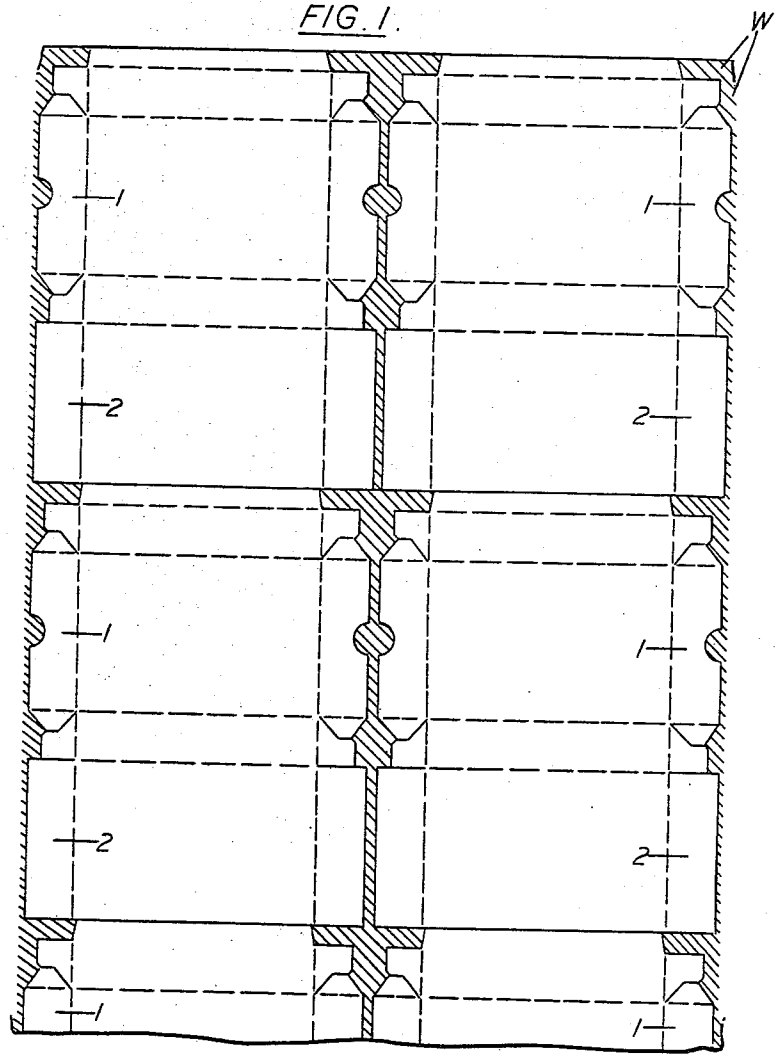
Nov. 12, 1963 R. W. E. MOSSE ETAL 3,110,433

INTERFITTING CARTON BLANKS

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FIG. 1.



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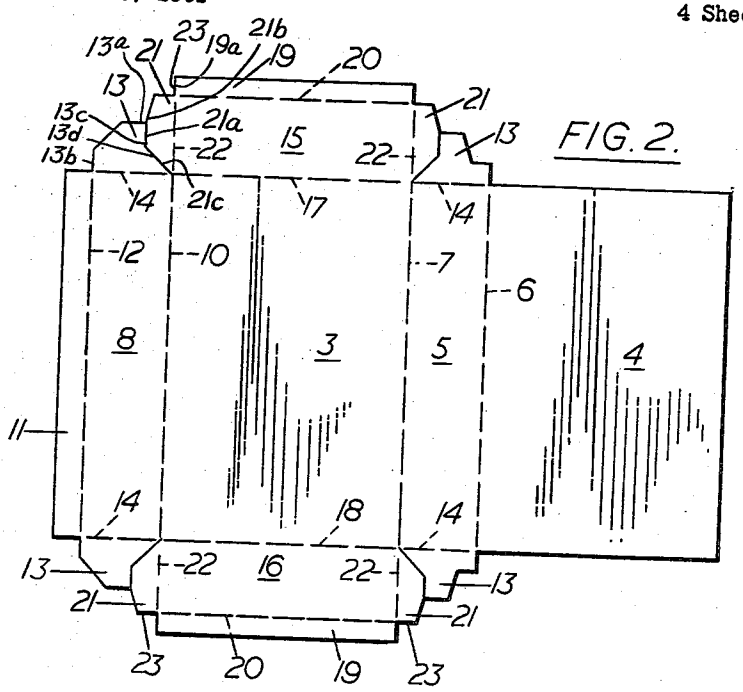


FIG. 2.

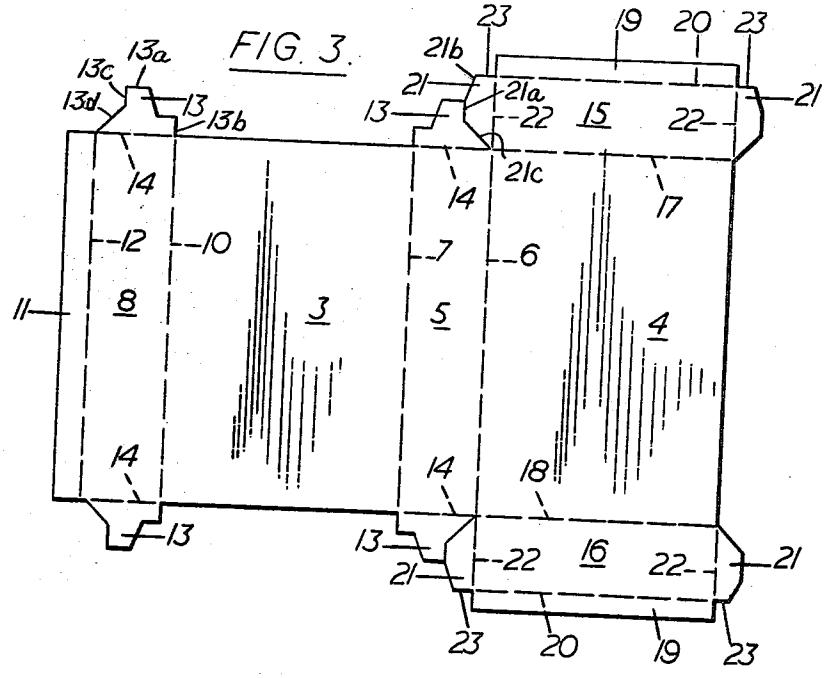


FIG. 3.

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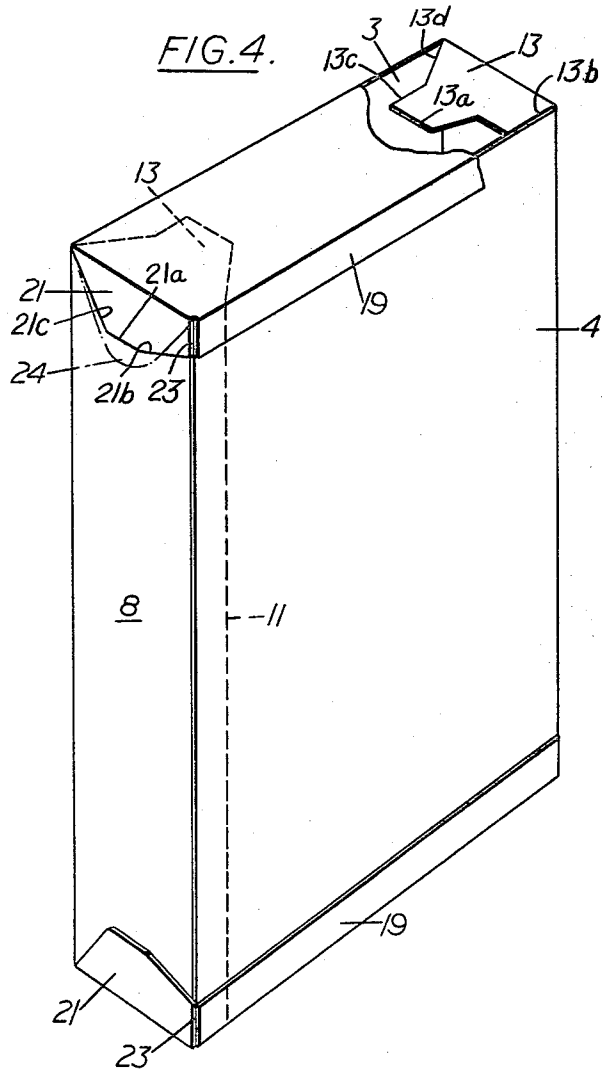
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FIG. 4.



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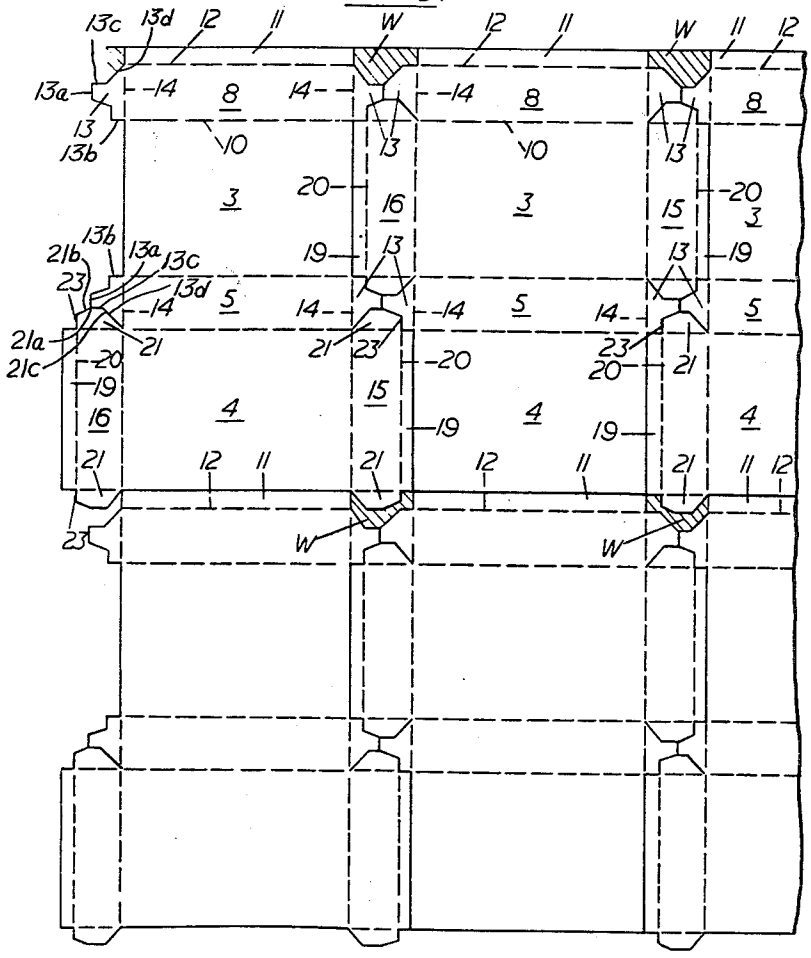
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FIG. 5.



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3,110,433

INTERFITTING CARTON BLANKS

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2 Claims. (Cl. 229—37)

This invention relates to cartons made of cardboard or similar material and in particular to cartons of rectangular cross-section such as, for example, are used for containing powdered detergents.

As is well understood cartons of the kind above mentioned are produced in large numbers and it is a main object of the present invention to provide a carton blank and a carton which by effecting a saving in the quantity of cardboard used in the construction thereof is cheaper to produce than are the similar cartons at present in use.

According to the invention there is provided a carton of oblong rectangular cross-section made of cardboard or similar material, comprising first and second oblong rectangular main panels and first and second oblong rectangular side panels connecting said main panels, a closure tab infolded from each shorter side of each side panel, an end panel folded from each of the shorter sides of each of one of the main panels and overlying a pair of infolded closure tabs, ears folded from the opposite shorter sides of each end panel and secured to the side panels, and an oblong rectangular closure flap folded from the longer side of each end panel opposite the side of the end panel about which the end panel is folded from said main panel, said closure flaps being secured to the outer face of the main panel opposite that from which the end panels are folded.

In order that the invention may be clearly understood two embodiments thereof will now be described, by way of example, with reference to the accompanying drawings in which:

FIG. 1 illustrates the manner in which carton blanks for cartons of the known kind are cut from a web or sheet of carboard,

FIG. 2 illustrates one form of blank for a carton according to the invention,

FIG. 3 illustrates a second form of blank for a carton according to the invention,

FIG. 4 illustrates a carton, with a part thereof broken away, made from a blank according to FIG. 2 or FIG. 3, and

FIG. 5 illustrates the manner in which the blanks of FIGS. 2 and 3 are cut from a web of cardboard.

In the drawings like references refer to like or similar parts.

FIG. 1 illustrates blanks of known kind and the manner in which the blanks are cut from a web or sheet of cardboard and the hatched portions W illustrate waste material. For reasons understood in the art it is necessary when cutting this kind of blank to leave a substantial portion of waste material between two lines of blanks as is illustrated in the drawing and it is one object of the present invention to eliminate this wastage. Further, cartons formed from the known blanks are provided at each end thereof with two overlying end panels 1, 2 each of which is co-extensive with the end of the carton and it is a further object of the invention to effect a saving of material by the elimination of one of such end panels from each end of the carton.

Referring to FIG. 2, there is illustrated therein a blank made from cardboard or similar material and which comprises first and second oblong rectangular main panels 3, 4 and a first oblong rectangular side panel 5, which has

the longer sides thereof hingedly connected to longer sides of the main panels 3, 4 as by score or crease lines 6, 7. A second oblong rectangular side panel 8 has one longer side thereof hingedly connected to the other longer side of the first main panel 3 as by a score or crease line 10. A seam-forming flap 11 is hingedly connected to the other of the longer sides of the second side panel 8 as by a score or crease line 12.

A closure tab 13 is hingedly connected to each shorter side of each of the side panels 5, 8 as by score or crease lines 14, and a pair of oblong rectangular end panels 15, 16 are hingedly connected one to each of the shorter sides of the first main panel 3 as by score or crease lines 17, 18.

Oblong rectangular closure flaps 19 are hingedly connected, as by score or crease lines 20, one to each end panel 15, 16 and ears 21, of the kind known in the art as "Van Buren ears," are hingedly connected, as by score or crease lines 22, one to each shorter side of each end panel 15, 16. As shown in FIG. 2 each ear 21 is in part complementary to one of the closure tabs 13. The hinge connection 22 of each ear 21 is co-extensive with the length of the shorter side of the end panel to which it is connected. Each ear 21 is defined by three edges one of which has a portion 21*a* parallel with the hinge connection 22 therefor and a portion 21*b* which slopes from the portion 21*a* towards the hinge connection 22 and joins a second edge 23 which is formed in extension of the hinge connection 20 between the closure flap 19 and the end panel to which the closure flap 19 is hingedly connected, and the third edge 21*c* converges to the parallel portion 21*a* from the hinge connection 17 or 18 by which the end panel 15 or 16 is connected to a main panel 3 or 4.

Each closure tab 13 has three edges of which a first edge 13*a* is parallel to the hinge connection 14 by which the tab is connected to an end panel 15 or 16, a second edge which includes a portion 13*b* formed in extension of the hinge connection 6 or 12 for a side panel 5 or 8, the portion 13*b* having a length equal to that of a shorter side 19*a* of a closure flap 19, and a portion 13*c*, 13*d* which conforms with the second edge 23 and the sloping portion 21*b* of the first edge of an ear 21 and the parallel portion 21*a* of the first edge of the ear.

As shown in FIG. 3, the end panels 15, 16 are hingedly connected to the shorter sides of the second main panel 4. In this form of the blank only one of the end closure tabs 21 on each end panel 15, 16 is in part complementary to a closure tab 13 but as can be seen from FIG. 5 the others of the end closure tabs are in part complementary to closure tabs of other blanks.

The pair of blanks shown in FIGS. 2 and 3 are so constructed that the edges thereof which include the free longer edges of the closure flaps 19 are complementary one to the other, this being clearly illustrated in FIG. 5 which illustrates the manner in which the blanks of FIGS. 2 and 3 are cut from a web or sheet.

The blanks of FIGS. 2 and 3 are each foldable to form a carton as illustrated in FIG. 4, the blanks being first folded to form a tube with the seam-forming flap 11 adhesively secured to the inner face of the main panel 4. One end of the tube is then closed by infolding the closure tabs 13 and causing the appropriate end panel to overlie the tab and to be at least in part adhesively secured thereto. Thereafter the closure flap 19 is adhesively secured to the outer side of the main panel 3 or 4, as appropriate, and the ears 21 are adhesively secured to the outer sides of the end panels 5, 8. Following the insertion of the contents into the carton the other end thereof is similarly closed. As shown in FIG. 4, the non-convergent portions 23 of the ears 21 substantially abut the shorter edges of the closure flaps at a corner of

the carton and are adapted to reduce spillage from the carton.

If desired one of the end panels may be provided, in known manner, with perforations 24, FIG. 4, to facilitate the formation of a pouring opening for the carton.

The blanks shown in FIGS. 2 and 3 are cut simultaneously from a web of cardboard or similar material as illustrated in FIG. 5, from which figure it will be seen that the blanks are formed with a minimum of waste W. It will, from FIGS. 2 and 3, also be understood that there is only one end panel at each end of the carton thus, as compared with the known form of carton blank as illustrated in FIG. 1, effecting for each carton a saving of two end panels.

We claim:

1. A carton blank made from cardboard or similar material and shaped to have edge portions thereof which are complementary to edge portions of other blanks of like shape thereby to permit cutting of the blanks from a sheet or web with a minimum of wastage, said blank comprising a first oblong rectangular side panel disposed between first and second oblong rectangular main panels and connected to the longer sides thereof by hinge connections, a second oblong rectangular side panel located between the first main panel and an oblong rectangular seam-forming flap and connected to longer sides of said panel and flap by hinge connections, a closure tab hingedly connected to each of the shorter sides of the first and second side panels, a pair of oblong rectangular end panels connected by hinge connections one to each shorter side of one of said main panels, ears connected by hinge

connections one to each shorter side of each end panel, and oblong rectangular closure flaps connected by hinge connections one to each of the end panels along a longer side thereof, each of said ears being defined by three edges of which one edge has a portion which is parallel with the hinge connection for the ear and a portion which slopes from said parallel portion towards the hinge connection and joins a second edge formed in extension of the hinge connection for a closure flap, and the third edge converges to said parallel portion of the first edge from an extremity of the hinge connection for an end panel, and each closure tab having three edges of which a first edge is parallel with the hinge connection for the tab, a second edge includes a portion which is formed in extension of the hinge connection of a side panel and has a length equal to that of a shorter side of a closure flap, and the third edge is shaped to conform with said third edge of an ear and the parallel portion of the first edge of the ear.

2. A blank according to claim 1 wherein the end panels are hingedly connected one to each of the shorter sides of the first main panel.

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