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CARTON OR BOX

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Fig. 1.

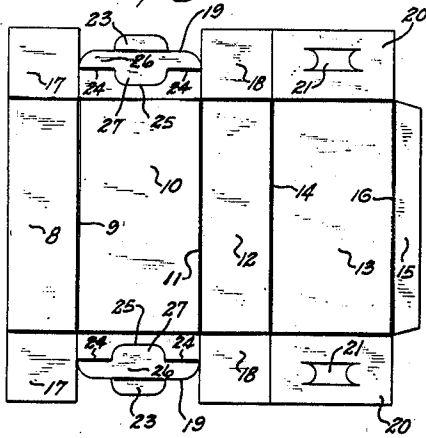


Fig. 5.

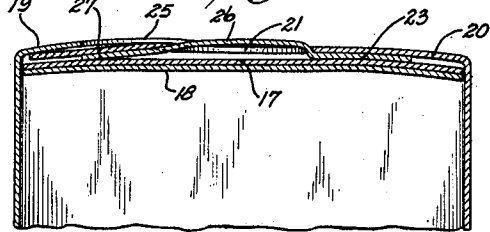


Fig. 4.

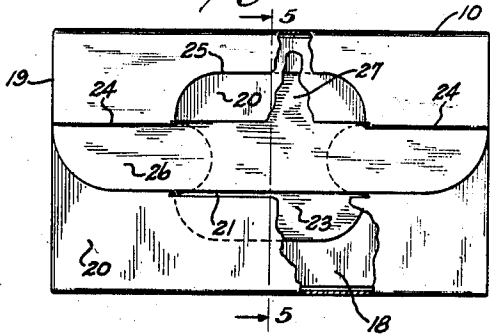


Fig. 3.

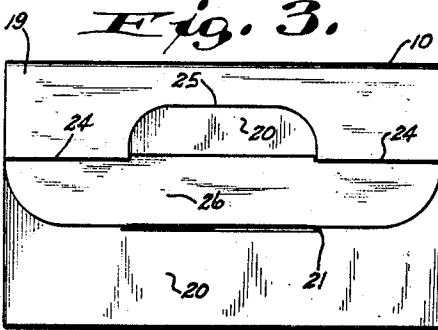
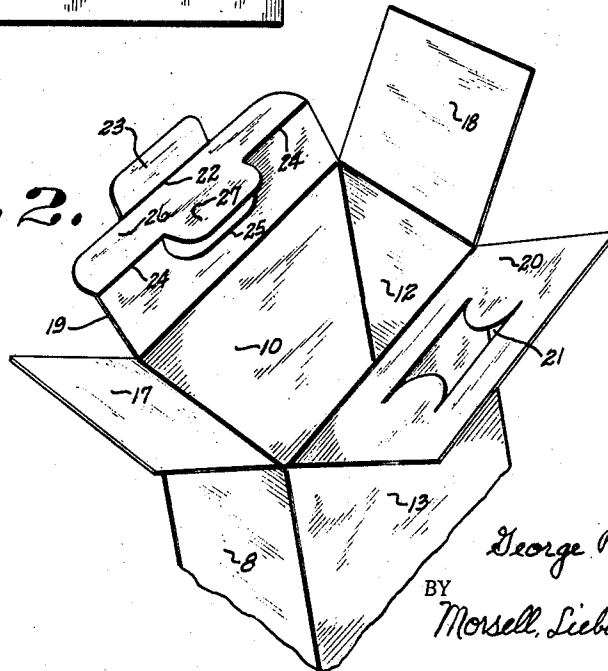


Fig. 2.



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UNITED STATES PATENT OFFICE

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CARTON OR BOX

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3 Claims. (Cl. 229—39)

This invention relates to improvements in cartons or boxes, and more particularly to closure flap securing or locking means on boxes formed of paperboard, cardboard or like materials.

There are on the market a great number of various types of folding paperboard boxes wherein the end or side closure flaps are releasably secured in closing position by various forms of locks and tongues, or by frictional engagement of inturned flap portions with adjacent wall surfaces. All of these prior constructions have certain objectionable features. In some instances the effectiveness of the closure depends upon accuracy in the cutting or formation of the flaps or box walls. Others are somewhat difficult to lock, and locking of the closure flaps may cause mutilation of some of the parts, rendering the box unfit for repeated opening and closing operations. Still other constructions require too much stock, or waste of stock, and do not provide for substantially sealed closures.

It is, therefore, the primary object of the present invention to provide a carton or box having attached closure flaps formed with interlocking means which eliminate all of the aforementioned objections, the same being easy to manipulate, being susceptible of unlimited locking and unlocking manipulations without mutilation of any of the parts, requiring a minimum of stock with no undue accuracy in the die-cutting operations, and providing for secure closing of the flaps to withstand a great amount of internal pressure.

Some of the more specific objects of the present invention may be defined as follows:

To provide a carton with lockable closure flaps which will present smooth box ends;

To provide a carton with closure flaps which is well adapted to be automatically closed on machinery for that purpose;

To provide a carton with interlocking closure flap members which have dual spaced apart engaging portions whereby the securement is very effectively held against undesired release.

These and other objects and advantages will be apparent from the following detailed description.

A clear conception of an embodiment of the present invention, and of the mode of constructing and of utilizing cartons built in accordance therewith, may be had by referring to the drawing accompanying and forming a part of this specification in which like reference characters designate the same or similar parts in the various views.

Fig. 1 is a plan view of the carton blank prior to being folded and secured in shape;

Fig. 2 is an enlarged fragmentary perspective view of an end portion of a carton with the closure flaps in open position;

Fig. 3 is an enlarged end view of the carton showing the closure flaps in locked relationship;

Fig. 4 is a similar view with portions broken away and in section to show details of construction; and

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 4, and on a larger scale.

While the present invention has been illustrated and described herein as being specifically applied to a folding box or carton with end closing flaps and of a particular shape, it is not intended to limit the scope by such specific disclosure since some of the novel features may obviously be applicable to boxes or cartons generally.

Referring to Fig. 1 of the drawing, it will be noted that the box is folded from a one-piece blank cut to shape and formed of paperboard, cardboard, fiberboard, or any similar suitable material. A side wall 8 is connected to a top wall 10 by a fold line 9 and a similar fold line 11 joins the other edge of said top wall to a side wall 12. A bottom wall 13 is foldable with respect to the other edge of the wall 12 along a fold line 14. A connecting flap 15 is carried by the other side edge of the wall 13 and is foldable on a fold line 16. At the ends of the walls 8 and 12 are foldably attached inner end flaps 17 and 18 respectively. Foldably attached to the ends of the top wall 10 are outer end closure flaps designated generally by the numerals 19. Said flaps 19 are of peculiar formation and are defined by lines of cut and scored fold lines, as will hereinafter appear. Complementary end closure flaps 20 are foldably attached to the ends of the wall 13. Each of the flaps 20 has cut in a medial portion thereof a spool-shaped opening 21.

With particular reference to the outer end closure flaps 19, attention is directed to Fig. 2, wherein one of the same is clearly illustrated. Attached to the free edge of said flap, intermediate its ends and defined by a fold line 22, is a tongue 23. Positioned substantially medially within the flap 19 there is a U-shaped cut 25. Extending from the ends of the cut to opposite side edges of the flap 19 are fold lines 24 whereby there is separated from the inner portion of the flap, an elongated narrow area 26 having a tongue 27 movable into and out of the opening defined by the cut 25.

The blank is folded into box-like form by bending each of the members 8, 10, 12, 13 and 15 at right angles to the member there adjacent. The flap 15 is underlapped with respect to the free edge of the side wall 8 and is adhered thereto. By this means a hollow box of rectangular form in cross-section is provided, open at both ends. When the box is packed both ends thereof are closed, and as the construction and closing operation is the same for both of said ends, only one will be described.

The inner end flaps 17 and 18 are first folded inwardly in partially overlapping relationship and at right angles to the walls 8 and 12. Then, the flap 20 is folded over the flaps 17 and 18, and the flap 19 is next folded onto the flap 20. To lock the end flaps in this relationship, the portion 26 carrying the tongue 27 is first bent outwardly and the tongue 27 is slipped into one side of the spool-shaped opening 21 and engages under a portion of the flap 20. Next the tongue 23 is slipped into the other side of the spool-shaped opening 21 and engages under a portion of the flap 20 opposite that portion engaged by the tongue 27.

With the box closure flaps closed and locked as described very smooth outer surfaces result. There is a very secure double locking engagement between both of the tongues 23 and 27 and separated portions of the inner flap 20 whereby the closure may be subjected to severe internal pressure without becoming released. The locking flaps may be easily and quickly manipulated and the portions thereof will not become mutilated or torn even after repeated use and opening and closing operations.

From the foregoing description it will be seen that the improved carton or box, and the closure means therefor, is simple and novel, and is well adapted for the purposes described.

What is claimed as the invention is:

1. In a container, walls cooperable to provide an enclosure, closure flaps carried by some of said

walls and cooperable to releasably close one side of the container, said flaps being overlapping and the inner flap having a medially positioned opening of eccentric shape and having a pair of spaced straight edges and a pair of inwardly curved edges joining the ends of the straight edges, one portion of the outer flap being bendable with respect to the adjacent portion and said bendable portion carrying a pair of oppositely directed flexible tongues, both of the tongues being insertable through said opening to engage the opposite straight edges, and extending against opposite under surface portions of the inner flap.

2. In a container, walls cooperable to provide an enclosure, closure flaps carried by some of said walls and cooperable to releasably close one side of the container, said flaps being overlapping and one of the same having an opening of eccentric shape arranged with a pair of spaced straight edges and a pair of inwardly curved edges joining the ends of the straight edges, the other flap having a bendable portion carrying a pair of oppositely directed tongues, both of the tongues being insertable through said opening to engage the opposite straight edges, and extending against surface portions of the flap having the opening therein.

3. In a container, a closure flap formed with an opening therein providing a pair of spaced edges, another closure flap foldable against the first-mentioned flap and of less width than the same, a tongue projecting from a free edge of said latter flap and insertable through the opening of the other flap to engage one of said edges, and a tongue foldable from an intermediate portion of said latter flap, the line of fold for said tongue being substantially inwardly of the free edge of said flap, said tongue being insertable in its normal direction of extent through said opening to engage the other of said spaced edges.

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