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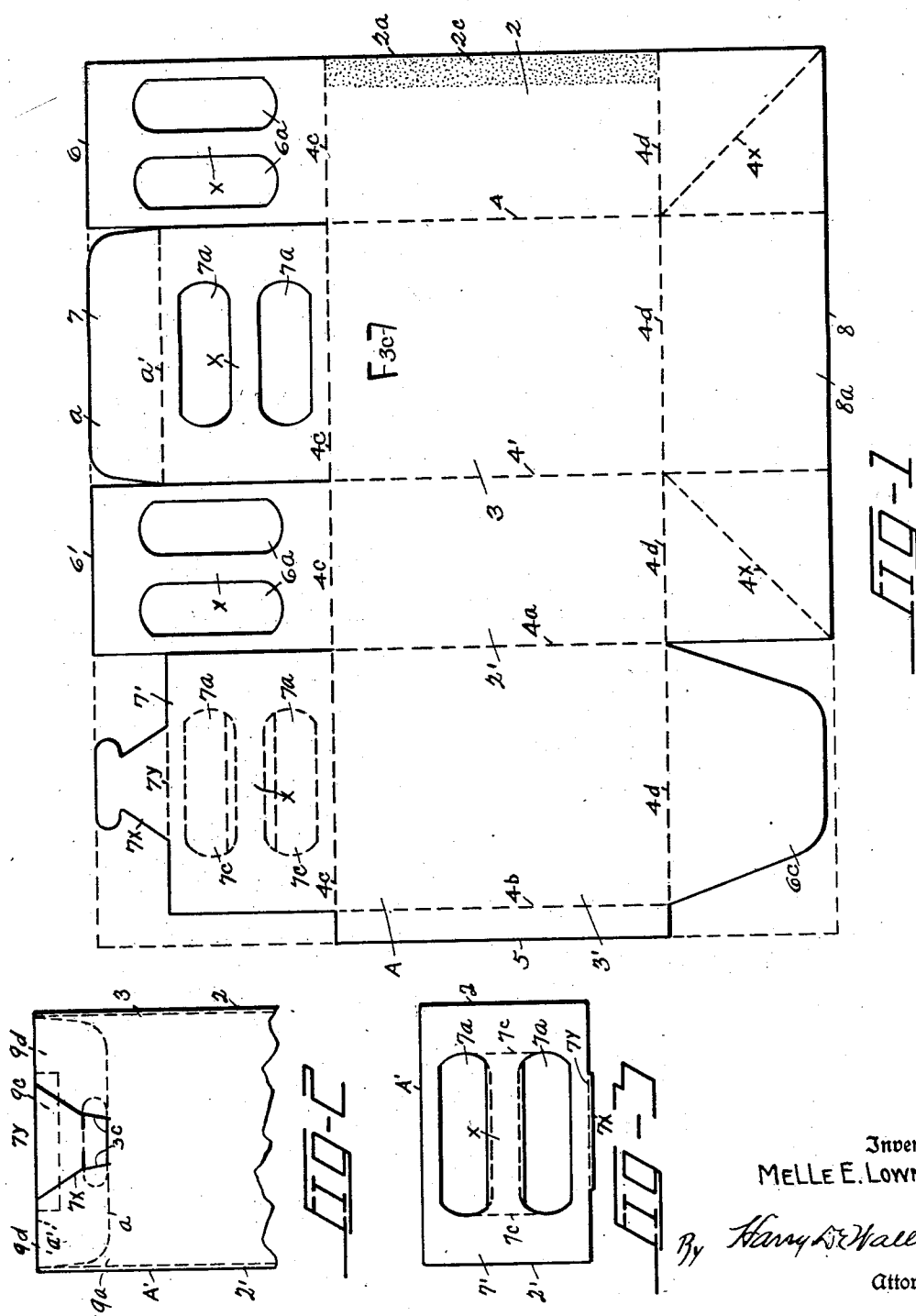
M. E. LOWMAN

1,965,503

CARTON

Filed June 17, 1933

2 Sheets-Sheet 1



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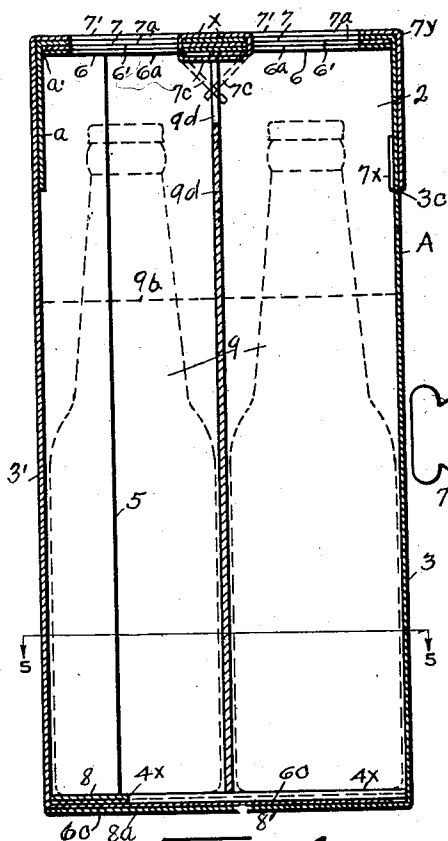
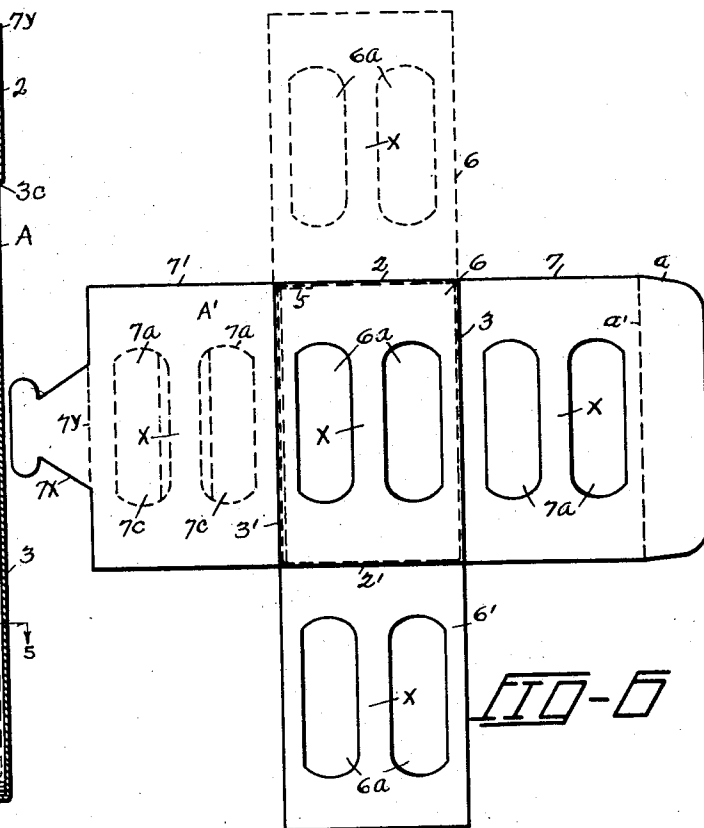
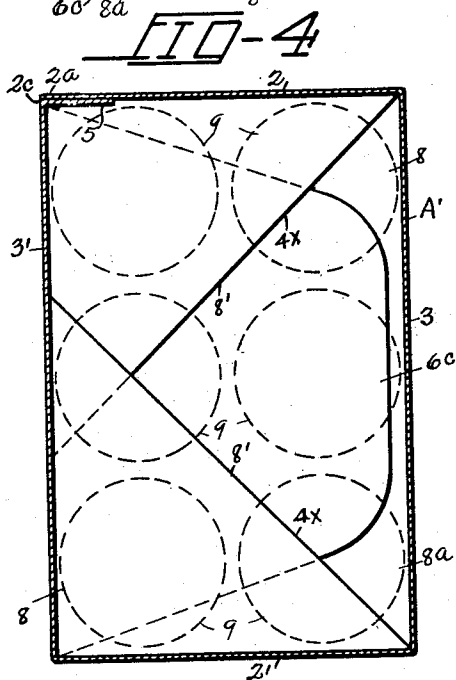
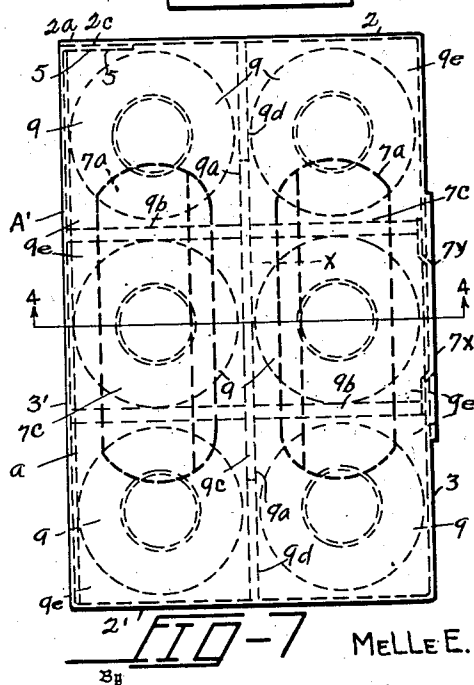
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UNITED STATES PATENT OFFICE

1,965,503

CARTON

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Application June 17, 1933, Serial No. 676,308

8 Claims. (Cl. 229—52)

My invention relates to improvements in folding cartons of the portable, knock-down type, which are strong and easily manipulated, and are designed especially for packaging and carrying bottled liquids and other goods.

The primary object of the invention is to produce without waste of material a suitable blank for such a carton, from a single sheet of fibrous or like foldable stock, by a single stroke of a suitable cutting and creasing die, after which the blank is usually folded and glued to form a four-sided carton. A further object is to provide a carton of simple configuration in a single part which is formed with novel means for firmly interlocking or fastening the integral portions together in their assembled condition, so as to safely accommodate relatively heavy loads as well as withstand considerable rough handling; the bottom of the carton being so arranged that when folded and subjected to the gravitative weight or force of the contents, the latter prevents the unfolding and collapse of the bottom and the accidental escape of the contents. And a further object is to provide the top or loading and dispensing ends of the cartons with a plurality of foldable similarly perforated flaps which are adapted to be sequentially folded inwardly upon each other in intimate parallel relation, to bring the perforations as well as the fibrous portions which separate the perforations into registry, in order to produce novel and powerful laminated handgrips adapted to withstand the strains incident to the handling of the loaded cartons, one of each set of top end flaps being formed with anchoring means that effectually locks and holds all of said flaps in place.

I attain these objects by the means set forth in the detailed description which follows, and as illustrated by the accompanying drawings, in which—

Figure 1 is a plan view of the die-cut blank from which the carton may be formed. Fig. 2 is a broken front side elevation taken in the direction of the arrow in Fig. 7, showing one means for locking the topmost flap to the adjacent side of the body. Fig. 3 is a top plan view of Fig. 2, showing the clear parallel openings brought into coincidence by folding the end flaps to permit insertion of the hand for carrying the loaded carton. Fig. 4 is an enlarged central longitudinal section taken on line 4—4 of Fig. 7, showing the carton loaded with bottles, the folding and locking of the top end flaps, and the resultant laminated hand-grip; also showing the manner of folding, tucking and locking the bot-

tom flaps. Fig. 5 is an enlarged horizontal section, taken on line 5—5 of Fig. 4, showing in plan the folding and locking of the bottom portions of the carton. Fig. 6 is a top plan view showing the body of the carton folded; also showing the several slotted flaps extended ready to be folded and over-lapped. And Fig. 7 is an enlarged top plan of the complete carton, showing the wings of the topmost flap in the perforated state ready to be folded inwardly to complete the assembly of the hand-grip, as shown in Figs. 3 and 4.

In the drawings, A represents the one-part die-cut blank of Fig. 1, whose medial portion comprises an alternate arrangement of the opposite ends 2—2' and the opposite sides 3—3' that constitute the main body A' of the carton, said ends and sides being rendered foldable by means of similar parallel longitudinal creases or scorings indicated by dotted lines 4—4' and 4a. The free edge of the side 3' is preferably formed with a narrow longitudinal flap 5, which is foldable on dotted line 4b, and preferably underlaps the free edge 2a of the end 2, to which it may be permanently secured by an adhesive substance, indicated by the stippling 2c in Fig. 1. When the body A' is folded, as shown in Figs. 2, 3, 4, 6 and 7, the ends 2—2' are shown integrally joined at their top margins to similar flaps, as 6—6', which are foldable inwardly upon each other in opposite directions, by common transverse creases 4c. The sides 3—3' are likewise integrally joined at their top margins to similar flaps, as 7—7', which are also foldable inwardly upon the flaps 6—6' by the crease 4c. The several flaps 6—6' and 7—7' are formed with similar die-cut openings, as 6a and 7a, in order to provide a laminated hand-grip, by which the loaded carton may be carried. These hand-grip openings are preferably oval to facilitate insertion of the hand as well as for reinforcing the grip portions, and are arranged parallel. When the top end flaps are folded upon each other, as shown in Figs. 3, 4 and 7, the corresponding openings coincide, as may be understood by consulting Figs. 3 and 4. By this means the narrow web portions x that separate the openings become intimately overlapped, as shown in Fig. 4, and effect a grip of such strength as to readily withstand the strains incident to the lifting and carrying of the loaded carton. The openings 7a of the topmost flap 7', instead of being clear-cut as in the flaps 6—6' and 7, are primarily perforated and weakened, as at 7b, so as to enable the user of the carton to punch the integral wings 7c inwardly by the pressure of his hand, and he may afterwards fold

and lap the wings 7c beneath the laminated webs x, as shown in Fig. 4, thereby forming a four-ply hand-grip of great strength. To this end, the web portion x adjacent the facing edges of the wings 7c is double-creased, as at 7d, to give a hinge effect that facilitates the underfolding of said wings, and also at 7e to effect a rolling, as 7f, close to the bases of the wings (see Fig. 4) to prevent fracture of the fiber and the accidental detachment of the wings during the folding thereof, as well as during the carrying of the loaded carton. The ends 2—2' and the side 3 are integrally joined at their bottom margins to a relatively broad flap, as 8, which is foldable inwardly, as shown in Fig. 5, by means of a transverse crease 4d, while the bottom margin of the side 3' is integrally joined to a tuck flap 6c, which is also foldable inwardly by the common crease 4d. The broad flap 8 is primarily foldable with the end 2 and the side 3 by extensions of the creases 4 and 4'. The large flap 8 is also provided with oblique creases 4x that facilitate forming the angular folds or patterns indicated at 8' in Figs. 4 and 5. These angular folds form with the plane extension 8a of side 3' a narrow pocket, as may be understood by consulting Fig. 5, to receive the bottom tuck flap 6c. This effectually locks the bottom portions, and when the contents or load of the carton rests upon these oblique folds of the bottom, it is impossible for the bottom to become unfolded and forced outwardly so as to effect escape of the contents. The load must be removed in order to collapse the folded flap 8.

After the blanks A are operated upon by the dies, folded and glued, they may be delivered to the dispensers of the goods knocked down flat. The dispenser then assembles the blanks to the extent shown in Fig. 6, and the bottom flaps 6c and 8 are folded with the body and interlocked by the insertion of the tuck flap 6c beneath the folds 8', as shown in Figs. 4 and 5. This leaves the four flaps 6—6' and 7—7' extended, as shown in Fig. 6. The dispenser may then load the body A' with bottles, as 9, or with any other kind of goods, as shown in Figs. 4, 5 and 7, after which he may proceed to fold the flaps 6—6' and the flaps 7—7' inwardly upon each other, in the order named. This latter operation effects the closing of the top end of the carton, as shown in Figs. 3, 4 and 7. It only remains then for the dispenser to suitably lock the topmost blank 7', which may be effected by means of a locking tab or flap 7x that is integral with the free end of the flap 7' and may be bent downwardly along a crease 7y and against the outer face of the side 3, where its arrow-pointed head may be inserted through slits 3c, as shown in Figs. 2 and 4. The carton may be made more rigid and strong, for certain special uses, by pasting the top and bottom flaps to each other, like the joint 2c—5, instead of providing the mechanical locking or securing means shown in the drawings. The flap 7 may be formed with a tuck portion a (see Figs. 1 and 6) which is foldable along a crease a' to supplement the bracing and locking effected by the flap 7', as described.

When the cartons are loaded with bottles or other fragile goods, sheet packing preferably comprising suitable fibrous material, as 9a—9b, may be inserted between the bottles, as shown in Figs. 4 and 7. The packing 9a has the medial portion of its top end cut away, as at 9c, to enable one's hand to be freely inserted through the slots 7a in order to grasp the hand-grip.

This cut-out provides lugs, as 9d, that extend to the plane of the top end of the body A' and support the flaps 6—6' and 7—7' in level condition, as shown in Fig. 4. By referring to Fig. 7, it will be seen that the six bottles 9 are disposed in independent pockets, as 9e.

Having thus described my invention, what I claim, is—

1. A carton body comprising a four-sided tube formed of foldable material having at its top end integral flaps coinciding respectively with the four sides of the tube, each flap having spaced slots arranged in pairs separated by a narrow web, the slots and the webs of adjacent flaps alternately extending transversely and longitudinally thereof said flaps adapted to be folded inwardly across the open top end of the tube and overlapped to dispose said webs in coincidence and in superimposed relation to provide a laminated hand-grip, and means for locking the topmost flap to one side of the tube.

2. A carton comprising a die-cut and creased blank adapted to be primarily folded into a square tube, the top ends of the four sides of the tube being formed with flaps adapted to be folded inwardly upon each other to form a laminated closure for the top end of the tube, each flap being formed with a pair of parallel slots the slots of adjacent flaps alternately extending transversely and longitudinally thereof, adapted to coincide when the flaps are folded and the web portions separating said slots also coinciding and being superimposed upon each other to form a hand-grip for carrying the carton, and means to lock the topmost flap to bind and hold all of said webs in close contact.

3. A carton body formed into a square tube from a single die-cut blank, a slotted flap joined integrally at one end of the tube to each of its four sides adapted to be folded inwardly and overlapped to bring the slots of all of the flaps into coincidence, the webs of the flaps lying between the slots being laminated and superimposed upon each other, and portions partially severed in effecting the slots of the topmost flap adapted to be folded in opposite directions over the sides of and beneath said lamina to provide a hand-grip for carrying the carton.

4. A carton body formed into a four-sided tube from a single die-cut-and-creased blank, a slotted flap joined integrally at one end of the tube to each of the four sides adapted to be folded inwardly and overlapped to bring the slots of all of the flaps into coincidence, the webs of the flaps lying between the slots being laminated and superimposed upon one another to form a four-ply handle disposed in the plane of the top of the body, and portions partially severed in effecting the slots of the topmost flap adapted to be folded inwardly in opposite directions beneath said lamina to provide a hand-grip for carrying the carton.

5. A carton comprising a die-cut-and-creased blank adapted to be primarily folded into a square tube, the top ends of the four sides of the tube being formed with flaps adapted to be folded inwardly upon each other to close the top end of the tube, each flap having a pair of parallel slots adapted to coincide when all of the flaps are folded, the web portions separating said slots being superimposed upon each other to form a hand-grip for carrying the carton, means to lock the topmost flap to bind and hold all of said webs in close contact, and integral flexible wings comprising material partially severed by the cutting

of the slots of the topmost flap adapted to underlap the said coinciding webs to complete the assembling of said hand-grip.

5 6. A carton composed of a body having sides
and flaps at the upper ends of the sides, each of
the flaps having a pair of spaced slots which are
in register with one another, the slots of adjacent
flaps alternately extending transversely and longi-
10 tudinally thereof the flaps being superimposed
upon each other whereby the webs resultant from
and occurring between the slots form a multi-ply
handle which lies substantially in the plane of the
top of the body.

15 7. A carton composed of a body having sides and
flaps at the upper ends of the sides, each of the
flaps having a pair of spaced slots which are in
register with one another, the slots of adjacent
flaps alternately extending transversely and longi-
20 tudinally thereof the flaps being superimposed
upon each other whereby the webs resultant from

and occurring between the slots form a multi-ply
handle which lies substantially in the plane of
the top of the body, the uppermost flap having
an extension which is engaged with one of the
sides of the body and secured thereto to hold all of
the flaps in their said superimposed relation. 80

8. A carton composed of a body having sides
and flaps at the upper ends of the sides, each of
the flaps having a pair of spaced slots which are
in register with one another, the flaps being
superimposed upon each other whereby the webs
85 resultant from and occurring between the slots
form a multi-ply handle which lies substantially
in the plane of the top of the body, one of the
flaps having extensions which are engaged about
the side edges of the webs of the remaining flaps
90 and with each other to form smooth sides for the
handle.

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