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

(11) Publication number: **0 666 217 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **95101048.7**

(51) Int. Cl.[6]: **B65D 5/46**

(22) Date of filing: **26.01.95**

(30) Priority: **02.02.94 IT MI940069 U**

(43) Date of publication of application:
09.08.95 Bulletin 95/32

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

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(54) Stackable cardboard container.

(57) A stackable cardboard container (10) having a square or rectangular shaped body, obtained from a flat blank folded along creasing lines; the top wall (16) of the container (10) is set back with respect to the top edges of the side walls (11, 12, 13, 14) of the container (10) so as to define an open top cavity inside which a gripping handle (17) formed by folding additional panels of the blank is arranged. Inclined baffles (20, 21) ensure locking of the handle (17), bridging between the top edges of two side walls (11, 13) of the container (10) and inclined edges of corresponding V-shaped notches provided at each end of the gripping handle (17).

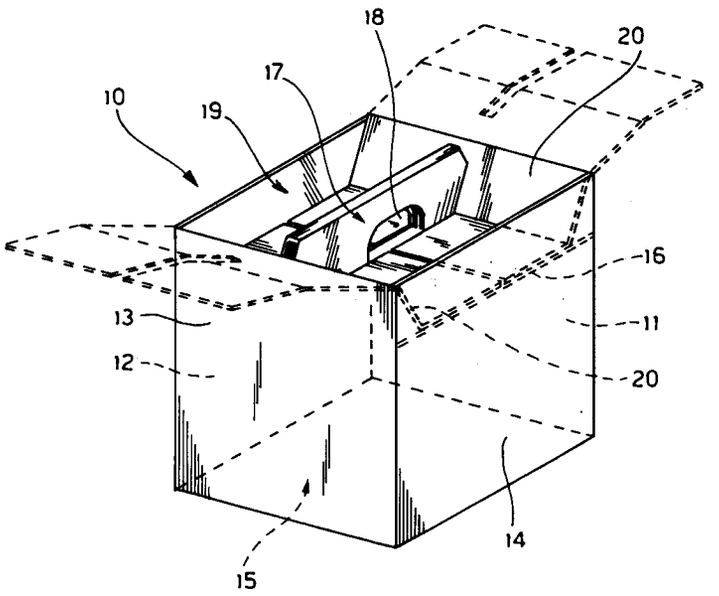


FIG. 1

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The present invention relates to a stackable container, made of cardboard or similar material, provided with a suitable set back handle which facilitates transportation thereof.

Cardboard boxes and containers are widely used for packaging or wrapping various articles, for transportation and despatch thereof.

Generally use is made of corrugated cardboard containers for the packaging and transportation of various material, said containers sometimes being provided with a gripping handle which facilitates transportation. These cardboard containers are generally obtained from a flat blank comprising a plurality of panels side by side arranged which are folded along creasing lines so as to form the finished container, with or without a gripping handle.

Within certain applications, for example for the packaging of paint containers or similar materials, there exists the problem of having particularly strong cardboard containers which are able to withstand heavy weights, for example of the order of a few tens of kilos, and can be stacked so as to reduce the space occupied both during transportation and warehouse storage and which at the same time can be easily gripped for lifting and transportation purposes.

At present it is not known of any cardboard container having the aforementioned requirements and which is both inexpensive to manufacture and easy to erect or assemble.

The object of the present invention is to provide a stackable cardboard container which is able to satisfy the aforementioned requirements and which moreover is provided with a particularly strong body and gripping handle for withstanding heavy loads, positioned in such a way that two or more containers can be stacked and placed on top of one another.

The above can be achieved by means of a stackable cardboard container with an inset handle, having the features of the main claim.

A preferred embodiment of a stackable cardboard container according to the present invention will be more described hereinbelow with reference to the accompanying drawings, in which:

- Fig.1 is a perspective view of a container according to the present invention;
- Fig. 2 is an enlarged cross-sectional view of the container according to Figure 1, along the plane of the gripping handle;
- Fig. 3 is a cross-sectional view along the line 3-3 of Figure 2;
- Fig. 4 shows the flat starting blank for forming the container according to Figure 1.

As shown in Figure 1, the container according to the present invention substantially comprises a body 10 of square or rectangular shape bounded by peripheral walls 11, 12, 13, 14, by a bottom wall 15 and by a top closing wall 16 which, as clearly shown, is set back with respect to the top edges of the side walls so as to define a cavity 19, which is open upwards, for accommodating a handle 17 provided with a central gripping opening 18.

As clearly shown in Figure 1 and in the enlarged cross-sectional views of Figures 2 and 3, the handle 17 has a height equal to or slightly less than the depth of the cavity 19 so that the top edge of the handle is arranged substantially flush with or in a position substantially set back from the top edges of the side walls.

A similar arrangement of the gripping handle 17, in addition to being easy to take hold of and ensuring a particularly strong structure of the container, capable namely of transporting heavy loads of the order of a few tens of kilos, also enables two or more containers to be placed one on top of the other and stacked.

It is obvious, in fact, from the cross-sections of Figures 2 and 3 that the bottom wall 15 of an overlying container 10 rests fully on the edges of the side walls 11, 12, 13, 14 of an underlying container 10, the gripping handle 17 of which, being accommodated in the space which is formed between the open top cavity 19 of the underlying container 10 and bottom wall 15 of the overlying container 10, does not interfere with the latter, thus ensuring a solid support and allowing stacking.

The cardboard container 10 according to the present invention is moreover provided with slanted baffles 20 for strengthening and locking the handle 17, which baffles 20 are connected to the top edges of two side walls 11, 13 and are provided with a transverse slot 22 which is arranged against the inclined edges of corresponding V- shaped notches 23 formed at the two ends of the handle 17.

The features of the container 10 according to the present invention are more illustrated hereinbelow with reference to the blank of Figure 4 and the cross-sectional views of Figures 2 and 3.

The container 10 is obtained from a flat corrugated-cardboard blank consisting of a plurality of panels and flaps which can be folded along cutting and creasing lines, as shown.

More precisely, the flat blank of Figure 4 comprises a set of four central panels 11, 12, 13, 14 defining the corresponding side walls of the container 10, and a gluing flap 21 along the end edge of the panel 14. In Figure 4, the various broken lines which separate one panel from another indicate the crease lines for folding the various panels of the blank forming the container.

The blank in Figure 4 comprises moreover a second set of panels 15A, 15B, 15C and 15D, arranged on one side of the central set of panels,

which during assembly of the container, are overlapping so as to form the bottom wall 15 of the container.

The blank comprises finally a third set of side panels arranged on the opposite side to the one above, suitable for defining the top closing wall 16, the gripping handle 17 and the slanted baffles 20 for strengthening the said container. More precisely, as shown in the top part of Figure 4, this third set of panels comprises two panels 16B and 16C which define the top wall 16 of the container, which are connected to the panels 12 and 14 of the corresponding side walls by middle panels 16A and 16C, respectively, which during assembly of the container are arranged parallel and adjacent to the respective side walls 12 and 14, as shown in the enlarged cross-sectional view of Figure 3.

The third set of panels comprises, moreover, at the left-hand end of Figure 4 and in a middle position with respect to the panels 16B, 16C defining the top closing wall, two further additional panels 20 designed to form the corresponding slanted baffles of the container, once assembled; the panels 20 are provided with flaps 20A and 20B spaced apart by an intermediate slot 22 which partially extends into the said panels 20 such that, in the assembled condition of the container, the baffles 20 and the flaps 20A, 20B can be arranged so as to straddle the gripping handle 17, as explained further below, with the flaps 20A and 20B folded against the panels 16B and 16D of the top closing wall 16 of the container.

From Figure 4 it can be noted, moreover, that the additional panels 16A and 16C are spaced from the central panels 12 and 14 by double creasing lines 24 which will form the thickened top edges of at least two walls 12, 14 of the container (Fig. 3), suitable therefore for providing a solid resting surface for supporting and stacking several containers.

Finally, Figure 4 shows that the blank has further additional panels formed in the region of the edge of the side panels 16B and 16C opposite to that connected to the central panels, for providing the gripping handle 17. More precisely, the panel 16B is extended laterally by two additional panels 17A, 17B separated by a double creasing line 17C of suitable width for allowing the insertion of a third additional panel 17D, during shaping of the handle 17, envisaged with the corresponding edge of the side panel 16D. The additional panels 17A, 17B and 17D for forming the handle 17 have openings 18A, 18B and 18C which can be aligned with one another so as to form the hole 18 allowing to grasp the handle 17 with one hand. The abovementioned panels forming the handle 17 are therefore provided at their ends with V-shaped notches 23 for engagement with the lateral slots 22 of the panels forming the slanted baffles 20 which, in the assembled condition of the container, allow locking of the handle 17 and the formation of abutment surfaces suitable for withstanding the weight of the product packaged inside the container. Since the handle 17 has a thickness substantially triple that of the cardboard box, ample bearing surfaces are obtained, allowing the stresses and specific pressures to be reduced and hence even heavy weights to be lifted and transported.

Assembly of the box, starting with the blank shown in Figure 4, is performed substantially as follows: the blank is initially folded along the creasing lines which separate the series of central panels, gluing the flap 21 to the inside of the wall defined by the panel 11. The side panels 15A, 15B, 15C and 15D are then folded inwards, fixing them with a suitable adhesive so as to form the bottom wall 15 of the container. Then the two side panels 16B, 16D and 16A, 16C, respectively, are folded inwards, so as to arrange the latter adjacent to the two side walls 12, 14 of the container, as shown in the cross-sectional view of Figure 3; the panel 17D is then folded upwards and the other two panels 17A and 17B are folded in a U-shape over it in accordance with the handle arrangement shown in the cross-sectional view of Figure 3; the other side panels 20 in the meantime remain folded outwards, as shown by the broken lines in Figure 1.

At this point the side panels 20 can be folded inside of the container, towards and against the top closing wall 16 which has thus been formed in a position set back with respect to the top edges of the said container. In doing so, the panels 20 are arranged in the inclined position shown in Figure 2, with the flaps 20A, 20B folded against the top wall of the container, while the panels 20 are arranged so as to straddle the handle 17, in the condition shown in Figures 1 and 2, for engagement with and locking the handle since the slots 22 of the panels 20 are inserted into the seats formed by the V-shaped notches 23 against the inclined edges of the notches themselves. In particular, as shown in the cross-sectional view of Figure 2, the two slanted baffles 20 are arranged so as to form a bridge between the top edge of the side walls 11 and 13 and the top closing wall of the container, maintaining their slanted arrangement against the edges of the notches 23. By providing the edges of the V-shaped notches 23 with an inclination for example of between about 25° and 50°, the baffles 20 are arranged with a complementary inclination which not only ensures a strong connection between the handle 17 and the baffles 20, but also, owing to the suitable inclination of the baffles and the ample surfaces making contact with the handle 17, allow the coupling system thus formed to withstand considerable forces and hence tolerate even heavy weights inside a cardboard container of the kind

described.

The inset arrangement of the handle 17, inside a cavity 19 which is open upwards and formed in the top part of the container, and the ample supporting surfaces offered by the edges of side walls therefore enable two or more containers to be stacked, without the handle interfering with the overlying container.

It is thus possible to provide a cardboard container which is extremely simple, particularly strong and suitable for achieving the aims of the present invention.

Claims

1. Cardboard container, having a square or rectangular shaped body (10), obtained from a flat blank which is folded along cutting and/or creasing lines, so as to define the side walls (11, 12, 13, 14), a bottom wall (15) and a top closing wall (16), characterized in that said top wall (16) of the container (10) is provided in a set-back position with respect to the top edges of the side walls (11, 12, 13, 14) of the container (10) to define a top open cavity (19);

in that a central gripping handle (17) is provided inside said top open cavity (19) defined by the top closing wall (16) and by the upper portions of the side walls (11, 12, 13, 14);

and in that transverse baffles (20) are provided for strengthening and locking the handle (17), each of said baffles (20) being slanted and disposed between the top edge of a corresponding side wall (11, 13) of the container (10) and coupling notches (23) at the ends of the handle itself (17).

2. Container according to Claim 1, characterized in that each strengthening baffle (20) comprises a transverse slot (22), the bottom of which is arranged against an inclined edge of a V-shaped notch (23) at the corresponding end of the gripping handle (17) of the container.

3. Container according to Claim 1, characterized in that the top closing wall (16) of the container (10) is provided by opposite panels (16B, 16D) of the blank, each of said opposite panels (16B, 16D) having a panel portion (16A, 16C) which is folded so as to be adjacent to a side wall (12, 14) of the container (10).

4. Container according to Claim 3, characterized in that the gripping handle (17) is provided by folding contiguosly arranged additional panels (17A, 17B) which extend inside said open top cavity (19), from the opposite edges of the folded panels (16B, 16D) defining the top closing wall (16) of the said container (10).

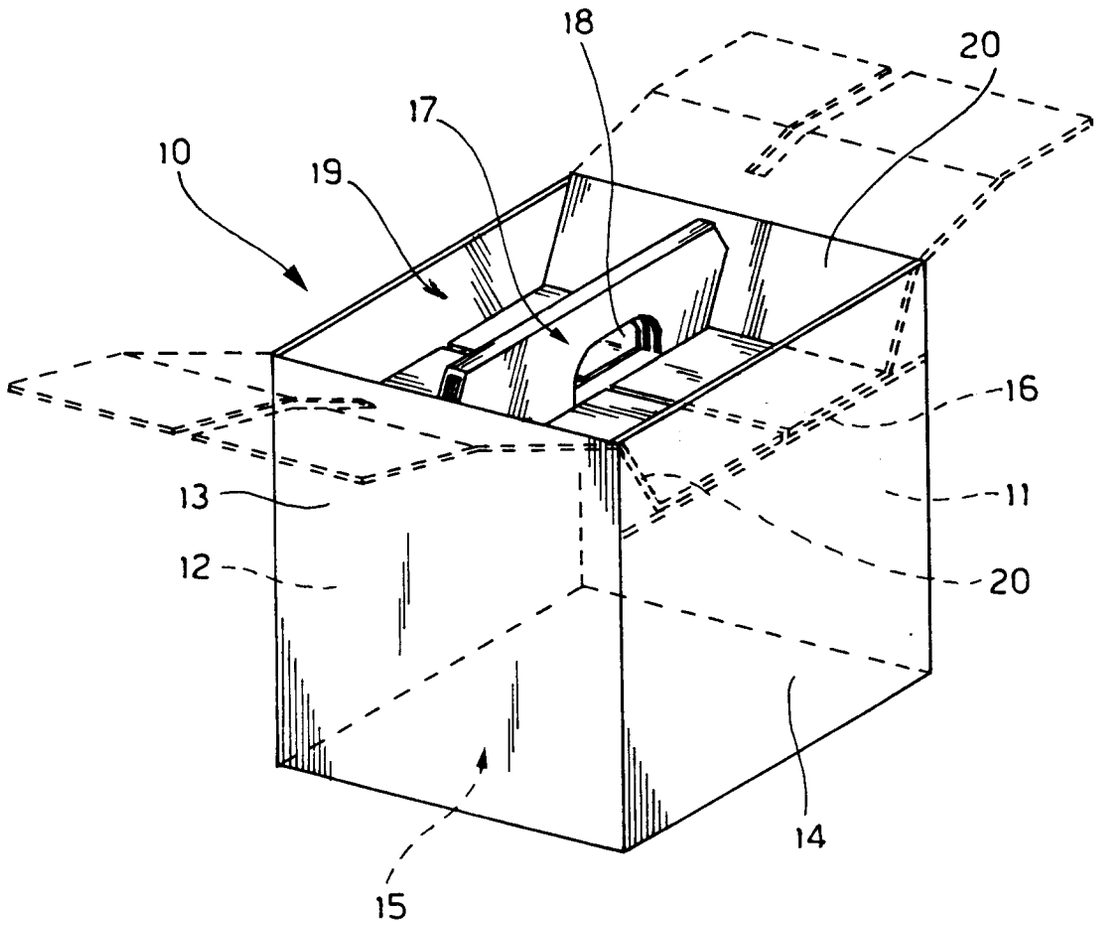


FIG. 1

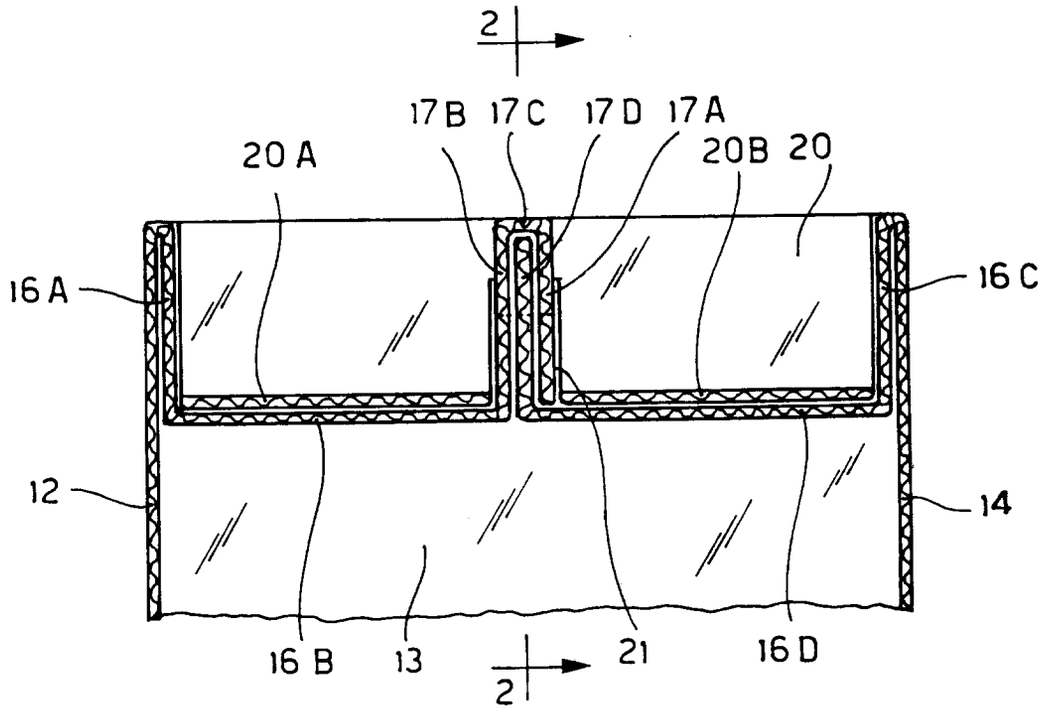

2
17B
17C
17D
17A
20A
20B
20
16A
16C
12
14
16B
13
21
16D
2

FIG. 3

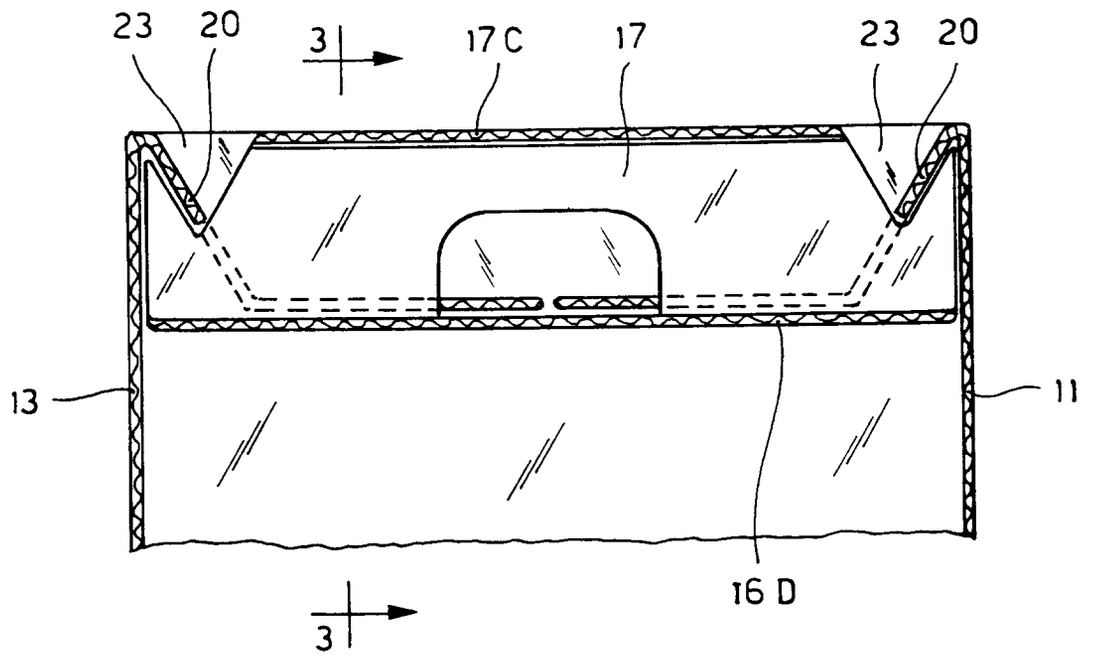

23
20
3
17C
17
23
20
13
11
16D
3

FIG. 2

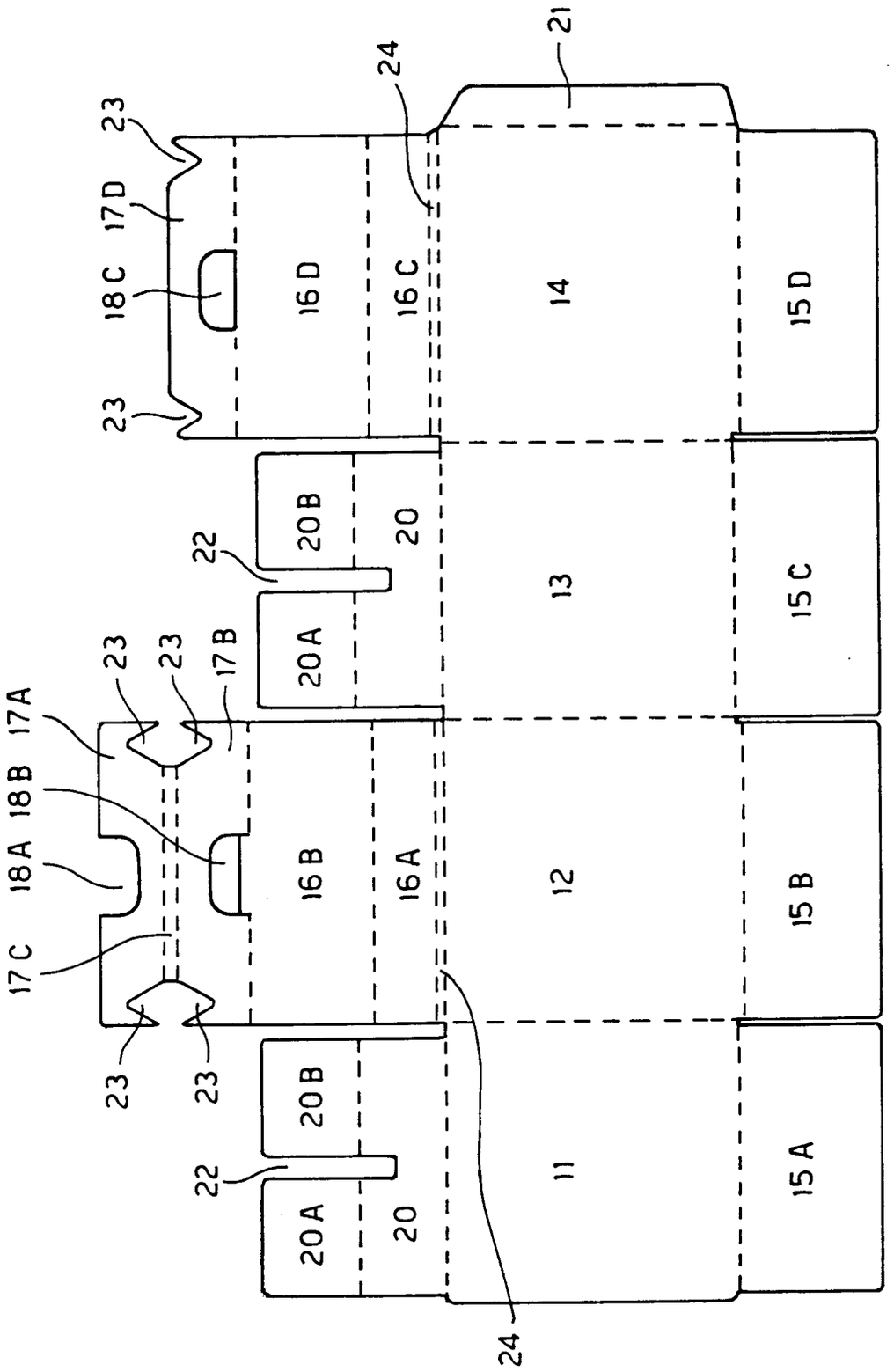

21
24
23
17D
18C
16D
16C
14
15D
20B
22
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20A
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15C
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23
17B
17A
18B
18A
17C
16B
16A
12
15B
23
23
20B
22
20
20A
11
15A
24

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 95 10 1048

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.6)
X A	DE-A-26 22 244 (MEYER) * page 8, line 22 - page 10, line 30; figures 1-3 *	1,3,4 2	B65D5/46
X	FR-A-1 347 723 (THIBAUD) * page 3, column 1, line 23 - line 57; figures 9-11 *	1-4	
X	FR-A-2 342 209 (SOC. NOUVELLE DES CARTONNAGES UNIC) * page 5, line 4 - page 7, line 13; figure 1 *	1-4	
X	FR-A-2 550 764 (MENANTEAU) * page 3, line 9 - page 6, line 26; figures 1-4 *	1,4	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	10 May 1995	Vantomme, M

CATEGORY OF CITED DOCUMENTS

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