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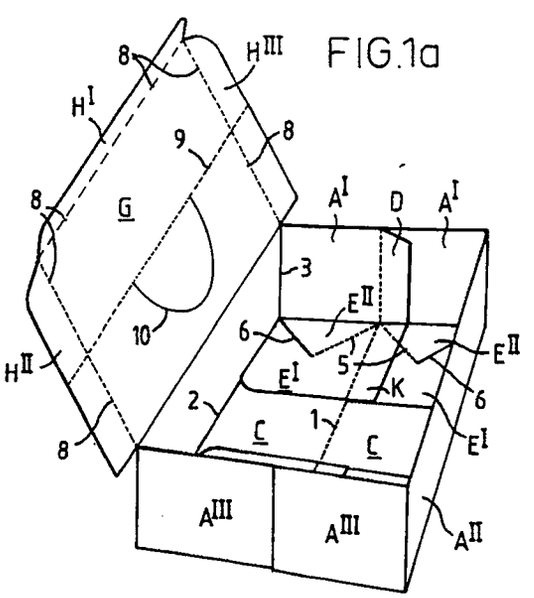
(54) Packing device made from one unitary blank.

(57) Packing device made from one unitary blank, with a bottom wall which is composed of at least two mutually hingeable bottom sections C and which is hingeably connected along at least a part of its longitudinal edges to at least two side walls A, which packing device can be brought from a substantially flat position, in which inner sides of the bottom sections C face each other, into an upright position, in which the side walls A are substantially perpendicular to the bottom wall and are connected together.

FIG.1a



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PACKING DEVICE MADE FROM ONE UNITARY BLANK

The invention relates to a packing device made from one unitary blank. The invention also relates to a unitary blank manifestly intended for making such a packing device.

Packing devices made from one unitary blank are generally known. Commerce especially requires of such known packing devices that they can be made simply and quickly from the unitary blank, that they are sturdy and therefore have a relatively long useful life, and that they present a packed product in the most attractive manner practicable to, for instance, the shopping public.

Major drawbacks of the known packing devices made from, for example, cardboard are that they generally have to be folded together from one unitary blank in a difficult, often laborious, fashion, that they often lack adequate strength for the products to be packed therein and that they display products so packed in a rather unattractive manner to, for instance, the public. With regard to the lack of adequate strength of known packing devices, it is worth observing that their bottom walls in particular leave much to be desired in strength, inasmuch as these are not generally in one piece.

It is an object of the invention to provide a very sturdy packing device with a strong bottom wall which can be made quite simply and efficiently from one unitary blank and which displays products packed therein in a highly attractive manner to, for instance, the public.

To this end, a packing device of the type mentioned hereinbefore is characterized in that it is provided with a bottom wall which is composed of at least two mutually hingeable bottom sections and which is hingeably connected along at least a part of its longitudinal edges to at least two side walls, which packing device can be brought from a substantially flat position, in which inner sides of the bottom sections face each other, into an upright position, in which the side walls are substantially perpendicular to the bottom wall and are connected together.

Some known packing devices are provided with a bottom wall and perpendicular side walls which can be folded towards the bottom wall, whereby the inner sides of the side walls face the inner side of the bottom wall. A drawback of these kwown packing devices - as opposed to a packing device of the invention - is that the side walls have a maximum height of half the width of the bottom wall, because in the folded position of the side walls no overlap thereof is allowed in actual practice.

One embodiment of a packing device according to the invention is characterized in that a folding line along which the bottom sections are mutually hingeable runs parallel to a folding line along which a side wall and the bottom wall are mutually hingeable.

A further embodiment of a packing device according to the invention is characterized in that in the upright position of the packing device the side walls are fastened together with the aid of a fixing flap.

A further embodiment of a packing device according to the invention is characterized in that a bottom section is hingeably connected along at least a part of its longitudinal edges to at least one bottom wing which is disposed perpendicular to the said bottom section in the upright position of the packing device.

A further embodiment of a packing device according to the invention is characterized in that the aforesaid one or more bottom wings are provided with at least two mutually hingeable bottom segments which lie substantially in one plane in the flat and upright positions of the packing device and which are perpendicular to the bottom section in the upright position of the packing device.

A further embodiment of a packing device according to the invention is characterized in that a side wall is hingeably connected along at least a part of its longitudinal edges to at least one side wing which is disposed parallel to a bottom section in the upright position of the packing device.

A further embodiment of a packing device according to the invention is characterized in that the aforesaid one or more side wings are provided with at least two mutually hingeable side segments which lie substantially in one plane in the flat and upright positions of the packing device and which are parallel to a bottom section in the upright position of the packing device.

A further embodiment of a packing device according to the invention is characterized in that at least one side wall is hingeably connected along at least a part of its longitudinal edges to a cover wall which in the upright position of the packing device can be folded in.

Yet another embodiment of a packing device according to the invention is characterized in that the cover wall is provided with means for making it a display wall. These means are, for example, folding lines, as will be elucidated in the description below.

The invention will now be described in more detail with reference to the accompanying figures, in which

figures 1a-1b, figures 2a-2b and figures 3a-3b depict embodiments of a packing device ac-

cording to the invention in the upright position and as a unitary blank, respectively;
figures 4a-4b and figures 5a-5b represent further embodiments of a packing device according to the invention in the upright position and as a unitary blank, respectively;
figure 5c shows a side view of the packing device of figure 5a wherein the cover wall has been turned into a display wall; and
figures 6 and 7 show the way in which a packing device according to figures 1-3 and figures 4-5 can be brought from a substantially flat position into an upright position (and vice versa), respectively.

In figure 1b a bottom wall is seen to be composed of two bottom sections C which are mutually hingeable along a folding line 1, whilst the bottom wall is hingingly connected to two side walls A along at least a part of its longitudinal edges, denoted folding lines 2. The packing device according to figures 1a-1b can be brought from a substantially flat position, in which inner sides of the bottom sections C face each other, into an upright position (figure 1a) in which the side walls A are substantially perpendicular to the bottom wall and are attached to one another with the aid of a fixing flap D. It is to be observed that the fold 1 on which the bottom sections C are mutually hingeable runs parallel to the folds 2 on which the side walls A and the bottom wall are mutually hingeable.

The side walls A are each divided by means of folding lines 3 into sections A^{I}, A^{II} and A^{III}, so that in the upright position of the packing device (figure 1a) sections A^{I} and A^{III} constitute the end side walls of the packing device and sections A^{II} form the side walls of the packing device in the longitudinal direction.

The side wall sections A^{I} are each connected hingingly at least along a part of their longitudinal edges, denoted folding lines 4, to side wings E which in the upright position of the packing device (figure 1a) are disposed parallel to the bottom sections C. The side wings E are each provided with two side segments E^{I} and E^{II} which are mutually hingeable along folding lines 5 and which are separated from one another along intersection lines 6. Adjacent side wings E are separated from one another by means of an intersection line 7. The side segments E^{I} and E^{II} lie substantially in one plane in the flat and upright positions of the packing device, in which positions adjacent side wings E are attached to one another with the aid of a fixing flap K.

One side wall A^{II} is hingeably connected along at least a part of its longitudinal edges to a cover wall G which in the upright position of the packing device (figure 1a) can be folded in. The cover wall G is hingeably connected along the longitudinal edges 8 to cover wall wings H^{I}, H^{II}, H^{III}. The cover wall G is provided with a folding line 9 and an intersecting line 10 to function as a display wall.

The packing device according to figures 2a-2b corresponds with that according to figures 1a-1b, it being understood that two side wall sections A^{I} are hingingly connected to strengthening flaps L along at least a part of their longitudinal edges, denoted folding lines 11. These strengthening flaps L can be brought parallel to the side wall sections A^{I} - (along the arrrow of figure 2a) thus strengthening these side wall sections A^{I}. Parts of the packing device according to figures 2a-2b which correspond with parts of the packing device according to figures 1a-1b have been denoted with the same reference numerals.

The packing device according to figures 3a-3b corresponds with that according to figures 1a-1b, on the understanding that the cover wall G is separated from the respective side wall section A^{II} along the intersecting line 12, and is hingingly connected therewith along the folding line 13, thus allowing the cover wall G to function as a display wall (figure 3a). A side wall section A^{II} is hingeably connected with a supporting flap M which supports the cover wall when used as a display wall (figure 3a). Parts of the packing device according to figures 3a-3b which correspond with parts of the packing device according to figures 1a-1b have been denoted with the same reference numerals.

In figure 4b once again a bottom wall is seen to be composed of two bottom sections C which are mutually hingeable along a folding line 1, whilst the bottom wall is hingingly connected to two side walls A along at least a part of its longitudinal edges, denoted folding lines 2. The packing device according to figures 4a-4b can be brought from a substantially flat position, in which inner sides of the bottom sections C face each other, into an upright position (figure 4a) in which the side walls A are substantially perpendicular to the bottom wall and are attached to one another with the aid of a fixing flap D. The fold 1 on which the bottom sections C are mutually hingeable runs parallel to the folds 2 on which the side walls A and the bottom wall are mutually hingeable.

The side walls A are again each divided by means of folding lines 3 into sections A^{I}, A^{II} and A^{III}, so that in the upright position of the packing device (figure 4a) sections A^{I} and A^{III} constitute the end side walls of the packing device and sections A^{II} form the side walls of the packing device in the longitudinal direction.

The bottom sections C are each connected hingingly at least along a part of their longitudinal edges, denoted folding lines 14, to bottom wings B which in the upright position of the packing device

(figure 4a) are at right angles to the bottom sections C. The bottom wings B are each provided with two bottom segments B^I and B^{II} which are mutually hingeable along folding lines 15 and which are separated from one another along intersecting lines 16. The bottom segments B^I and B^{II} lie substantially in one plane in the flat and upright positions of the packing device. Adjacent bottom wings B are mutually hingeable along folding lines 17.

The packing device according to figures 5a-5c corresponds with that according to figures 4a-4b, it being understood that one side wall A^{II} is provided with a supporting flap M and the other side wall A^{II} is provided with a cover wall G, in accordance with the packing device according to figures 3a-3b. Figure 5c shows a side view of the packing device of figure 5a, wherin the cover wall G has been turned into a display wall. Parts of the packing device according to figures 4-5 which correspond with parts of the packing device according to figures 1-3 have been denoted with the same reference numerals.

Figures 6 and 7 show the way in which a packing device according to figures 1-3 and figures 4-5 can be brought from a substantially flat position into an upright position (and vice versa), respectively, by putting the side wings E and bottom wings B inwardly (and outwardly), respectively.

It is to be observed that in the present drawings folding lines and intersection lines are shown as discontinues and continues lines, respectively.

Claims

1. A packing device made from one unitary blank, characterized in that it is provided with a bottom wall which is composed of at least two mutually hingeable bottom sections and which is hingeably connected along at least a part of its longitudinal edges to at least two side walls, which packing device can be brought from a substantially flat position, in which inner sides of the bottom sections face each other, into an upright position, in which the side walls are substantially perpendicular to the bottom wall and are connected together.

2. A packing device according to claim 1, characterized in that a folding line along which the bottom sections are mutually hingeable runs parallel to a folding line along which a side wall and the bottom wall are mutually hingeable.

3. A packing device according to claim 1 or 2, characterized in that in the upright position of the packing device the side walls are fastened together with the aid of a fixing flap.

4. A packing device according to any one of the preceding claims, characterized in that a bottom section is hingeably connected along at least a part of its longitudinal edges to at least one bottom wing which is disposed perpendicular to the said bottom section in the upright position of the packing device.

5. A packing device according to claim 4, characterized in that the aforesaid one or more bottom wings are provided with at least two mutually hingeable bottom segments which lie substantially in one plane in the flat and upright positions of the packing device and which are perpendicular to the bottom section in the upright position of the packing device.

6. A packing device according to any one of the preceding claims, characterized in that a side wall is hingeably connected along at least a part of its longitudinal edges to at least one side wing which is disposed parallel to a bottom section in the upright position of the packing device.

7. A packing device according to claim 6, characterized in that the aforesaid one or more side wings are provided with at least two mutually hingeable side segments which lie substantially in one plane in the flat and upright positions of the packing device and which are parallel to a bottom section in the upright position of the packing device.

8. A packing device according to any one of the preceding claims, characterized in that at least one side wall is hingeably connected along at least a part of its longitudinal edges to a cover wall which in the upright position of the packing device can be folded in.

9. Packing device according to claim 8, characterized in that the cover wall is provided with means for making it a display wall.

10. A unitary blank manifestly intended for making a packing device according to any one of the preceding claims.

FIG.1a

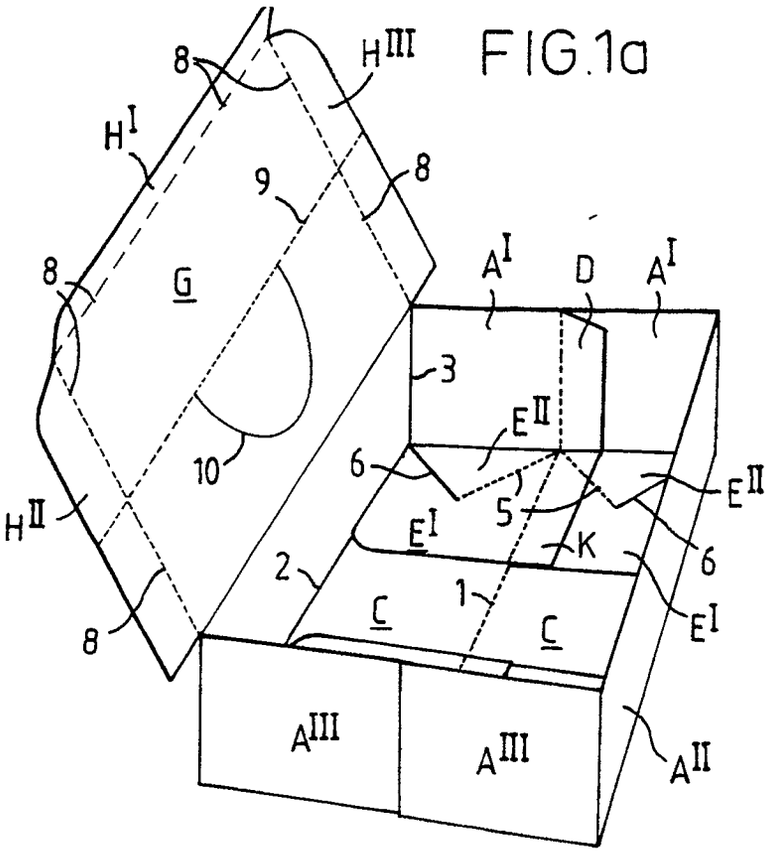

H^III
8
H^I
9
8
8
G
A^I
D
A^I
3
E^II
6
10
E^II
5
H^II
E^I
K
6
2
1
E^I
C
C
8
A^III
A^III
A^II

FIG.1b

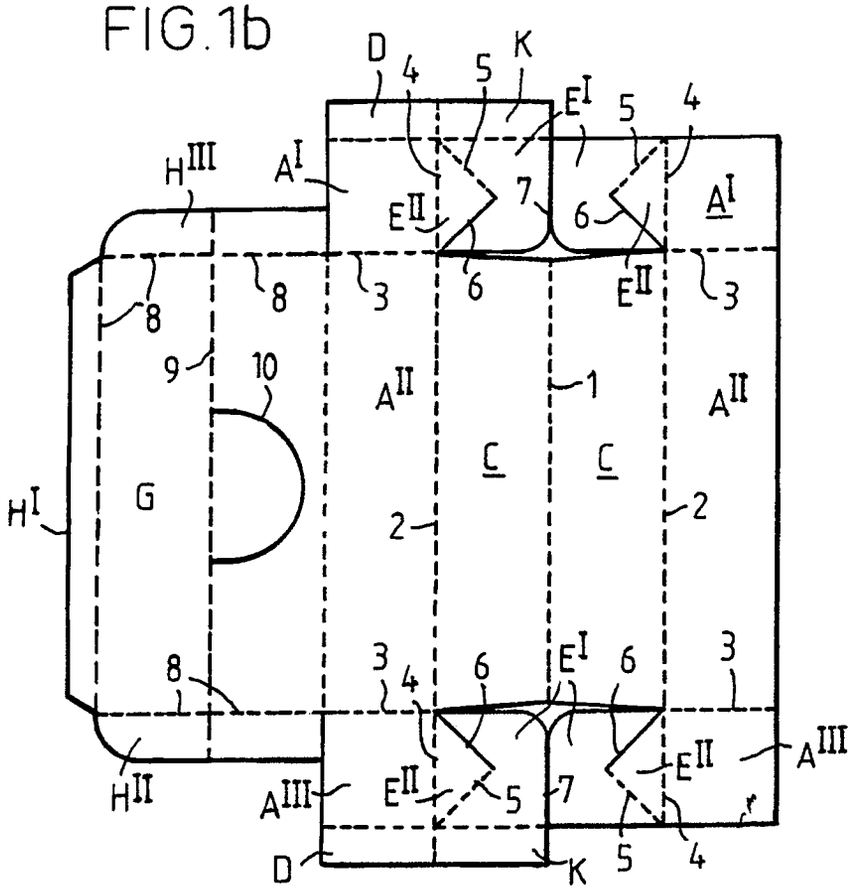

D
4
5
K
E^I
5
4
H^III
A^I
E^II
7
6
A^I
8
8
3
6
E^II
3
9
10
A^II
1
A^II
H^I
G
C
C
2
2
8
3
4
6
E^I
6
3
H^II
A^III
E^II
5
7
E^II
A^III
D
K
5
4

FIG.2a

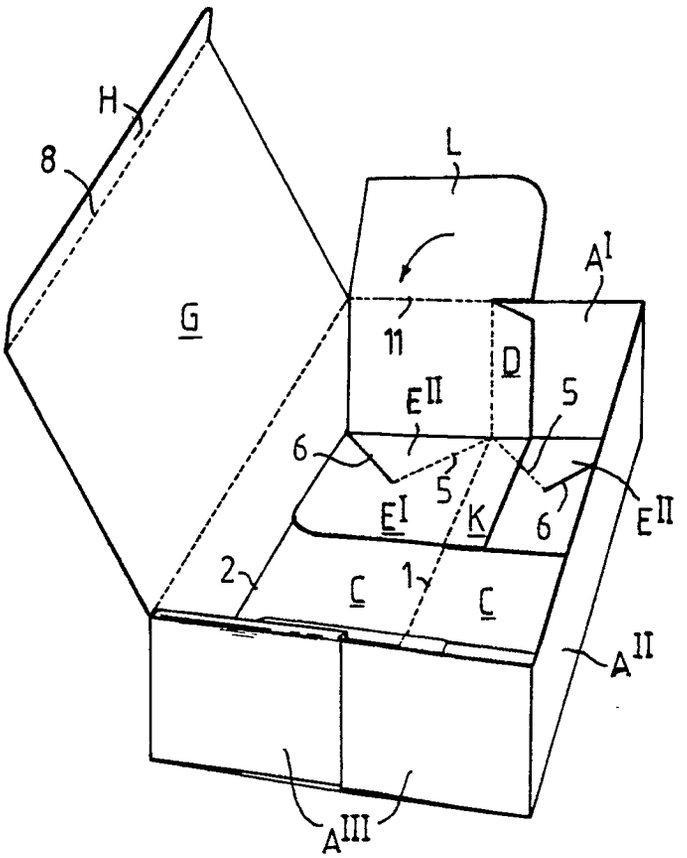

H
8
L
G
11
D
A^I
E^{II}
5
6
5
E^I
K
6
E^{II}
2
C
1
C
A^{II}
A^{III}

FIG.2b

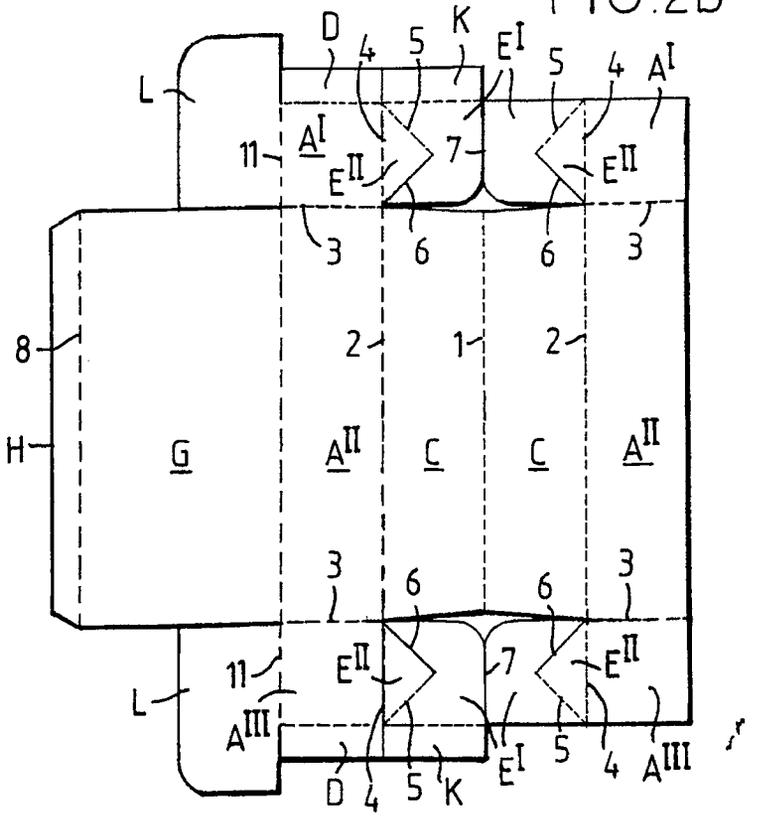

D
4
5
K
E^I
5
4
A^I
L
11
A^I
E^{II}
7
E^{II}
3
6
6
3
8
2
1
2
H
G
A^{II}
C
C
A^{II}
3
6
6
3
11
E^{II}
7
E^{II}
L
A^{III}
E^I
5
4
A^{III}
D
4
5
K

FIG.3a

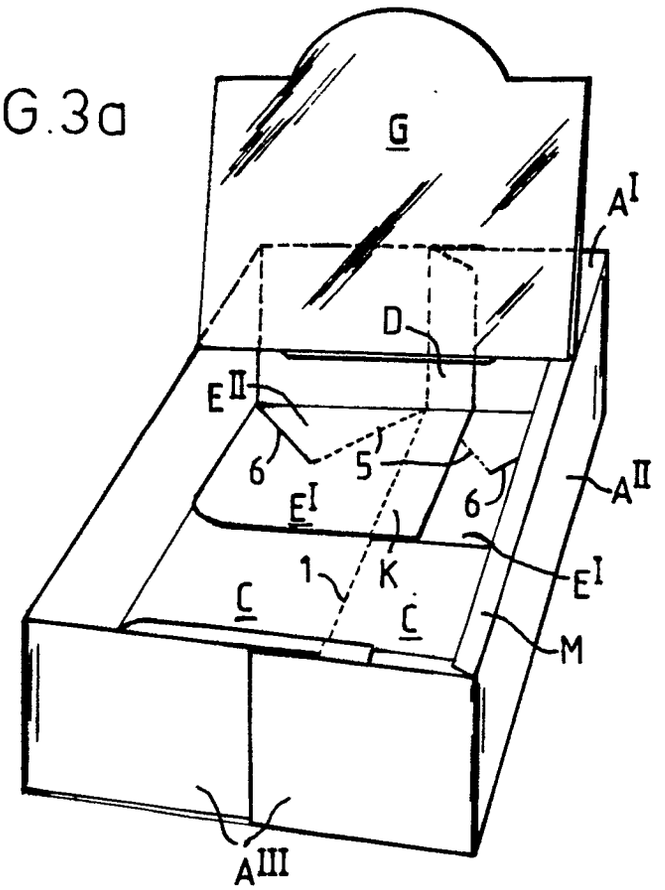

G
A I
D
E II
6
5
E I
A II
6
1
K
E I
C
C
M
A III

FIG.3b

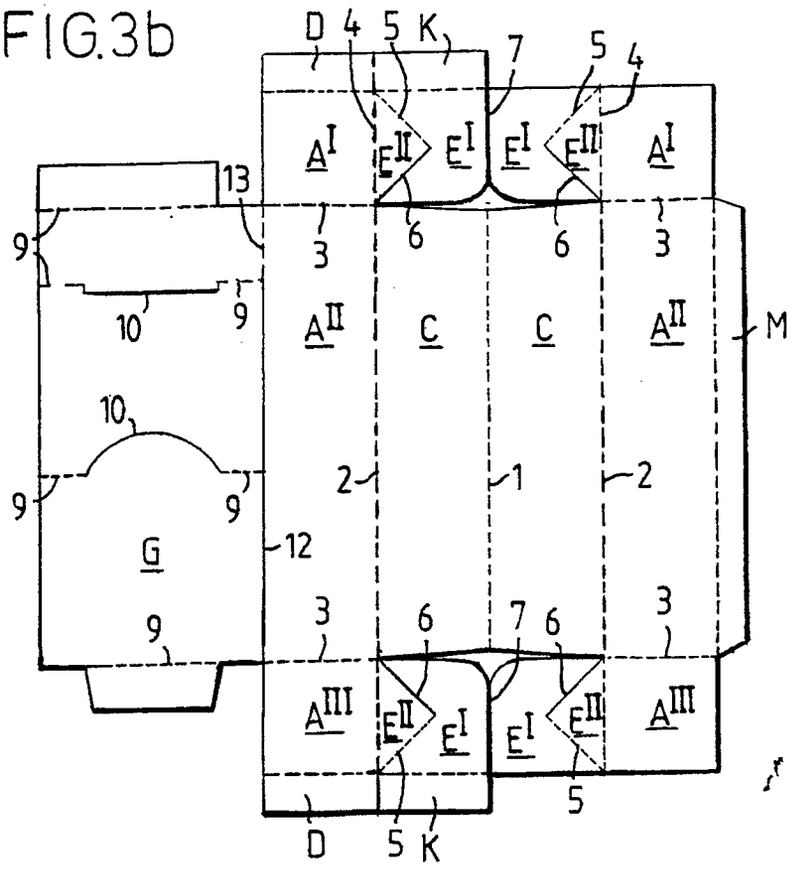

D 4 5 K
7
5 4
A I
E II
E I
E I
E II
A I
13
9
3
6
6
3
10
9
A II
C
C
A II
M
10
9
9
2
1
2
G
12
9
3
6
7 6
3
A III
E II
E I
E I
E II
A III
5
D
5 K

FIG.4a

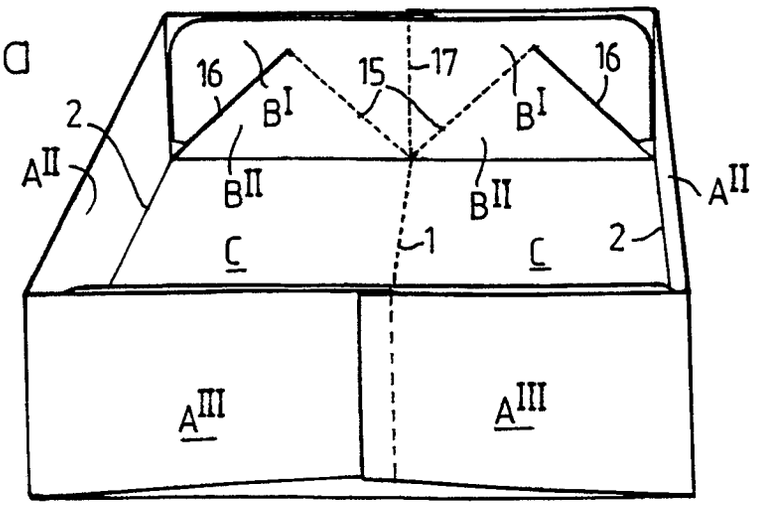

16
B^I
15
17
B^I
16
2
A^II
B^II
B^II
A^II
C
1
C
2
A^III
A^III

FIG.4b

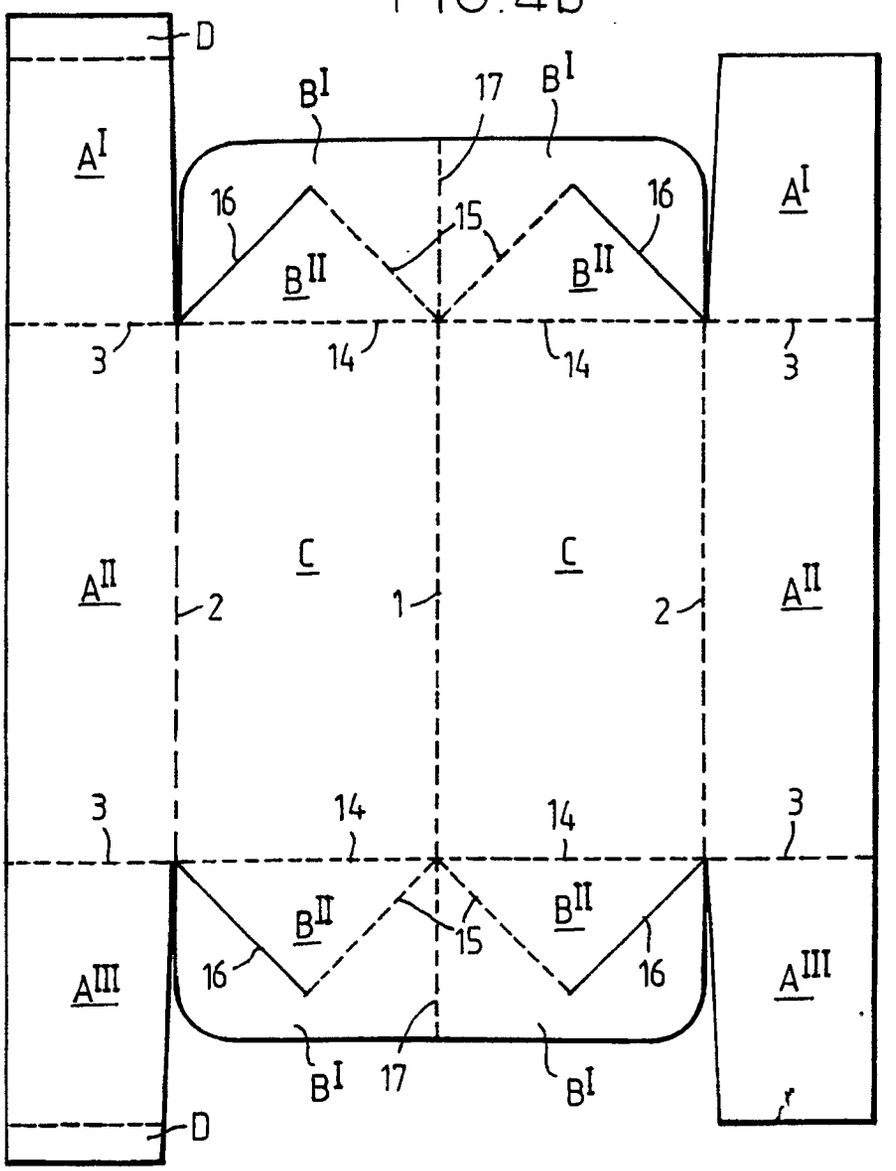

D
B^I
17
B^I
A^I
A^I
16
15
16
B^II
B^II
3
14
14
3
A^II
C
C
A^II
2
1
2
3
14
14
3
B^II
B^II
A^III
16
15
16
A^III
B^I
17
B^I
D

FIG.5a

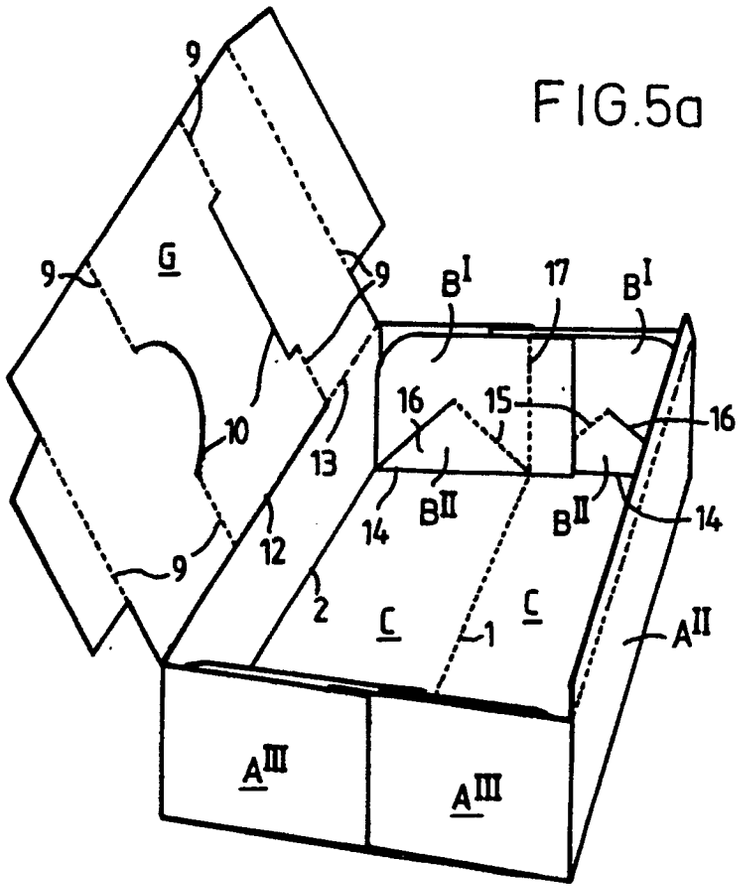


FIG.5

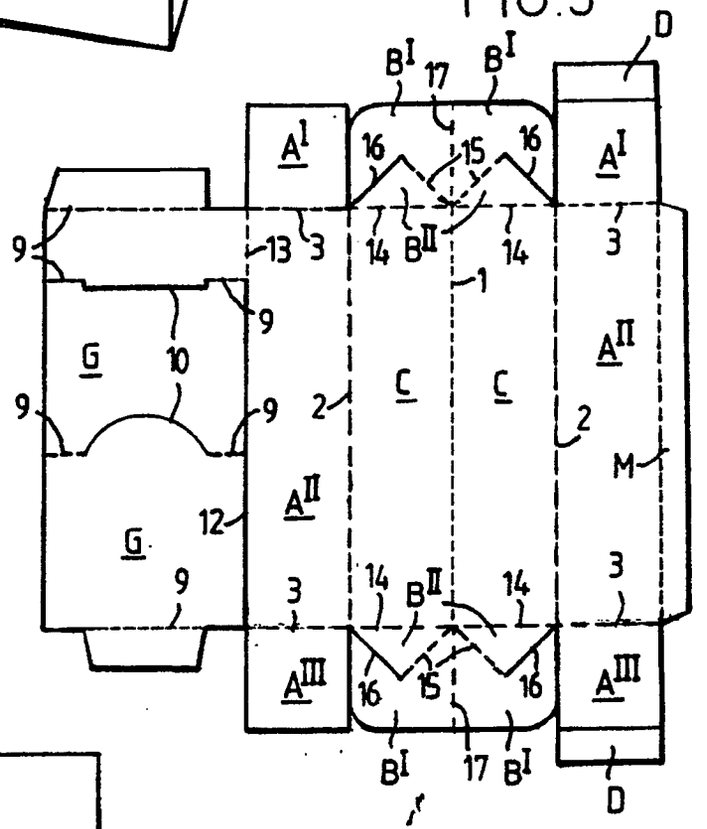


FIG.5c

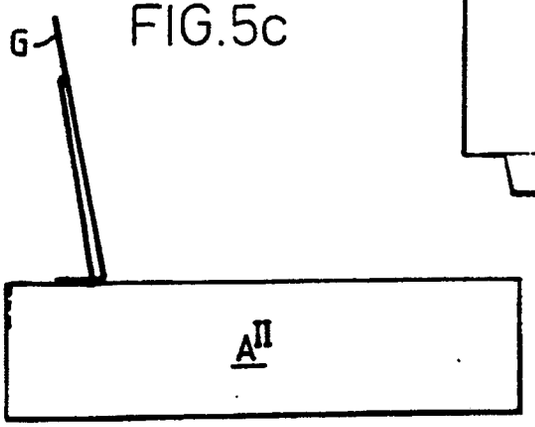


FIG.7

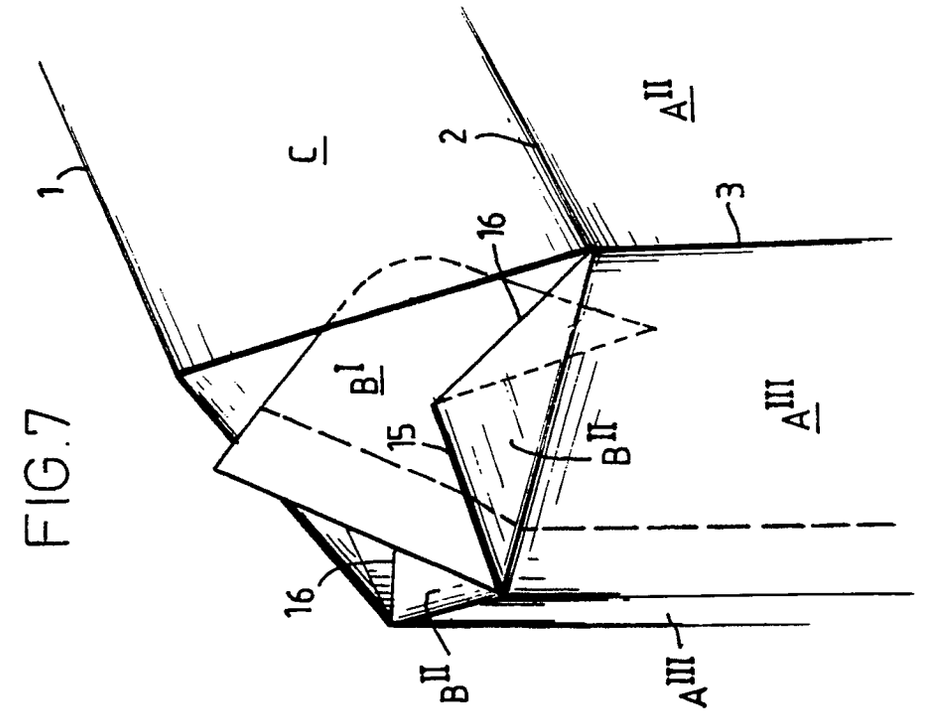
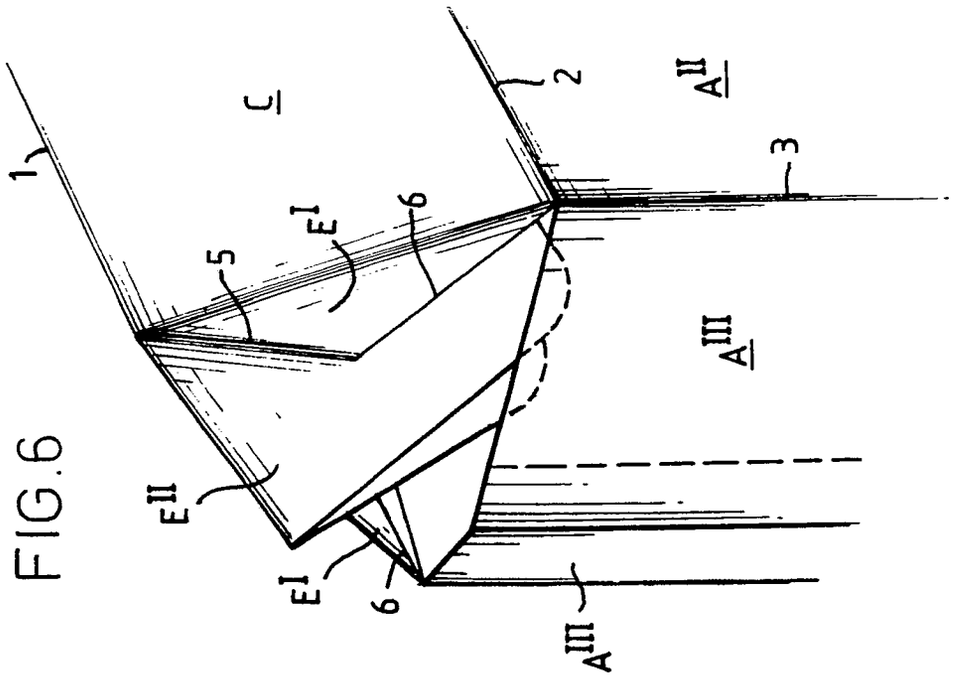

1
C
2
A II
3
16
B I
15
B II
A III
16
B II
A III

FIG.6


1
C
2
A II
3
5
E I
6
A III
E II
E I
6
A III