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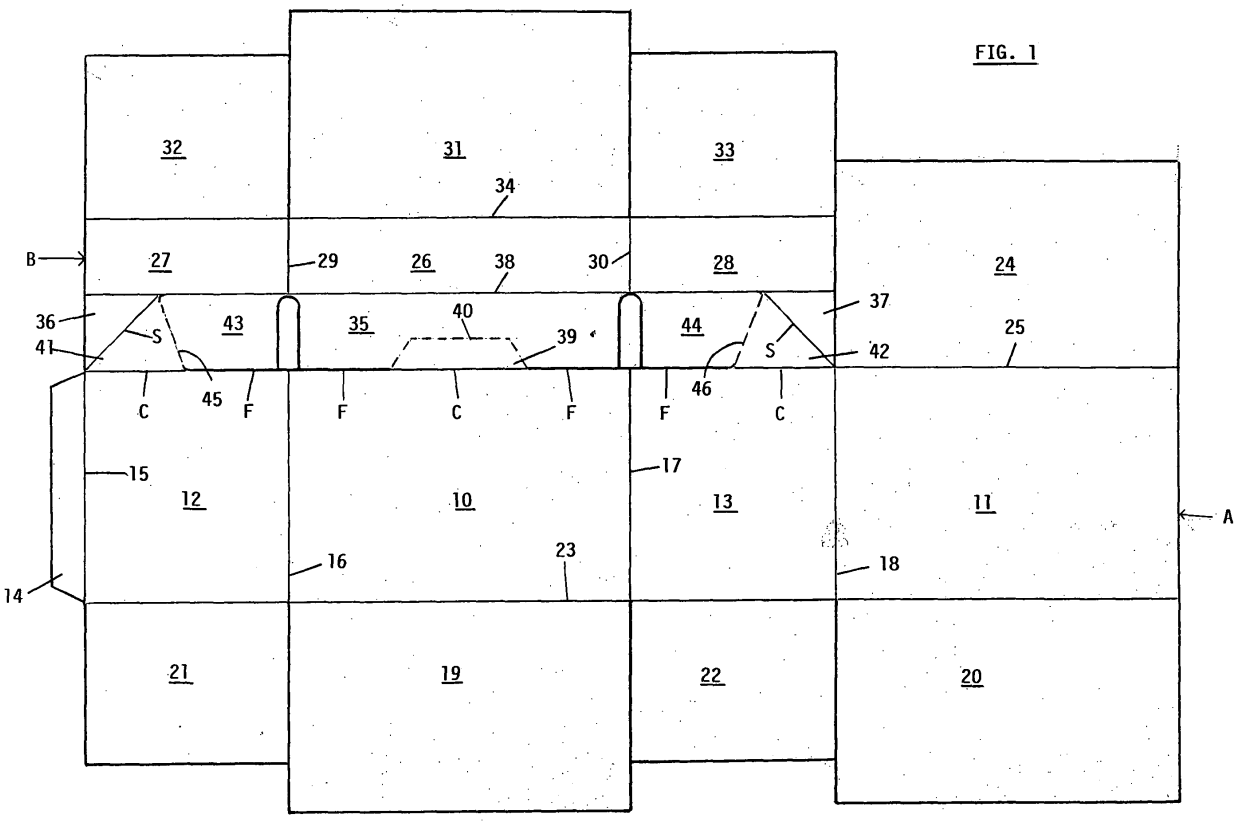
(54) Cardboard or like material box having a body and a cover obtained from a single punched and creased blank.

(57) The cardboard or like material box comprises a body and a cover obtained from a single punched and creased blank. The blank comprises a first portion (A) designed to form the box body and a second portion (B) designed to form the box cover. The first and second blank portions are joined by crease lines (C) and in the remainder are separated by intermediate cut lines (F). The second blank portion (B) is folded on itself to form a cuff for stiffening the cover.

FIG. 1



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Description

Technical field

[0001] The present invention relates to the cardboard-packaging sector, and in particular concerns a box made from a single blank of cardboard, or the like material, and having a flip-top and snap-closing cover.

Background art

[0002] There are known boxes made of cardboard, or the like material, and provided with a flip-top and snap-closing cover. In a conventional embodiment thereof, such boxes are obtained from a single blank of cardboard, in which cut lines and crease lines define a first portion designed to form the box body and a second portion designed to form the box cover. DE 75 33 244 U discloses a structure according to the preamble of claim 1. It is an object of the present invention to make a box of the kind indicated above, which is improved over the prior art, both in respect of the production and use thereof.

Disclosure of invention

[0003] The above object is achieved, according to the invention, with a cardboard, or like material, box having a body and a cover obtained from a single punched and creased blank comprising a first blank portion intended to form the box body and a second blank portion intended to form the box cover, said first and second blank portions being joined by crease lines and, in the remainder, being separated by intermediate cut lines, wherein:

- said first blank portion comprises a front panel, a rear panel, two side panels, and a glue flap, sequentially arranged and connected along parallel sides by transverse crease lines,
- said front panel and said rear panel extend downwardly into longitudinal flaps and said side panels into side flaps, respectively, said longitudinal flaps and said side flaps being foldable along a longitudinal crease line and being made to overlap and adhere to one another to form a box bottom,
- said rear panel extends upwardly into a longitudinal flap which is foldable along a longitudinal crease line,
- said second blank portion comprises a front band and two side bands connected along parallel sides by transverse crease lines,
- said front band extends upwardly into a longitudinal flap and said side bands into side flaps, respectively, said longitudinal flap and said side flaps being foldable along a longitudinal crease line and being made to adhere to the longitudinal flap of said rear panel of said first blank portion to form a box cover,
- said front band extends downwardly into a longitudinal glue tab and said side bands into glue tabs in the shape of a right-angled triangle, respectively, said longitudinal glue tab and each of said glue tabs in the shape of a right-angled triangle being foldable along a longitudinal crease line and being made to adhere to said front band and to a corresponding one of said side bands, respectively, to form, in co-operation therewith, a cuff for stiffening the cover,
- said longitudinal glue tab is joined to the front panel of said first blank portion by a crease line and includes, adjacent to said crease line, a lip which is separable therefrom along a tear line,

characterised in that:

- a connecting membrane extends obliquely and downwardly from a crease line along the hypotenuse of each of said glue tabs in the shape of a right-angled triangle,
- said connecting membrane is joined, at its lower edge, to a corresponding one of said side panels of the first blank portion by a crease line,
- said connecting membrane includes a glue flap which is separable therefrom along a tear line and is further joined, at its upper edge, to a corresponding one of said side bands, along a length of said longitudinal crease line, said glue flap being foldable along said longitudinal crease line and being made to adhere to said corresponding one of said side bands.

Brief description of drawings

[0004] For the purpose of illustrating the structure and the features of a box according to the invention, a preferred, although non-limiting embodiment thereof will be now described in more detail, with reference to the accompanying drawings, wherein:

Figures 1 to 4 show a punched and creased cardboard blank, in a flat, unfolded state and in the sequential folding steps for forming a box according to the present invention;
Figure 5 is a perspective view of the box in the final three-dimensional state, for receiving the products to be contained therein; and
Figure 6 is a perspective view of the finished box with the cover in the open condition.

Preferred embodiment of the invention

[0005] In Figure 1 there is shown a punched and creased cardboard blank from which a box according to the invention can be obtained. The blank comprises a first portion A, designed to form the box body, and a second portion B, designed to form the box cover. The aforesaid first and second portions A and B are joined by crease lines C and in the remainder they are separated by intermediate cut lines F.

[0006] Blank portion A comprises a front panel 10, a

rear panel 11, two side panels 12 and 13, and a glue flap 14, which are sequentially arranged and connected along parallel sides by transverse crease lines 15, 16, 17 and 18.

[0007] The front panel 10 and the rear panel 11 extend downwardly into longitudinal flaps 19 and 20, whilst the side panels 12 and 13 extend downwardly into side flaps 21 and 22, respectively. The aforesaid longitudinal flaps 19, 20 and side flaps 21, 22 can be folded along a longitudinal crease line 23 and can be placed one above the other and glued together to form a bottom of the box. The rear panel 11 extends upwardly into a longitudinal flap 24 which can be folded along a longitudinal crease line 25.

[0008] Blank portion B comprises a front band 26 and side bands 27 and 28 connected along parallel sides by transverse crease lines 29 and 30. The front band 26 extends upwardly into a longitudinal flap 31, whilst the side bands 27 and 28 extend into side flaps 32 and 33, respectively. The aforesaid longitudinal flap 31 and side flaps 32 and 33 can be folded along a longitudinal crease line 34 and are made to adhere to flap 24 of the blank portion A to from a box cover.

[0009] The front band 26 extends downwardly into a longitudinal glue tab 35, whilst the side bands 27 and 28 extend into corresponding glue tabs 36 and 37, respectively, which are in the shape of a right-angled triangle. Glue tab 35 and glue tabs 36 and 37 can be folded along a longitudinal crease line 38. Glue tab 35, which is designed to be adhered to band 26, is joined to panel 10 of the blank portion A by a crease line C and includes, adjacent to said crease line, a lip 39 which is separable therefrom along a tear line 40. From a crease line S along the hypotenuse of each of said glue tabs 36 and 37 in the shape of a right-angled triangle, a connecting membrane 41 and 42, respectively, extends obliquely and downwardly and is joined by a crease line C to a corresponding one of the side panels 12 and 13 of the blank portion A. Each connecting membrane 41 and 42 includes a glue flap 43 and 44, which is separable therefrom along a tear line 45 and 46, respectively, and is further joined at its upper portion to a corresponding one of the side bands 27 and 28, along a length of the longitudinal crease line 38.

[0010] To form the box, starting from the condition shown in Figure 1, wherein the cardboard blank is in the flat, unfolded state, a glue line is firstly applied to glue tab 35 and to glue tabs 36 and 37, then the glue tabs 35, 36 and 37 are rotated upwardly about crease line 38 to overlap each of them exactly on a corresponding one of the bands 26, 27 and 28, respectively, so as to form, on the face of the blank opposite to that shown in Figure 1, a cuff portion R, which can be seen in phantom lines in Figure 2 of the drawings, for the purpose of stiffening the box cover.

[0011] Side panel 12 and side band 27 are then rotated together about crease line 16 and crease line 29, respectively, as shown in Figure 3 of the drawings, and a glue line is applied to flap 14.

[0012] Longitudinal panel 11 is then rotated about transverse crease line 18, as illustrated in Figure 4 of the drawings, and flap 14 is adhered to panel 11, such that crease line 15 lies very close, virtually coincident with the edge of panel 11.

[0013] The first step for forming the box structure according to the invention terminates at this point. The boxes in the flattened condition, as shown in Figure 4, can be packed on each other for shipment to the user, which, by means of known and commonly used automatic machines, gives the boxes their final three-dimensional configuration, in order to receive the products to be contained therein.

Industrial applicability and mode of use of the invention

[0014] In order to give the box a three-dimensional configuration, the aforesaid automatic machines press against the opposing crease lines 16 and 18 to urge them towards each other so that the box assumes a tubular shape, then the longitudinal flaps 19 and 20 and the side flaps 21 and 22 are rotated and glued to each other to form the box bottom, and the products to be packed are introduced into the box. It should be emphasized that the operations for packing the products do not require special filling and packaging lines, instead known and generally used line equipment can be used. Once the products have been placed in the box, the box can be closed by rotating and gluing to each other the longitudinal flaps 24 and 31 and the side flaps 32 and 33 to form the box cover, which is thereby hinged to the box body along crease line 25 of the longitudinal flap 24. Thereafter, the second step for forming the box structure according to the invention and for packaging the products to be contained therein is terminated.

[0015] In the first use of the box, the user grips the lower edge of the cuff R and pulls it upwardly to cause the separation of the lip 39 from the glue tab 35 along the tear line 40. Following the breaking of the tear line 40, the cover remains hinged to the panel 11 of the box body along crease line 25 and can be further rotated upwards and backwards with respect to panel 11, as shown in Figure 6 of the drawings. The opening rotation movement of the box cover about crease line 25 causes the separation of the connecting membranes 41 and 42 from the corresponding glue flaps 43 and 44 along tear lines 45 and 46, respectively, whereby the connecting membranes can rotate concurrently with the box cover about crease lines C and S. During the opening rotation movement of the box cover, the connecting membranes 41 and 42 are caused, at first, to bend, then they spring back to the original flat shape, causing thereby the box cover to automatically flip open, and they are capable of keeping the box cover in the open position, in order to permit the user to access the products contained in the box.

[0016] Thereafter, in a similar way as previously de-

scribed, when the box cover is rotated into the closed position, the connecting membranes 41 and 42 are caused, at first, to bend into a curvilinear shape, then they spring back to the original flat shape, causing the box cover to automatically flip in the closing position. During the closing rotation movement of the box cover, lip 39 is pressed inwardly by the lower edge of the cuff R and, therefore, it can releasably latch to a step portion 47 formed by the glue stripe 35 along the tear line 40, whereby an unintentional opening of the cover is prevented. Thus, the cover is capable of ensuring a secure snap-closure of the box.

[0017] From the foregoing description, it can be clearly seen that the box has a simple structure and construction, and that it can be used to package various kinds of products and to provide always a easy access to the products contained. Furthermore, the stiffening cuff gives greater strength to the box compared to other structure known in the art.

[0018] The invention as described is subject to modifications and variations without departing from the scope of the inventive concept. In practice, the embodiments of the invention may be made from any material and in any size, depending on requirements, without departing from the scope of the claims below.

Claims

1. Cardboard, or like material, box having a body and a cover obtained from a single punched and creased blank comprising a first blank portion (A) intended to form the box body and a second blank portion (B) intended to form the box cover, said first and second blank portions (A, B) being joined by crease lines (C) and, in the remainder, being separated by intermediate cut lines (F), wherein:

- said first blank portion (A) comprises a front panel (10), a rear panel (11), two side panels (12, 13), and a glue flap (14), sequentially arranged and connected along parallel sides by transverse crease lines (15, 16, 17, 18),
- said front panel (10) and said rear panel (11) extend downwardly into longitudinal flaps (19, 20) and said side panels (12, 13) into side flaps (21, 22), respectively, said longitudinal flaps (19, 20) and said side flaps (21, 22) being foldable along a longitudinal crease line (23) and being made to overlap and adhere to one another to form a box bottom,
- said rear panel (11) extends upwardly into a longitudinal flap (24) which is foldable along a longitudinal crease line (25),
- said second blank portion (B) comprises a front band (26) and two side bands (27, 28) connected along parallel sides by transverse crease lines (29, 30),
- said front band (26) extends upwardly into a longitudinal flap (31) and said side bands (27, 28) into side flaps (32, 33), respectively, said longitudinal flap (31) and said side flaps (32, 33) being foldable along a longitudinal crease line (34) and being made to adhere to the flap (24) of said rear panel (11) of said first blank portion (A) to form a box cover,
- said front band (26) extends downwardly into a longitudinal glue tab (35) and said side bands (27, 28) into glue tabs (36, 37) in the shape of a right-angled triangle, respectively, said longitudinal glue tab (35) and each of said glue tabs (36, 37) in the shape of a right-angled triangle being foldable along a longitudinal crease line (38) and being made to adhere to said front band (26) and to a corresponding one of said side bands (27, 28), respectively, to form, in co-operation therewith, a cuff (R) for stiffening the cover,
- said longitudinal glue tab (35) is joined to the front panel (10) of said first blank portion (A) by a crease line (C) and includes, adjacent to said crease line (C), a lip (39) which is separable therefrom along a tear line (40),

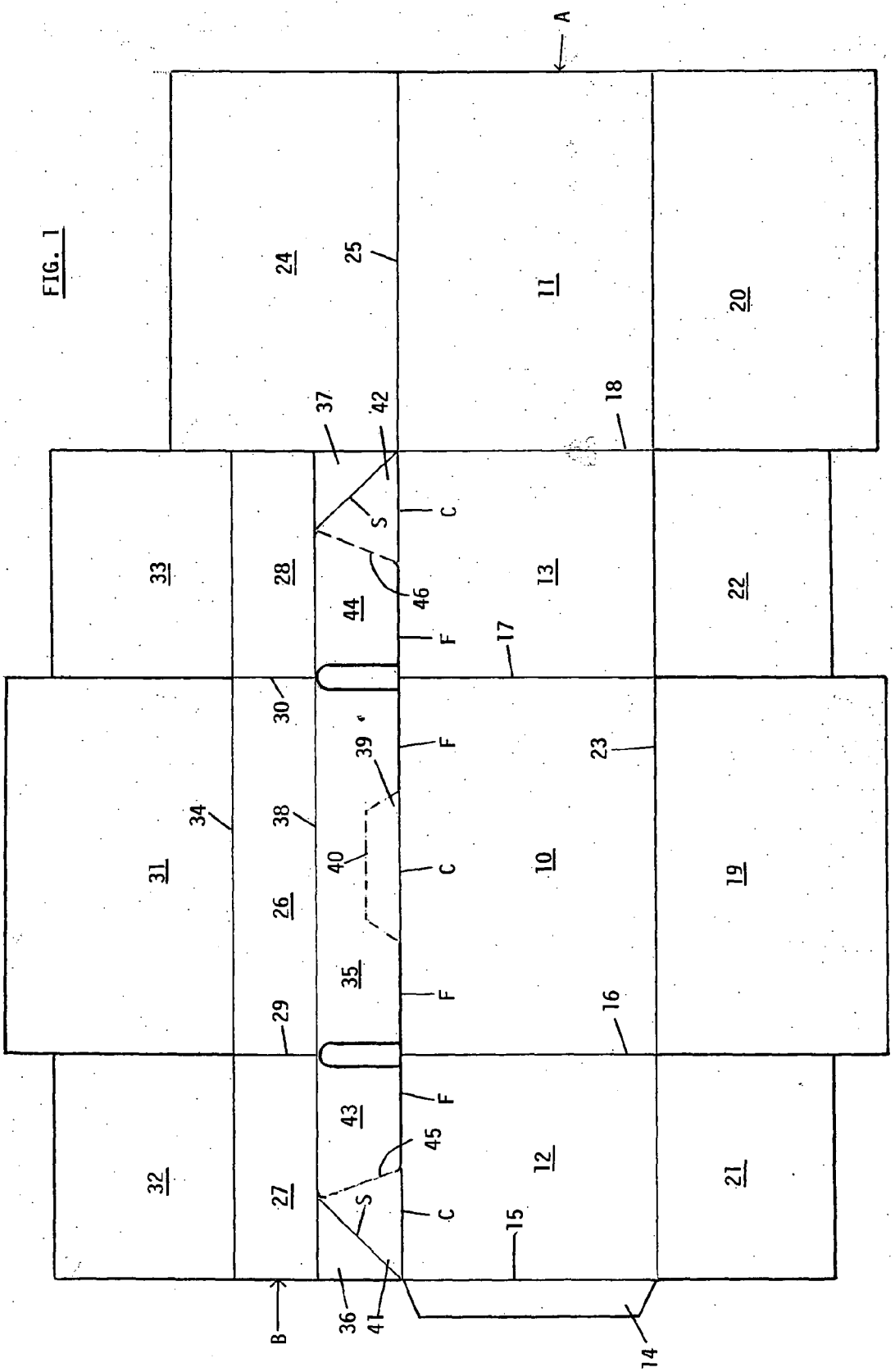
characterised in that:

- a connecting membrane (41, 42) extends obliquely and downwardly from a crease line (S) along the hypotenuse of each of said glue tabs (36, 37) in the shape of a right-angled triangle,
- said connecting membrane (41, 42) is joined, at its lower edge, to a corresponding one of said side panels (12, 13) of the first blank portion (A) by a crease line (C),
- said connecting membrane (41, 42) includes a glue flap (43, 44) which is separable therefrom along a tear line (45, 46) and is further joined, at its upper edge, to a corresponding one of said side bands (27, 28), along a length of said longitudinal crease line (38), said glue flap (43, 44) being foldable along said longitudinal crease line (38) and being made to adhere to said corresponding one of said side bands (27, 28).

2. Box according to claim 1, **characterised in that** for forming the box cover said longitudinal flap (24) of the first blank portion (A) is interposed between and adhered to said longitudinal flap (31) and to said side flaps (32, 33) of the second blank portion (B).

3. Box according to claim 1, **characterised in that**, after the lip (39) is separated from the glue tab (35), when the box is first opened, said glue tab (35) forms a step portion (47) along the tear line (40), so as to permit the lip (39) to be releasably latched thereto when the cover is lowered for closing the box.

FIG. 1


A
B
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11
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37
42
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28
44
46
13
22
C
S
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FIG. 2

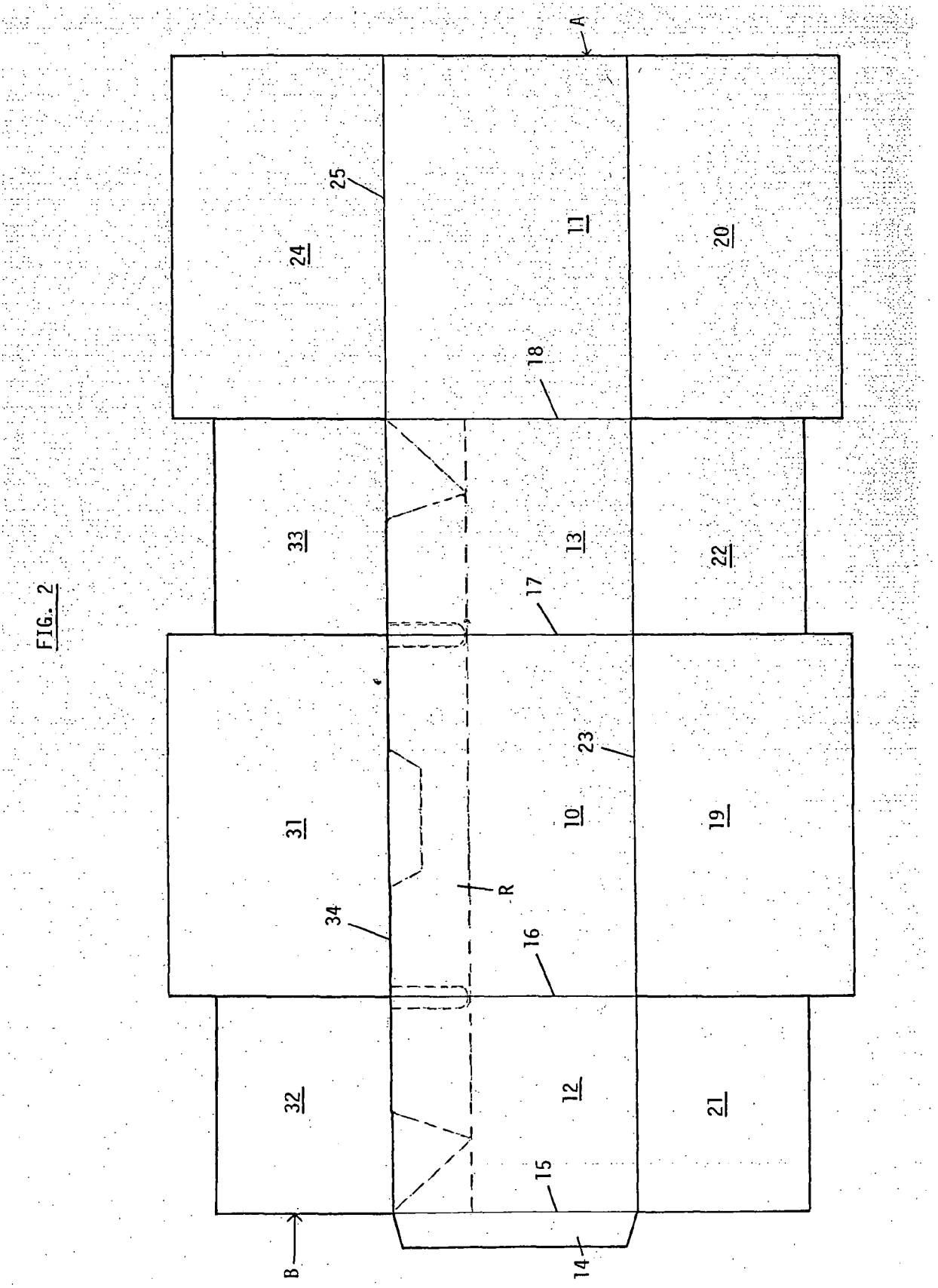
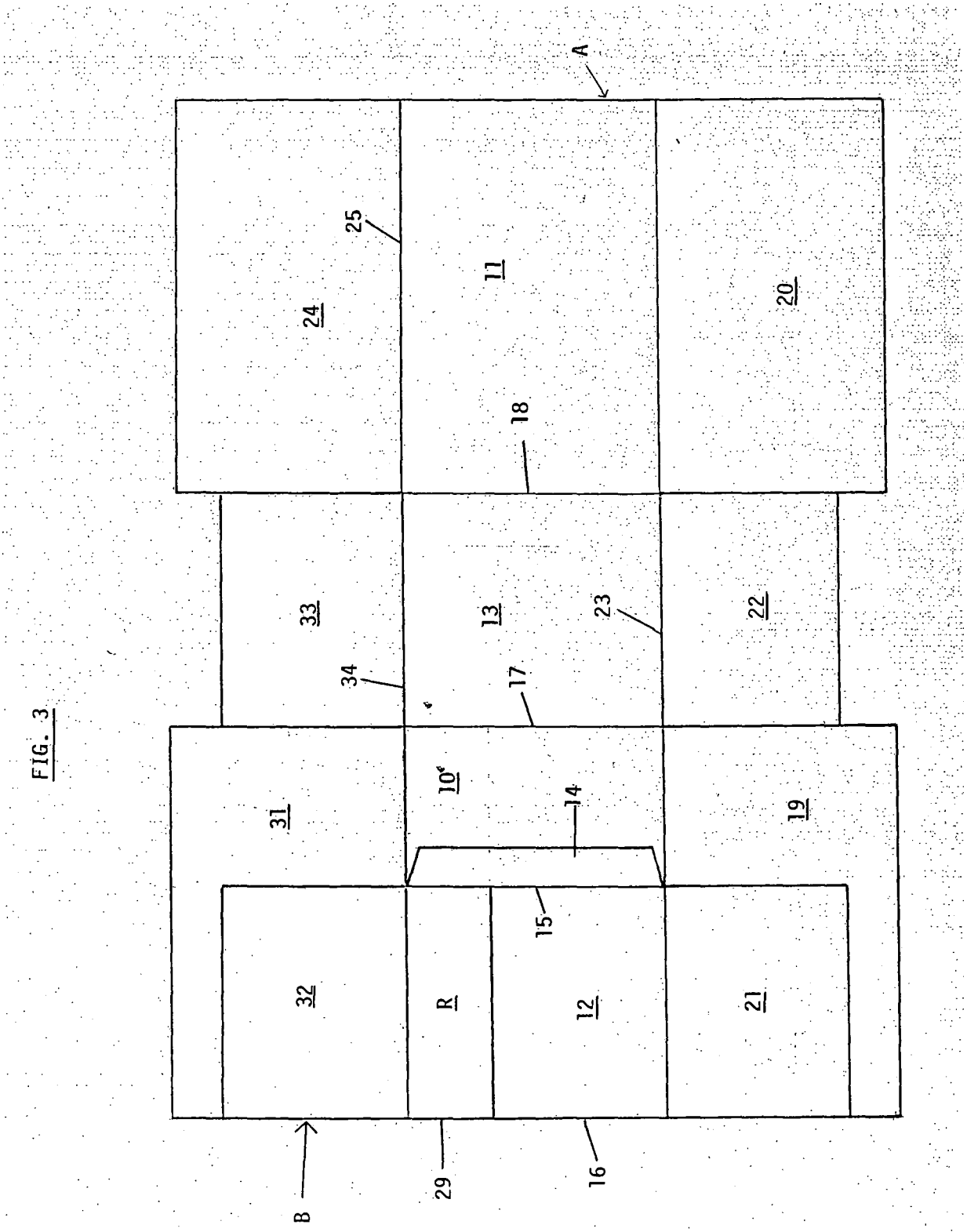


FIG. 3



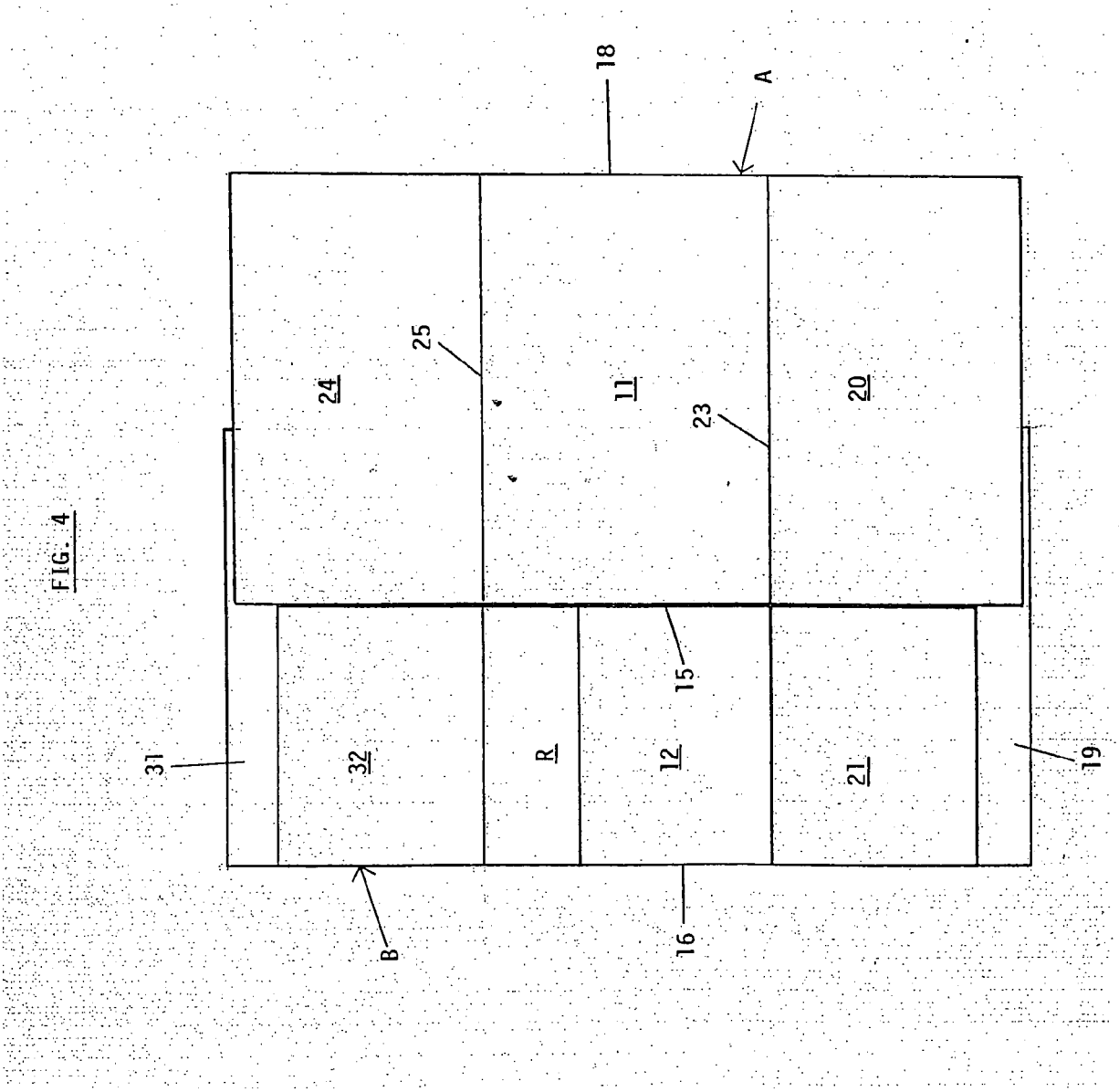


FIG. 4

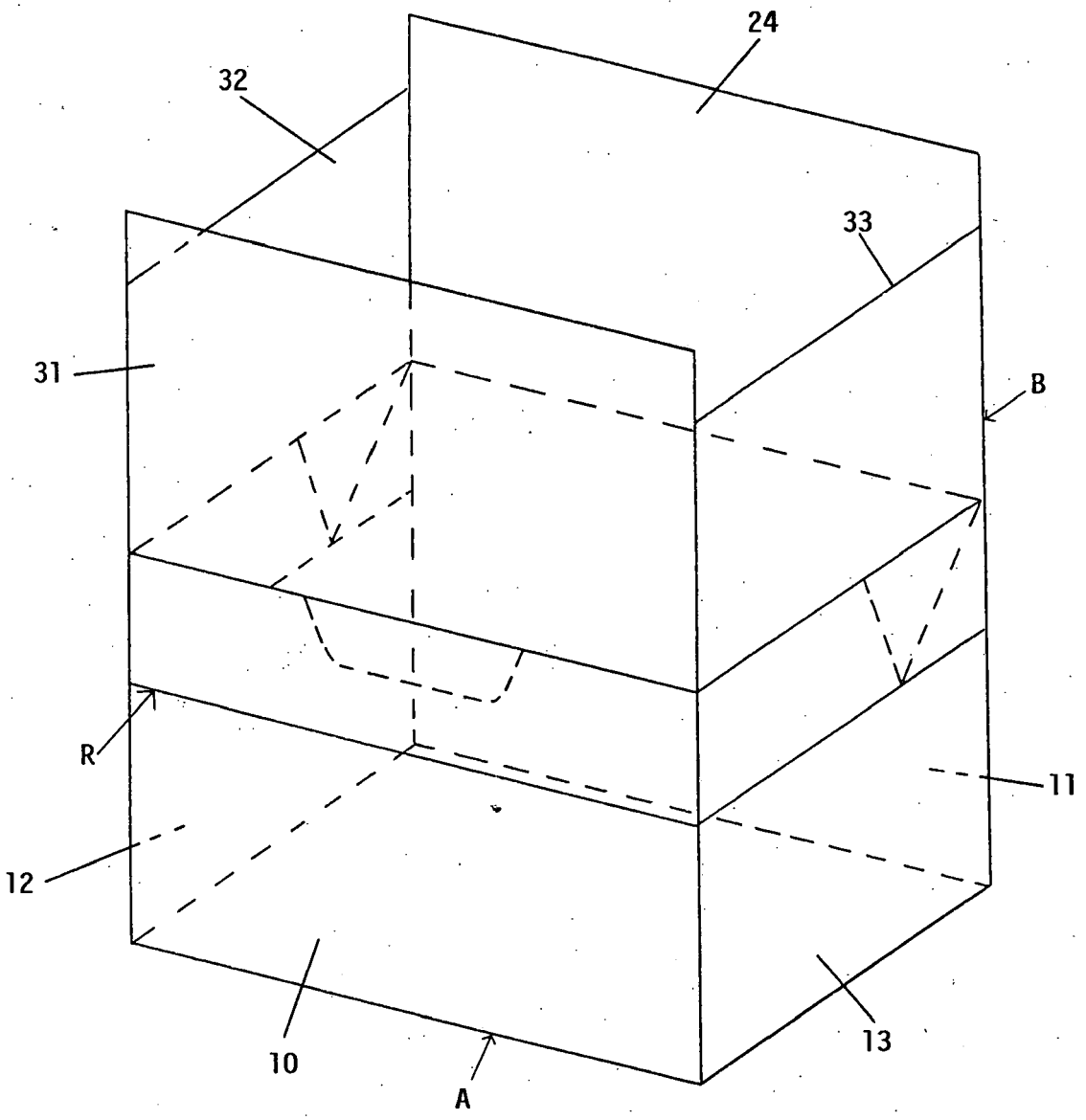
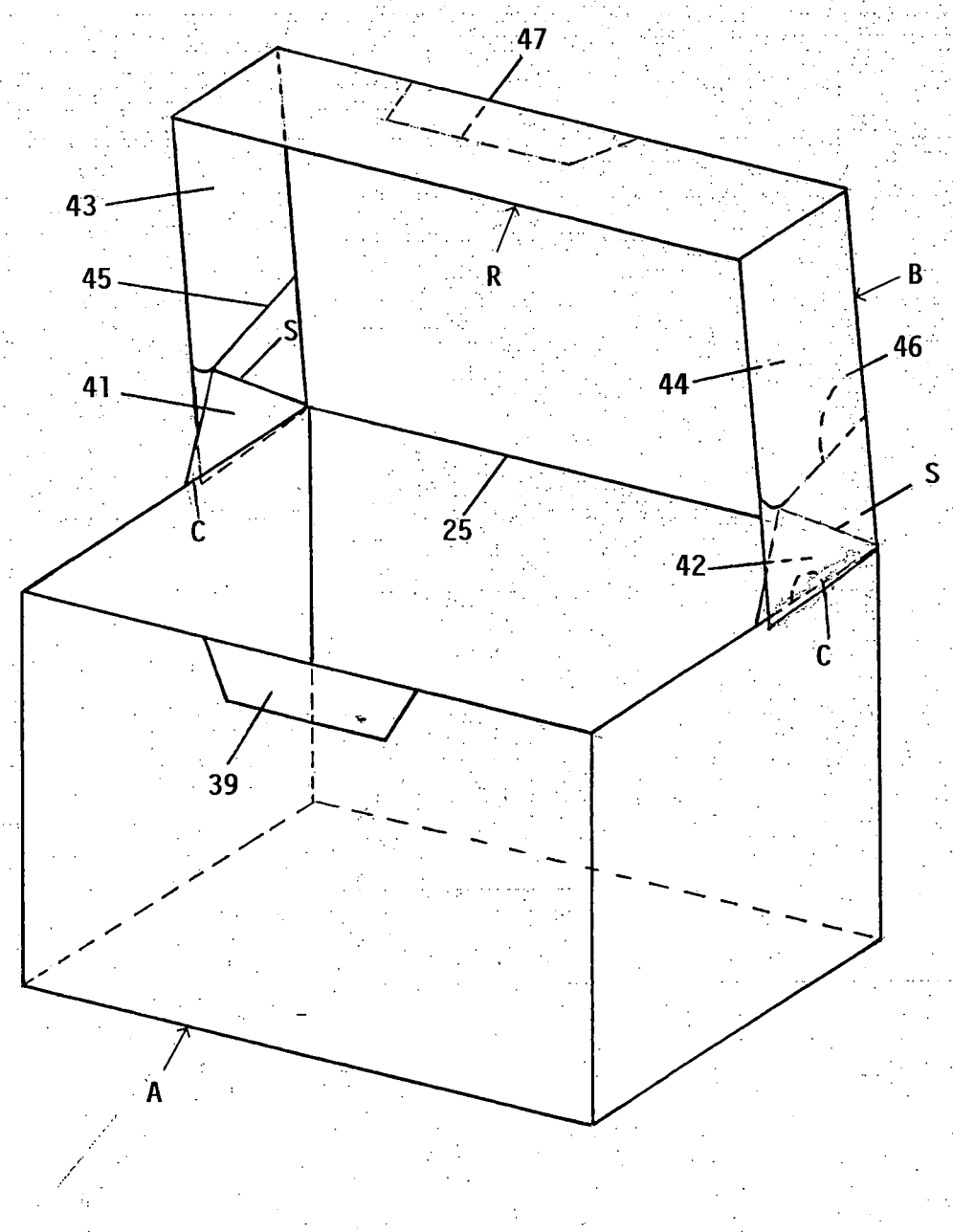


FIG. 5

FIG. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 09 00 8696

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 75 33 244 U (CO PAK VERPACKUNG GMBH) 22 April 1976 (1976-04-22) * the whole document * -----	1-3	INV. B65D5/54 B65D5/66
A	DE 93 12 675 U1 (EDELMANN CARL GMBH [DE]) 7 October 1993 (1993-10-07) * the whole document * -----	1-3	

TECHNICAL FIELDS SEARCHED (IPC)

B65D
B31B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	27 October 2009	Zanghi, Amedeo

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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27-10-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 7533244 U	22-04-1976	NONE	
DE 9312675 U1	07-10-1993	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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Patent documents cited in the description

- DE 7533244 U **[0002]**