

July 8, 1969

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3,454,209

BLANK FOR A GLUED CARDBOARD BOX

Filed Jan. 30, 1967

Sheet 1 of 2

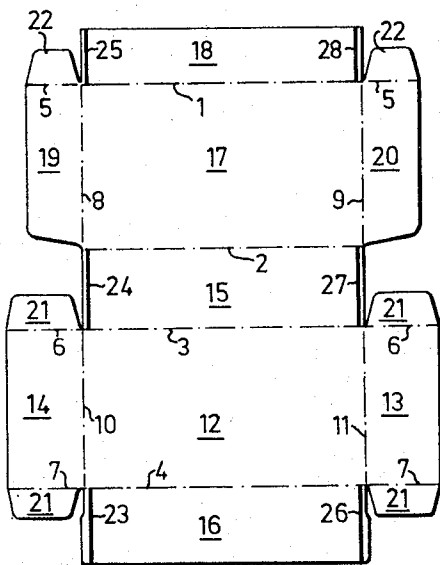


FIG. 1

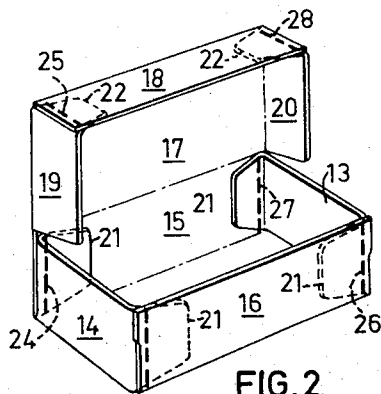


FIG. 2

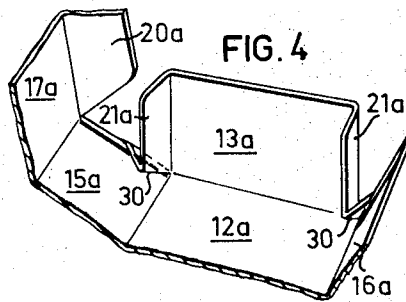


FIG. 4

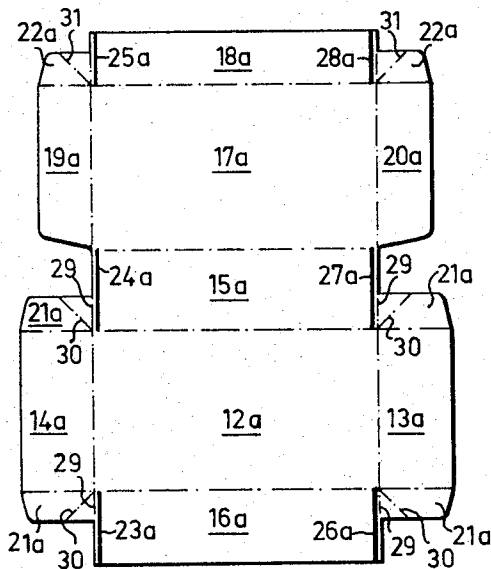


FIG. 3

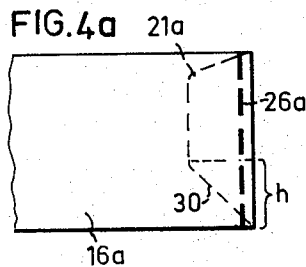


FIG. 4a

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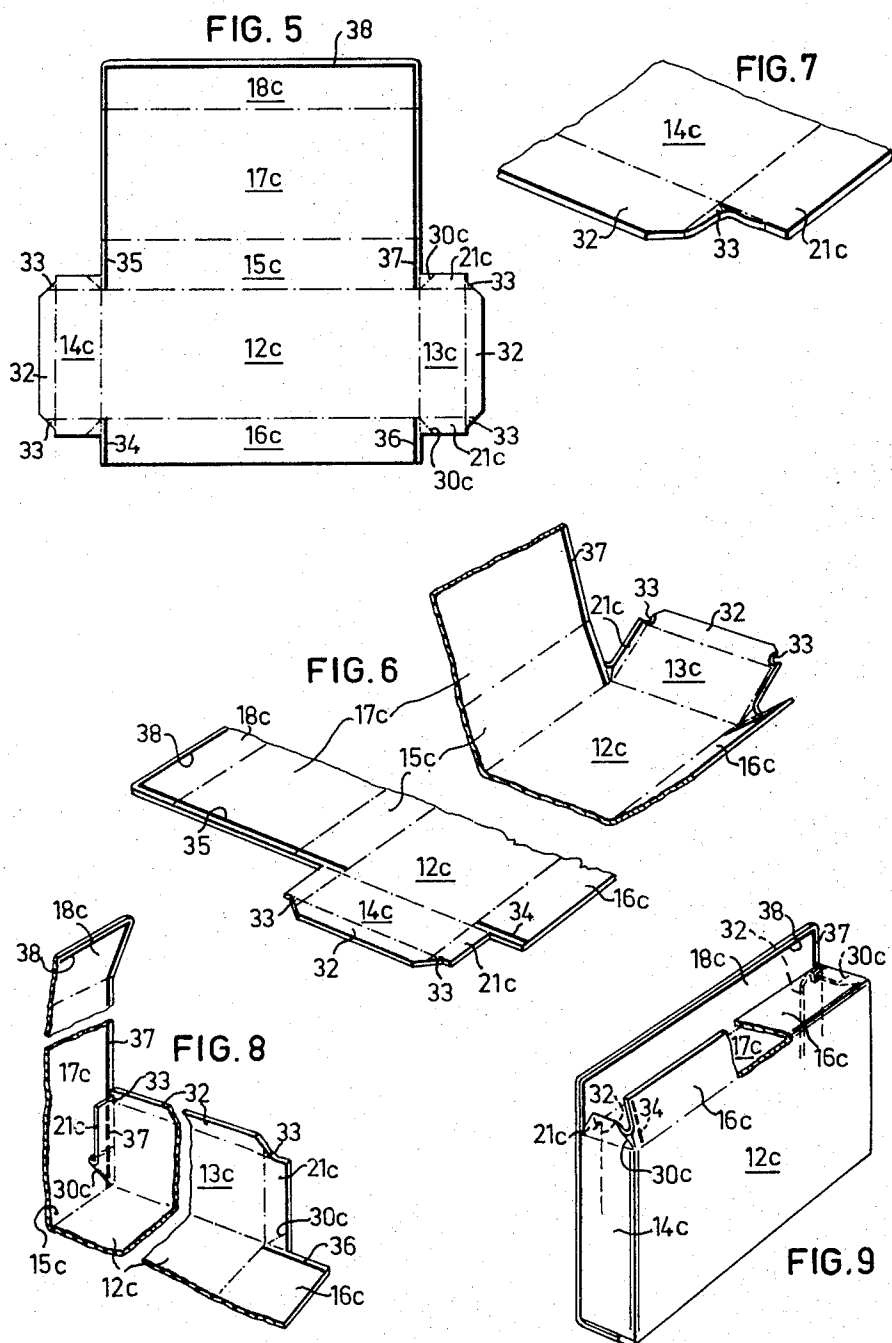
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6 Claims

ABSTRACT OF THE DISCLOSURE

A blank for a glued rectangular cardboard box having two opposite long side walls. The short side walls have end tabs. Near the end edges of the long side walls there are provided stripes of adhesive, said stripes being aligned with each other on either side of the blank and parallel to the fold lines between the bottom of the box and the short side walls, so that the end tabs of the short side walls may be glued to the insides of the long side walls. A cover is articulated to one of said long side walls. The cover has a longitudinal wing flap having adhesive strips along at least two of its edges.

This invention relates to a blank for a glued cardboard box. The blank is subdivided in a manner known per se by fold lines into panels corresponding to the bottom, the short walls and the long walls of the erected box. If the box is provided with a cover, this cover is articulated at one of its longitudinal edges to one of the long walls of the box. The other longitudinal edge of the cover has an extension in the form of a longitudinal wing flap adapted to be placed upon the outside of the other long wall of the erected box.

The object of the invention is to simplify the application of adhesive prior to the erection of the box and to devise the shape of the blank and the application of adhesive such as to obtain a sealed box. This object is attained by a blank which in accordance with the invention has the features indicated in the annexed claims. Due to the fact that the adhesive stripes are aligned with each other it is possible to ensure a high production capacity because the blanks can be advanced without interruption below adhesive-applying rollers of conventional types. Adhesive may be applied either immediately before erection of the box or immediately following up the punching of the blanks. In the latter case use is made of a drying thermoplastic adhesive which permits storing of the blanks and is heated immediately before the box is erected. Depending on the desired types of the erected box the blank can be formed in different manners within the scope of the invention, which will appear from the following description of three embodiments of the invention exemplified in the annexed drawings.

FIG. 1 illustrates a blank according to the invention, FIG. 2 a partly erected box made from the blank shown in FIG. 1, FIG. 3 is a modification of the blank shown in FIG. 1, FIG. 4 the blank according to FIG. 3 during erection of one short wall of the box, FIG. 4a a detail of one corner of the box, FIG. 5 a further modification of the blank shown in FIG. 1, FIG. 6 a perspective view of one end of the blank the other end of which is partly erected, FIG. 7 illustrates on an enlarged scale how a corner panel is prebent inwardly so as to facilitate inward turning thereof, FIG. 8 is a perspective view of one end of the almost finally erected box made from the blank shown in FIG. 5 with certain parts broken away to expose essential details, and FIG. 9 illustrates the erected box made from the blank shown in FIG. 5 and having one

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end open for filling whereas the other end is shown in a partly closed position after filling.

The blank illustrated in FIG. 1 is by means of fold lines 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 subdivided into rectangular panels which are to form the bottom 12, the short walls 13, 14, the long walls 15, 16 and the cover or lid 17 of the erected box. At its outer longitudinal edge the cover has an extension in the form of a longitudinal wing flap 18, and at its short sides the cover has extensions in the form of transverse wing flaps 19, 20.

The short walls have extensions at their end edges in the form of end flaps 21. The transverse wing flaps 19, 20 of the cover have extensions at one end each in the form of end flaps 22.

For gluing the erected box the long walls 15, 16 and the longitudinal wing flap 18 of the cover are provided with adhesive stripes 23, 24, 25, 26, 27, 28, preferably of a thermoplastic adhesive. The adhesive stripes extend along two parallel lines located near the end edges of the long walls 15, 16 and the wing flap 18. On erection of the box the end flaps 21 of the short walls are glued to the adhesive stripes 23, 24, 27, 26, and the end flaps 22 of the cover are glued to the adhesive stripes 25, 28 on the wing flap 18, as is shown in FIG. 2. In certain cases the cover 17 shown in FIGS. 1 and 2 may be omitted.

FIG. 3 illustrates a modification of the blank shown in FIG. 1 and is suited for a more tight box. This blank differs from the blank shown in FIG. 1 in that the end tabs 21a of the short walls 13a, 14a are articulated at 29 to the adjacent long walls 15a, 16a and that a 45° fold line 30 extends from each corner of the bottom 12a obliquely through each end flap. Consequently, the lower end portions of the end tabs of the short walls will be doubled up about the fold line 30 during erection of the box so as to effect an absolutely tight corner at each of the corners of the bottom, the perfectly sealed zone extending upwards from the bottom to a height h (FIG. 4a) which is equal to the width of the end tabs 21a, as will be seen from FIG. 4. The adhesive stripes are indicated at 23a, 24a, 25a, 26a, 27a, 28a.

In the same way as at the end tabs of the short walls the wing flaps 19a, 20a of the cover 17a in FIG. 3 have extensions at one of their ends in the form of end tabs 22a which are articulated to the longitudinal wing flap 18a of the cover. These end tabs 22a, too have each a 45° fold line 31 which extends from the respective corner of the cover 17a and results in that the end tabs 22a of the wing flaps can be doubled inwards through about half of their lengths in the present case. Even these corners of the cover provide for an increased tightness.

FIG. 5 illustrates a further embodiment of the blank according to the invention which blank similar to the previously described blanks is by means of fold lines subdivided into rectangular panels corresponding to the bottom 12c, short walls 13c, 14c, long walls 15c, 16c and cover 17c of the erected box. At one longitudinal edge the cover is articulated to one long wall 15c, and at the other longitudinal edge the cover has an extension in the form of a wing flap 18c. Similar to FIG. 3, the short walls have extensions in the form of end tabs 21c which at their inner ends are articulated to the adjacent long walls. Similar to FIG. 3, these end tabs are adapted to be doubled inwards due to the fact that a 45° fold line 30c extends from each of the corners of the bottom.

As to the tray-forming lower portion of the box the embodiment shown in FIG. 5 is distinguished from the embodiment shown in FIG. 3 in that the short walls 13c, 14c have extensions at their upper edges in the form of wing flaps 32. Between adjacent ends of the end tabs 21c and the wing flaps 32 there is provided a small triangular

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panel 33 the free edge of which is aligned with the oblique corner of the wing flap 32.

In the embodiment illustrated in FIG. 5 the cover 17 has no transverse short walls.

Applied to the blank shown in FIG. 5 are adhesive stripes 34, 35, 36, 37 extending along parallel lines which are located at opposite edges of the blank near the end edges of the long walls 15c, 16c and the cover 17. The adhesive stripes 35, 37 on the long wall 15c are elongated and extend along the edges of the cover and the wing flap thereof and join an adhesive stripe 38 located near the free edge of the wing flap 18c.

During erection of the blank for forming a box or in connection with the manufacture of the blank the small triangular panels 33 are prebent, as shown in FIG. 7, in order to facilitate inward doubling of these panels during erection of the box according to FIGS. 6, 8 and 9.

As will be seen from FIGS. 8 and 9, the inwardly doubled triangular portion 33 at the respective corner of the erected box extends inwardly so far that the adhesive stripes 35, 37 on the cover will be placed upon part of the edges of the respective doubled triangular portion 33.

The box is erected in two steps. First, the short walls are erected and the cover is glued to the wing flaps 32 of the short walls 13c, 14c whereupon the box is placed on the long wall 15c, and the other long wall 16c and the wing flap 18c of the cover are erected so that the box is open for filling. After filling the end tabs 21c are turned inwards and at the same time the long wall 16c is turned downwards and glued to the inwardly turned end tabs 21c. In the next step the wing flap 18c of the cover is turned downward and glued to the upper side of the long wall 16c by means of the long adhesive stripe 38 at the edge of the flap of the cover and by means of the short remaining lengths of the adhesive stripes 35, 37 at the ends of the wing flap 18c of the cover.

Due to the above described design of the blank and arrangement of the adhesive stripes an effectively sealed package is obtained.

What I claim is:

1. A blank for a glued cardboard box, which blank is subdivided by fold lines into rectangular panels corresponding to the bottom, the short walls and the long walls of the erected box, said short walls having extensions at their ends in the form of end tabs, and the two long walls are provided with adhesive stripes positioned near the end edges thereof on either side of the blank and aligned with each other and parallel to the fold lines between the bottom and the short walls whereby said end tabs of the short walls may be adhered to the insides of the long walls, said blank containing a cover having a longitudinal edge articulated to one of the long walls of the box and another longitudinal edge having an extension in the form of wing flaps adapted to be placed outside the short walls of the erected box, each of the said transverse wing flaps of the cover having an extension at its end near the longitudinal wing flap of the cover in the form of an end tab, the longitudinal wing flap of the cover being provided with adhesive stripes positioned near the end edges thereof and aligned with the adhesive stripes on the long walls of the box whereby the end tabs of the transverse wing

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flaps may be adhered to the inside of the longitudinal wing flap of the cover.

2. A blank for a glued cardboard box, which blank is subdivided by fold lines into rectangular panels corresponding to the bottom, the short walls and the long walls of the erected box, said short walls having extensions at their ends in the form of end tabs, and the two long walls are provided with adhesive stripes positioned near the end edges thereof on either side of the blank and aligned with each other and parallel to the fold lines between the bottom and the short walls whereby said end tabs of the short walls may be adhered to the insides of the long walls, said blank containing a cover having a longitudinal edge articulated to one of the long walls of the box and another longitudinal edge having an extension in the form of a longitudinal wing flap to be placed upon the outside of the other long wall of the erected box, said cover having an adhesive stripe near the end of each of said transverse edges and positioned as an extension of the respective adhesive stripe on the long wall connecting said cover and said bottom, and said longitudinal wing flap having adhesive stripes near each of its edges and positioned to be an extension of the adhesive stripes on said cover.

3. A blank as claimed in claim 1 wherein the end tabs of the transverse wing flaps of the cover are articulated to the end edges of the longitudinal wing flap of the cover and a 45° fold line extends from the corners of the cover through the respective end tab.

4. A blank as claimed in claim 2 wherein the short walls have extensions at their upper ends in the form of wing flaps and the end edges of said wing flaps are connected to the end edges of the end tabs of the short walls by means of an intermediate panel adapted to be doubled inwardly during erection of the box so as to form a sealing fold between said end edges.

5. A blank as claimed in claim 4 wherein said intermediate panel is slightly prebent to facilitate doubling thereof during erection of the box.

6. A blank as claimed in claims 1, 2, 3, or 4 wherein the inner ends of the end tabs of the short walls are articulated to the long walls, and a 45° fold line extends from each corner of the bottom through the respective end tab so as to form a triangular sealing portion adapted to be adhered to the respective adjacent adhesive stripe on the long wall.

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U.S. Cl. X.R.

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