner pieces 11-14 are connected to the abutting wall panels here permit a downward movement, as seen in the drawing, of the portions 11a and 11b etcetera, respectively, with respect to wall panel 3a and 5a etcetera, respectively. The corner pieces are furthermore each provided with a hollow cut-off point area 17.

[0045] At their ends, the wall panels 3b and 4b are provided with end flaps 7a, 7b and 8a, 8b via folding lines 25, in which the folding lines 25 make it possible to turn said flaps downwards as seen in the drawing. The flaps 7a and 7b are provided with recesses 33. Near the ends of the folding lines 24, the wall panels 3b and 4b are provided with screening portions 18 through cutting in, in which furthermore cams 35 have been formed at the inner edge of the attachment flaps 3d and 4d.

[0046] The wall panels 5b and 6b are also provided with flaps, in this case by flaps 9a, 9c, 9b, 9d, 10b, 10d and 10a and 10c that are divided by folding lines 30, and which are connected to the wall panels in question by means of folding lines 29. The folding lines 29 and 30 make a, as seen in the drawing, downward hinging movement possible. At their bottom edges the flaps 9a, 9b, 10a, 10b are provided with recesses 3b, as a result of which cams 34 have been formed.

[0047] It can furthermore be seen in figure 1 that the long bridge strips 5a and 6c are provided at their ends with corner-shaped ends 16 that are provided with a stop edge 37.

[0048] In the cardboard factory the blank 1 is mechanically prepared to be converted into a box later on without additional aids, such as staples or glue. Here the flaps 9c, 9d, 10c and 10d of a blank 1 lying upside down are provided with glue and turned and attached to the flaps 9a, 9b, 10b, 10a. A same treatment takes place on the flaps 7a, 7b, 8a and 8b. So they are attached to the lower surface of the wall panels 3b and 4b. Subsequently glue is applied on the bottom side of the attachment strips 5d and 6d, except the shaded end portions 38. After that the wall panels 5b and 6b are turned about folding lines 27 and the attachment strips 5d and 6d are adhered to the bottom side of the bottom panel 2. The collapsed box 100 shown in figure 2 is then obtained. Said boxes are stacked in the factory A and are kept together in a stack 101 and for instance transported by lorry to a food supplier, such as a fish auction, where (see B in figure 5) the box 200 can be erected manually.

[0049] To that end figure 3A is returned to, in which for a corner area the situation is shown after, in the erection of the box 100 (which is then upside down again),

the walls 5 and 6 have been turned into an upright position about the folding lines 20, in which the corner pieces 11-14 are folded double about their folding lines 32 as if of their own accord. The wall panels 3a, 4a here are swung a little to the inside and upwards in the direction E, so that they abut the stop edge 37 with their surface that faces away from the box. The bridge strips 3c, 4c and the wall panels 3b, 4b now extend upwards in an inclined manner. Subsequently the corner pieces 11-14 are manually pushed about the folding lines 32 in the direction G in order to get into an abutting position against the lower surface of wall panels 3a and 4a as shown in figure 3B. The flaps 9-10 that are folded double are also turned about folding line 29 into the position shown in figure 3B. Then the wall panels 3b and 4b are taken hold of and said panels are rotated about the folding lines 22, 23 in the direction H (figure 3B and 5) -in which the attachment strips 3d and 4d are kept in a position perpendicular to it about the folding lines 24-, the wall panels 3b and 4b into a vertical position, in which in the last part of this motion the attachment flaps 3d and 4d are brought against the lower surface of the bottom panel 2, and the ends of the attachment strips 3d and 4d end up in the space between the glueless end portions 38 of the attachment strips 5d and 6d and the lower surface of the bottom panel 2. Here (figures 4A, 4B) the cams 35 get behind the cams 34 on the flaps 9a, 9b, 10a, 10b and their returning motion is counteracted by a type of hook/snap action. Thus the wall panels 3a, 4a are kept straight as a result of stopping against the stop edge 37 and the wall panels 3b, 4b because of said hook action. The friction exerted by the end portions of the attachment strips 5d and 6d and the lower surface of the bottom panel 2 on the end portions of the attachment strips 3d and 4d makes the connection complete. In the hollow space of the walls 3 and 4 the flap 7a, the double-folded corner piece 11, 12 and the double folded flaps 9a, 9c now extend, so that the corner is reinforced there. In case of suitable forming of the folding line 29, the flaps 9a, 9c can also exert a biasing force to the outside on the wall panel 3b, as a result of which the cam 35 is pressed tightly against the cam 34.

[0050] In the box 200 thus obtained, the end portions 16, (see figure 1) extend under the end portions of the bridge strips 3c, 4c, so that at that location a slitless connection is obtained between the bridge strips.

[0051] In this example drainage holes 41 are provided at the edges of the bottom panel 2 at some distance from the corners at the long sides. The location of the drainage holes 41 is such, that they are aligned with the drainage 31 in the erected box 200. If necessary drainage holes can be dispensed with, depending on the wishes of the user of the boxes. The holes 40 provided in the corners promote the foldability at that location. By means of diagonally folded corner pieces 11-14, that are kept enclosed in one of the adjacent double walls, a tight corner connection is provided without glue, in which the tilting of the folded corner pieces is prevented by abut-

ment of its upper edges against the lower surface of the bridge strips 3c, 4c above it.

[0052] The boxes 200 are now ready to be filled with for instance fish, and to be transported on a pallet (figure 5, see C), as a stack 201 to the fish shop D, where the fish can be displayed for sale in the same boxes 200.

[0053] After use the fish dealer is able, without too much trouble, to fold the boxes open into a position of collapsed box 100. They can then be entered into a cycle again, or through the intermediary of the paper wholesaler, be transported to the cardboard factory A, in order to be processed into new boxes.

[0054] With the boxes according to the invention a box is provided which is suitable for packing food in a thermally reliable manner, which requires a minimal transport volume.

Claims

1. Box made of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls connected to the first edges via a folding line and two second upright walls connected to the second edges via a folding line, in which the first and the second upright walls each comprise two wall panels that are spaced apart in order to define a hollow wall space there in between, in which the first upright walls are attached to the bottom panel in a collapsible manner and by means of a glue connection and the second upright walls are attached to the rest of the box through inter-engaging of second coupling means provided on the second upright walls and first coupling means provided on the rest of the box, in which the first coupling means are preferably provided on the first upright walls, in which the first upright walls are preferably provided with end members that towards the outside abut the parts of the second upright walls and are provided with first coupling means.
2. Box according to claim 1, in which at least a part of the first coupling means is provided on the end members of the first upright walls which extend into the hollow wall space of the second upright walls.
3. Box according to claim 2, in which the first coupling means are provided on the bottom side and the top side of the upright walls.
4. Box according to any one of the preceding claims, in which the second coupling means are at least partly formed on second attachment strips provided on the outer of the wall panels of the second upright walls which are connected to it via a folding line, in which the second attachment strips are part of the second coupling means.
5. Box according to any one of the preceding claims, in which the second coupling means are at least partly formed by the inner wall panels of the second upright walls, in which the first coupling means engage behind said inner wall panels, in which preferably the first coupling means that engage behind the inner second wall panels are formed at the ends of an upper longitudinal bridge strip of the first upright walls.
6. Box according to any one of the preceding claims, in which the first coupling means engage into the second upright walls.
7. Box according to any one of the preceding claims, in which the outermost of the wall panels of the first upright walls are provided with first attachment strips connected to said walls by a folding line, in which the first attachment strips apart from their ends are glued to the lower surface of the bottom panel, in which the second attachment strips are inserted in an insertion space between the ends of the first longitudinal attachment strips and the bottom panel.
8. Box according to any one of the preceding claims, in which the coupling means form one or more hook or snap connections, in which preferably a part of the hook or snap connection is provided at the end of the second attachment strips, near the folding lines.
9. Box according to claim 8, in which at least a part of the hook or snap connection has been provided at the end members of the first upright walls which end members extend within the hollow space of the second upright walls.
10. Box made of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls connected to the first edges via a folding line and two second upright walls connected to the second edges via a folding line, in which the first and the second upright walls each comprise two wall panels that are spaced apart in order to define a hollow wall space there in between, in which the outermost of the wall panels of the first and the second upright walls are provided with first and second longitudinal attachment strips, respectively, connected to them via a folding line, in which the first upright walls are folded towards the outside and in which they are fixated to the rest of the box with their

longitudinal attachment strips and the second upright walls are connected to the rest of the box in a mechanical manner, by means of means that are part of the cardboard of the box, in which preferably the second upright walls are folded down to parts that belong to the first upright walls and are retained on them.

11. Box according to any one of the preceding claims, in which the adjacent innermost wall panels of the first and the second upright walls are connected to each other by means of a corner piece, that is folded double diagonally and is accommodated in one of the hollow wall spaces, in which preferably the diagonally folded corner piece is inserted into the hollow wall space of the second walls. 5
12. Box according to any one of the preceding claims, in which the outer wall panels of the first upright walls and/or the second upright walls are provided with an end member, which is inserted within the hollow wall space of an adjacent upright wall, in which the end member is loosely, preferably clampingly, inserted into the hollow wall space. 10
13. Box according to any one of the preceding claims, in which the adjacent upright walls are detachably connected to each other. 15
14. Box according to any one of the preceding claims, in which the outer wall panels of the first upright walls and/or of the second upright walls are provided with an end member, which is folded down against the wall panel in question and preferably is glued to it. 20
15. Box according to any one of the preceding claims, in which the first attachment strips limit the hollow wall spaces of the first upright walls downward. 25
16. Box according to any one of the preceding claims, in which the second longitudinal attachment strips limit the hollow wall spaces of the second upright walls downward, in which preferably the first longitudinal attachment strips extend with unglued ends over the second longitudinal attachment strips, in order to retain them through clamping cooperation with the bottom panel. 30
17. Box according to any one of the preceding claims, provided with drainage holes at a distance from the corners of the bottom panel. 35
18. Box according to any one of the preceding claims, in which the first walls are longer than the second walls. 40
19. Box in planar position, to be erected into a box ac-

ording to any one of the preceding claims.

20. Collapsed box to be erected for use, made of cellulose material, such as cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a pair of first edges situated opposite each other and a pair of second edges situated opposite each other, having two first planar walls extending to the outside, connected to the first edges via a folding line and two second planar walls extending to the outside, connected to the second edges via a folding line, in which the first walls in cross-section are defined by four panels, having two wall panels, a connection strip between the longitudinal outer edges of said panels, and a longitudinal attachment strip with which the bottom wall panel is attached to the lower surface of the bottom panel, in which the second walls at least comprise two wall panels and a longitudinal attachment strip foldably connected to the outermost of said panels, which longitudinal attachment strip is free from the bottom panel and which is provided with second coupling means for coupling engagement with spaced apart first coupling means on the rest of the box, in particular the first upright walls, in which preferably the ends of the longitudinal attachment strips attached to the lower surface are loose to define a clamping space for the ends of the longitudinal attachment strip of the two walls. 45
21. Method for packing foodstuff that has to be kept within a certain range of temperature, such as fish, in which the box comprises a rectangular bottom panel and upright from it, two pairs of double or hollow walls, a first pair of opposite walls having a substantially rectangular cross-section and being adhered to the bottom panel with an attachment strip connected to it and in a position folded down to the outside, being kept in a plane with the bottom panel and the second pair of opposite walls also in a position folded down to the outside, being kept in a plane with the bottom panel, solely connected to the bottom panel via a folding line, in which in this planar position the boxes are transported in stacks to the foodstuffs factory or wholesaler in order to be packed there, to which end the packer swings the first pair of walls upwards and subsequently brings the second pair of walls in an erect position while fixating the upright position of the second pair of walls by means of inter-engaging the attachment means belonging to said pair of walls with the bottom panel and/or first pair of walls, after which the box is filled with the foodstuff and is transported together with several boxes to the wholesaler or retailer, in which preferably a box is used of which the end edges that are situated near the corners of the first pair of walls and/or the second pair of walls are provided with end members, and in which during

erecting the second pair of walls the end members of either the first pair or the second pair of walls are inserted into the hollow wall space of either the second or the first pair of walls, respectively, to form a corner connection between adjacent erect walls. 5

22. Method according to claim 21, in which use is made of end members that form a unity with the wall members of both pairs of walls that are immediately connected to the bottom panel, in which said end members are folded diagonally when erecting the box and are inserted in one of the adjacent hollow wall spaces. 10

23. Method according to claim 21 or 22, in which use is made of coupling members that belong to the second pair of upright walls, which attachment members are coupled to the retaining members the rest of the box that cooperate with them. 15

24. Method according to claim 21, 22 or 23, in which the boxes, after the food has been sold, are brought back into the folded down position by detaching the other pair of walls and folding them down, and subsequently folding down the one pair of walls, after which several folded down boxes can be transported to a place of collection for wastepaper for recycling. 20 25

25. Box of cellulose material, particularly cardboard, particularly solid cardboard, comprising a rectangular bottom panel having a first pair of edges situated opposite each other and a pair of second edges situated opposite each other, having two first upright walls connected to the first edges via a folding line and two second upright walls connected to the second edges via a folding line, in which the first and second upright walls each comprise two wall panels, that are spaced apart in order to define a hollow wall space there in between, in which the inner wall panels of the first and second upright walls are connected to the bottom panel via said folding lines and its outer wall panels being provided with attachment strips that extend at the bottom side of the bottom panel. 30 35 40 45

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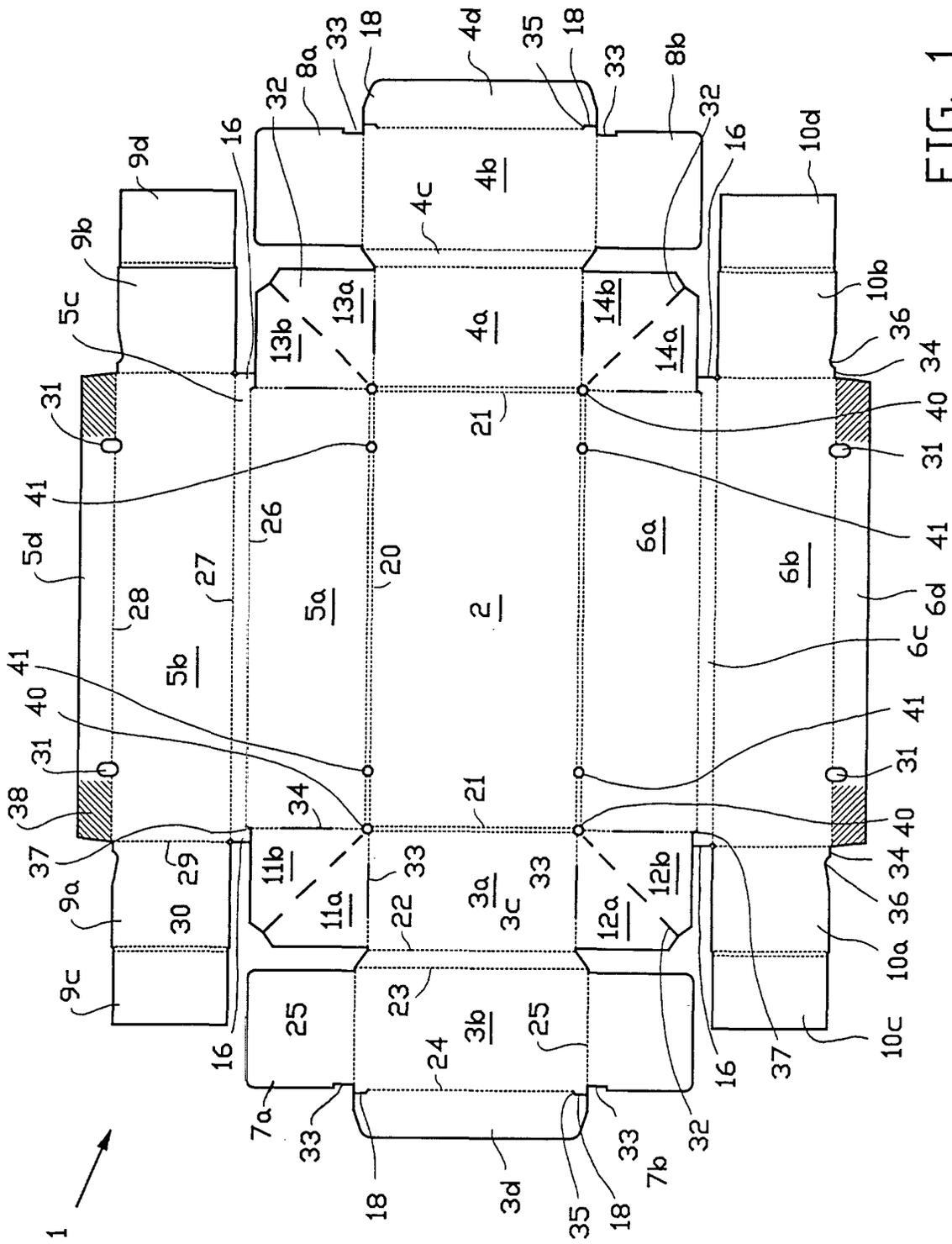


FIG. 1

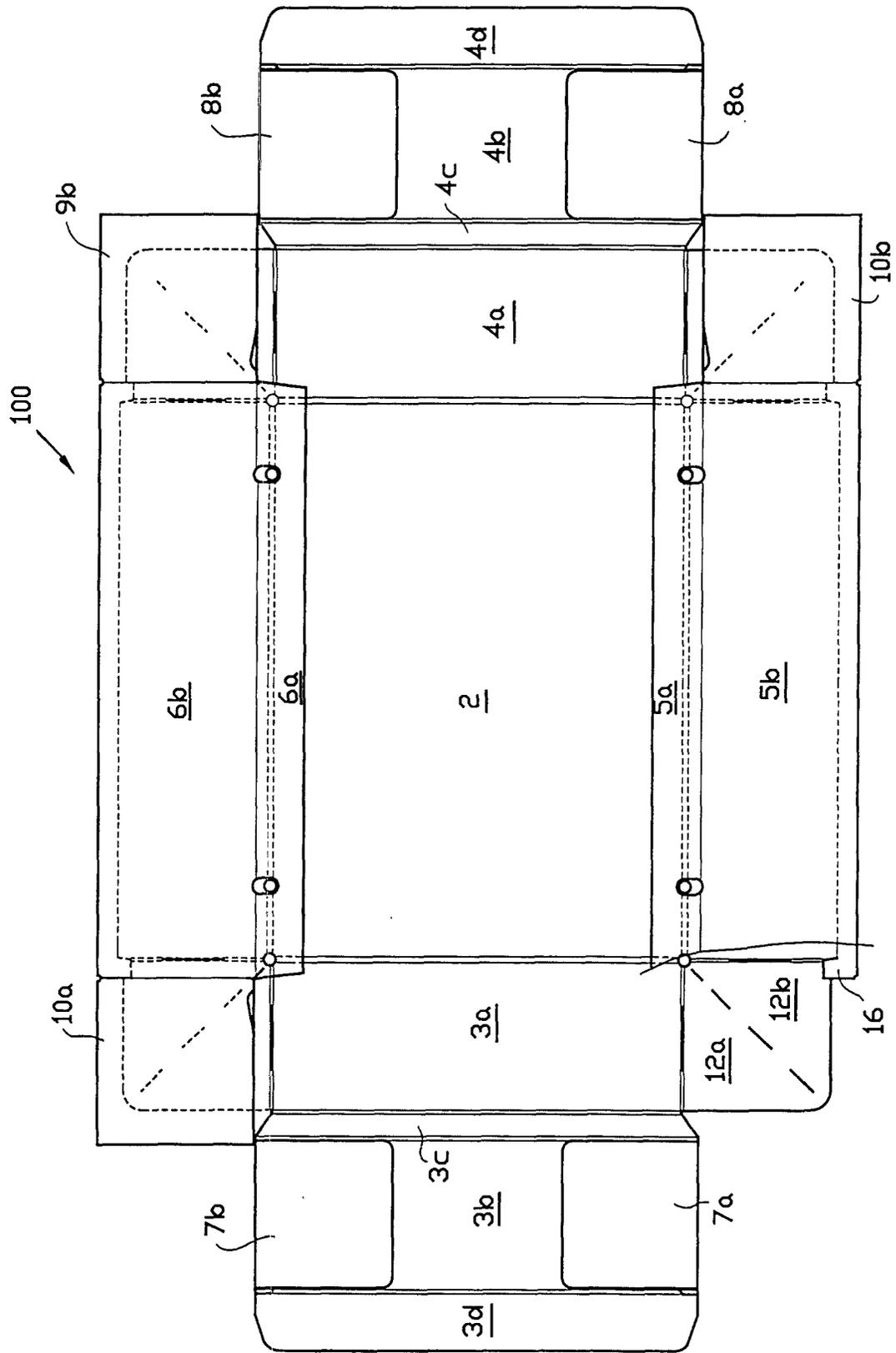


FIG. 2

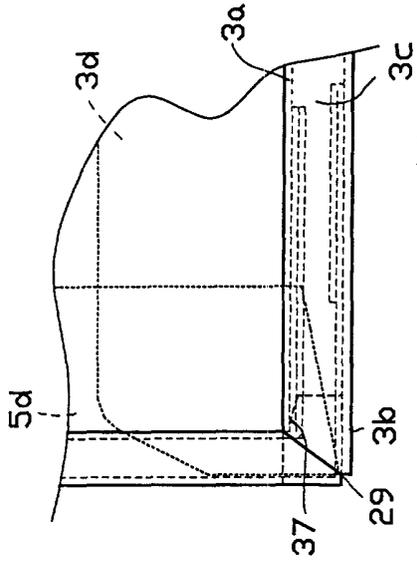


FIG. 4A

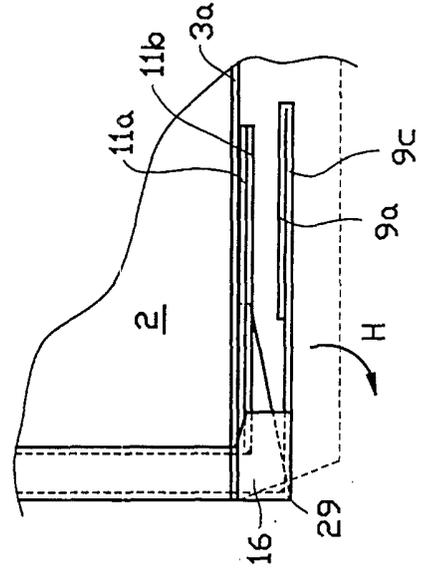


FIG. 3B

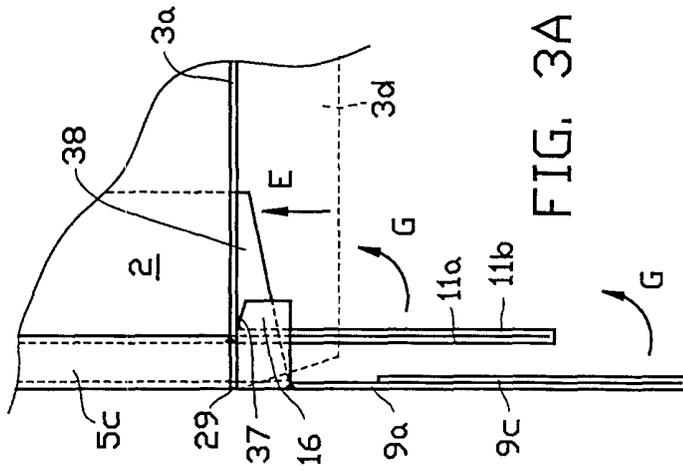


FIG. 3A

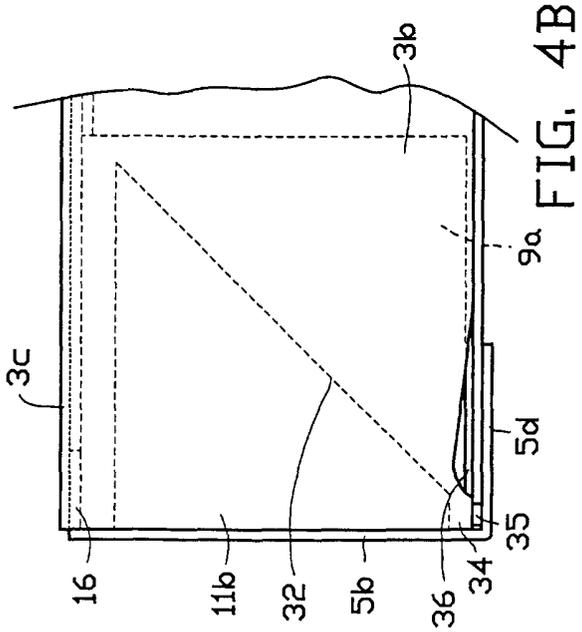


FIG. 4B

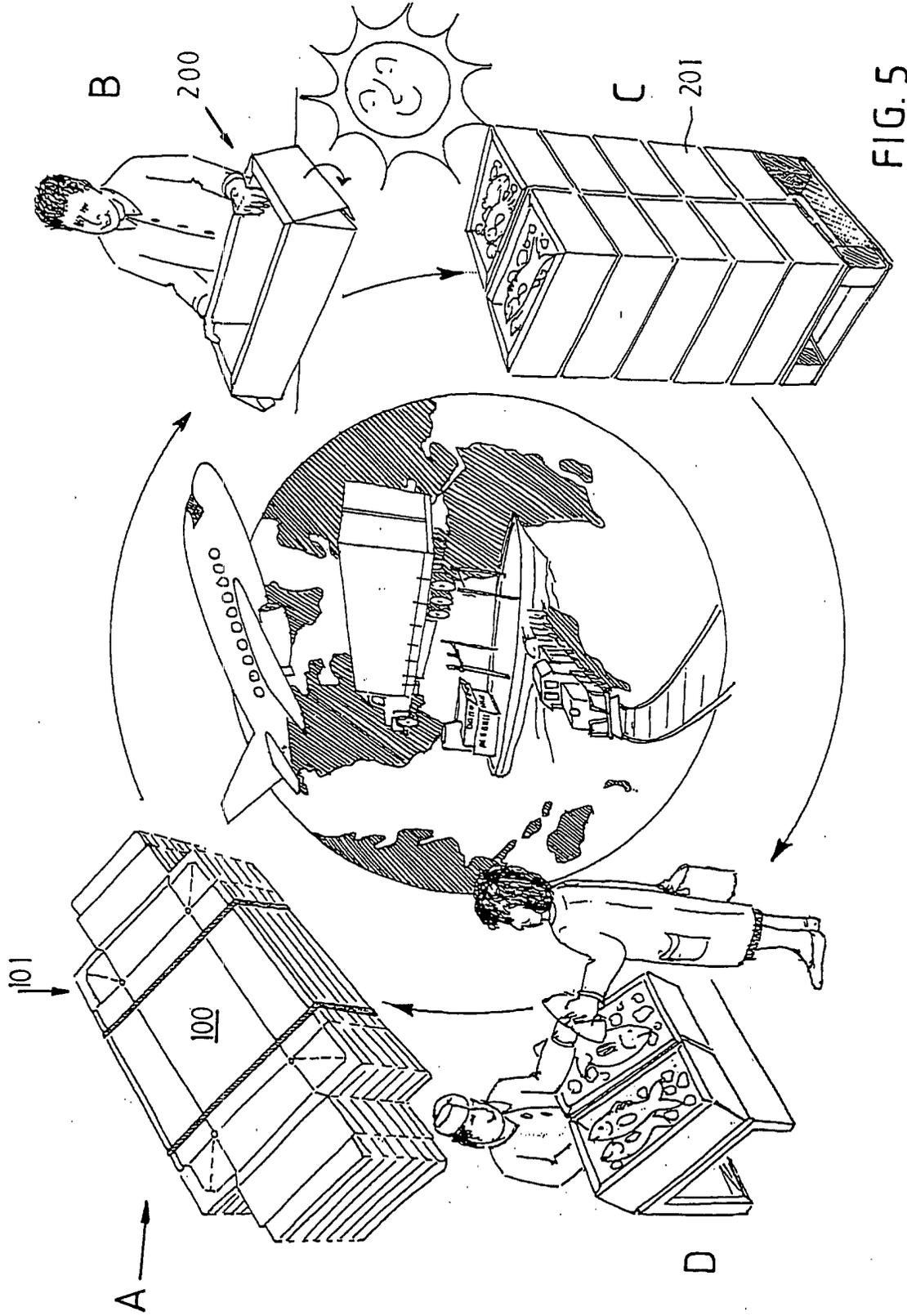


FIG. 5



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Application Number
EP 01 20 0350

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			B65D
The present search report has been drawn up for all claims			
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