Dec. 25, 1951 E. G. SCHAEFER 2,579,518

CONTAINER

Filed Dec. 21, 1946 2 SHEETS—SHEET 1

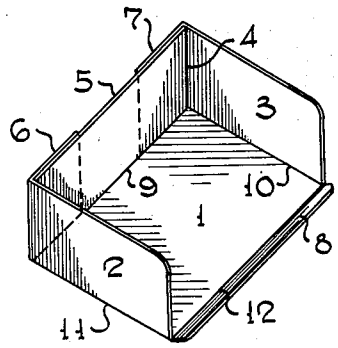


FIG.-1

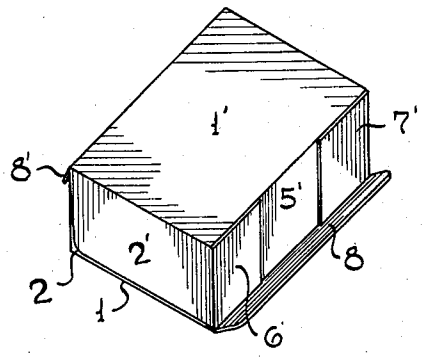


FIG.-2

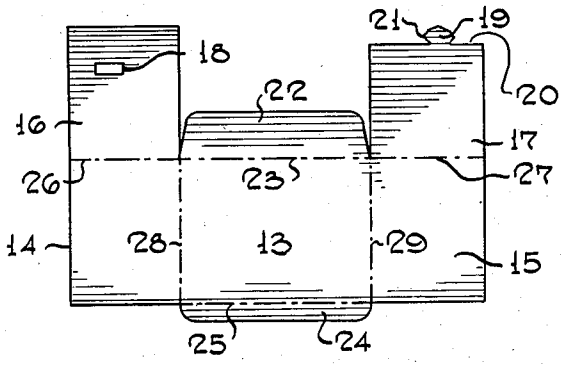


FIG.-3

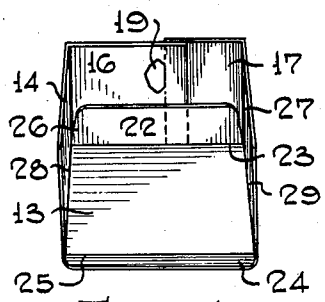


FIG.-4

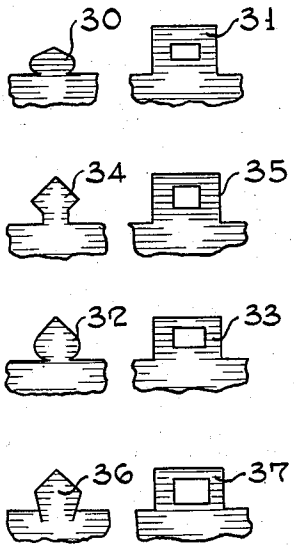


FIG.-5

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CONTAINER

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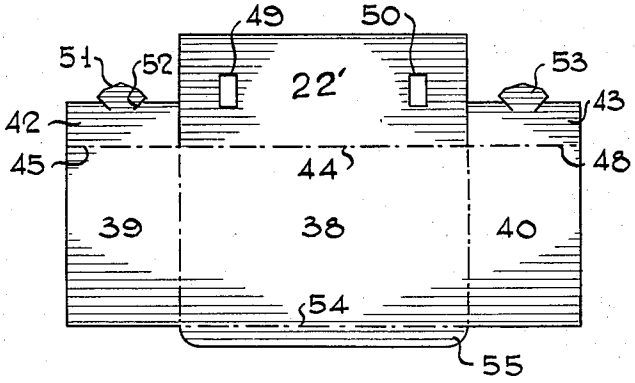


FIG.-6

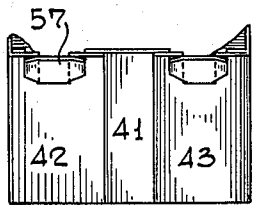


FIG.-10

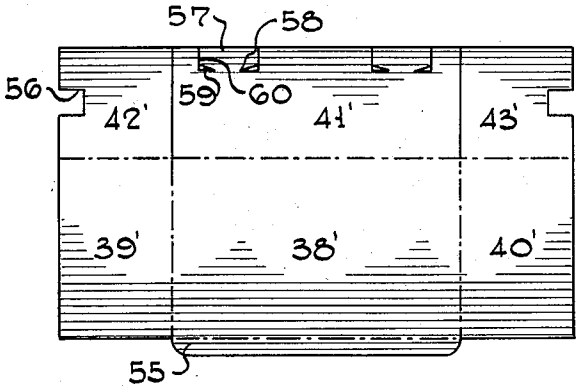


FIG.-9

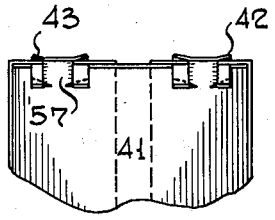


FIG.-11

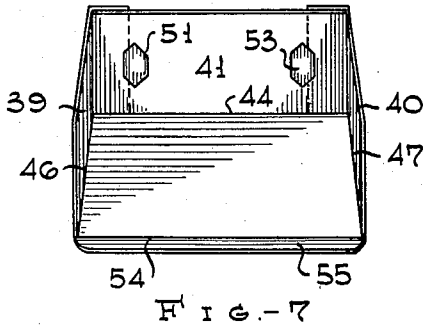


FIG.-7

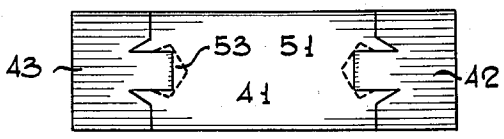


FIG.-8

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UNITED STATES PATENT OFFICE

2,579,518

CONTAINER

Edward G. Schaefer, Newark, N. J.

Application December 21, 1946, Serial No. 717,640

5 Claims. (Cl. 229—32)

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This invention deals with containers made of flexible material such as paper, cardboard, flexible plastic, and the like. More specifically, it relates to the production of two-piece containers having many advantages over present conventional cartons.

The packages and containers now in use generally consist of one-piece or two-piece units which are shipped in knocked-down condition and are provided with hooked flaps interlocking with cuts made in the cardboard (which is the usual material of construction). The one-piece units, such as the cartons used for individual packing of pies and cakes, are provided with a folding lid which folds over the top of the box after it has been put together. Two piece boxes, such as those used for packaging men's suits and ladies' dresses, comprise a small, bottom half and a larger, upper half to fit over the former. These are also shipped in knocked-down condition and require assembling by interlocking the conventional flap and cut closure.

In order to expedite packaging of purchased products, most stores stack such cartons in semi-assembled condition on shelves, and the assembly is completed when the purchased article is placed therein prior to leaving the store. In the case of the one-piece units, semi-assembled piles, with lids extended, take up considerable room, and require high shelf space. As can be readily seen, pre-assembly of the packages also takes time and the folding of the knocked-down cartons with the flap-cut closure requires careful observation to effect a good closure. Another disadvantage of present containers is that the four sides do not adequately exhibit all of the product or products contained therein. For example, a container of shirts will show only the uppermost shirt unless the individual lifts the pile of shirts contained therein for inspection. Also, when a cake is displayed in such a carton, only the top of the cake is exposed and the customer has no means for inspecting the side. Still another disadvantage of present containers is that large dies and paper stock are required and separate dies are needed for two piece cartons, since the tops are usually larger than the bottoms. In the case of conventional two-piece boxes having identical tops and bottoms, it is necessary to press in the corners or sides of the bottom section to make the top section fit thereover. Hence, considerable manipulation is required which increases in complexity as the sizes of the boxes increase.

There are many other disadvantages in the use of conventional containers. For instance, a

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customer must lift his purchased product out of the box or else break out the sides of the container. In the case of fragile products such as cakes, etc., there is a chance of breakage and smearing of the fingers with icing and the like.

An object of the present invention is to provide a simple one or two-piece container wherein the top and bottom may be identical, thereby requiring only one die and not involving the confusion ordinarily encountered with mixing or shortages of tops and/or bottoms. Another object is to provide a container having an open side, thereby allowing more adequate inspection of the product or products contained therein. A further object is to provide a closure for the sides which requires no attention or support while assembling and which may be opened or closed by a mere flicking of the thumb or finger. Still another object is to provide a container which takes up little shelf room and requires no pre-assembly or semi-assembly and which can be produced with small dies and small-sized paper stocks. An additional object is to provide a container which will not necessitate lifting out of products contained therein.

Other objects will become more apparent from the following description and the accompanying drawings in which Figure 1 is an isometric view of a glued container of the present invention suitable for window or show-case displays, while Figure 2 illustrates a covered container for shipping or carrying. A knocked-down container having a flap-hole closure of the present invention is shown in Figure 3, and an isometric view of the assembled and locked container of Figure 3 is shown in Figure 4. Various modifications of the closure of the present invention are shown in Figure 5. In Figure 6 is illustrated a knocked-down container having a double flap-hole lock or closure. When assembled, this container resembles front isometric view 7 and back view 8. Another modification of a container, in knocked down form, and having different locking means is shown in Figure 9. Figures 10 and 11 are the back and front views, respectively, of the assembled back of the container shown in Figure 9. Similar numbers refer to similar parts in the various figures.

Referring again to the drawings, numeral 1 represents the bottom of the cardboard carton or container, while numerals 2 and 3 represent the sides and numeral 5 designates what might be called the back side, or center side, or the back of the container. It will be observed, therefore, from Figure 1, that the container comprises

a bottom 1, three sides (2, 3 and 5) and a flap 8 extending for about ½ inch or 1 inch or so from the bottom at the open side. The juncture of the flap with the bottom is preferably scored, as shown by 12, to facilitate bending upwards of the flap.

In Figure 2 is shown a 2-piece container made up of two identical units such as that shown in Figure 1. Here, a unit such as that shown in Figure 1 is covered by a similar unit which is reversed, placed upside-down, and fitted over the unit of Figure 1, the flap 8' of the upper half projecting over back 5 of the lower half, and similarly, back 5' of the upper half fitting into the scoring for flap 8 of the lower half. Sides 2' and 3' of the upper half are fitted alongside sides 2 and 3 of the lower half, the fitting being haphazard, it being immaterial as to which side is on the outside or inside, since a good closure on the sides is effected by the double wall. Since the back of one unit covers the open side of the other, the flap of each unit serves to cover the open edge which would be otherwise exposed.

It will also be observed that sides 2 and 3 are provided with projections 6 and 7 which are glued to the back of back 5. They may be glued to the front of the back, but this is not as practical and would also cause them to interfere with stacking. Also, it is possible to provide the back with side extensions which would glue on sides 2 and 3, but this has been found less desirable since the double wall so formed would interfere with fitting and slipping over of sides 2' and 3' of the top unit. When the package is prepared according to Figure 2, it may be carried that way by hand, or preferably, a string is wound around the flaps, thus providing a strong, leakproof package.

In Figures 3 and 4, the knocked-down container has base 13 scored along lines 23, 25, 28 and 29, providing front flap 24, back flap 22, and sides 14 and 15. These sides have projections 16 and 17 scored at 26 and 27 respectively. Projection 16 has a rectangular slot 18 punched out, while projection 17 has a portion cut out at 20, leaving projecting flap 19 having an angular periphery 21. These projecting ends 16 and 17 form the back when the container is assembled as in Figure 4. In such case, flap 22 is kept within the box to seal off the otherwise exposed edge, while flap 19 falls in juxtaposition with punched hole 18 and serves as a lock or closure for the back.

In the closure formed by hole 18 and flap 19, the size of flap 19 is adjusted so that the angular sections only, extend beyond the periphery of the rectangular hole 18. Locking is accomplished by poking 19 through hole 18 with the finger, whereupon the cardboard flap 19 becomes somewhat deformed during the operation but recovers its form substantially after the closure is made. The projecting angular edges of the periphery 21 of flap 19 serve to lock flap 19 in hole 18 and thus prevent the container from falling apart. The locking is generally accompanied by a snap when flap 19 is poked into hole 18 with the finger. When assembled as in Figure 4, the container may be used as such for display and other purposes, or another similar unit, reversed and upside-down, may be placed over it to form a closed container similar to the one shown in Figure 2.

The shapes of the closure elements may be varied, as shown by the designs in Figure 5 in which the male elements are designated by numerals 30, 32, 34 and 36, while the female elements are identified by numerals 31, 33, 35 and 37. It is generally preferred to maintain a square or oblong shape for the female element, while the male element may be an extending flap as 30, 32, and 34 or it may be partly undercut into the projecting side, as shown by 36. It is preferred that the flap have angular projections on its periphery, and the size of the flap is adjusted to be the same as that of the slot, except for the projecting angular edges which extend beyond the periphery of the slot and thus act as locking members.

Although one set of locking members is sufficient for small containers, larger containers are more readily handled with two sets as shown in Figures 6-11. In such case, it is preferred to extend flap 22' to the height of the box and to cut slots or holes 49 and 50 in the sides of back flap 22' to engage flaps 52 and 53 extending from projections 42 and 43 of sides 39 and 40 which are scored at 45 and 48. It will be observed that flaps 51 and 53 are undercut at 52.

In assembling the box shown in knocked-down condition in Figure 6, sides 39 and 40 are bent at the scored boundary with the base, and flap 22' is also bent at scoring 44, after which projections 42 and 43 are bent around back flap 22' until flaps 51 and 53 are in juxtaposition over slots 49 and 50. This is done with one side in each hand, so that a flick of the finger of each hand pokes the flap through the slot, thus accomplishing the locking operation in a simple manner, obtaining the assembled box shown in Figure 7, the back of which is shown in Figure 8. The assembly does not require the attention needed by the conventional flap-cut closure, since such a cut is difficult to find in a freshly knocked-down package. The locking device of the present invention, on the other hand, can be readily assembled while giving attention to the customer, or while it is under the counter where lighting is poor.

Although the hole-type slot is preferred, a slot cut out of the edges of the side extensions may be employed, as shown in Figures 9–11. Here, the edges of side extensions 42' and 43' have slots 56 which, when assembled, are disposed at the upper edge of the back. Back flap 41' is provided with rectangular or square shaped flaps 57, cut at sides 60 and having lower corner triangular cut-outs 59 for facilitating the movement of the flap, the cuts terminating at points 58 on the back. When slots 56 are placed in juxtaposition behind flaps 57, the flaps are poked out through slots 56, thus engaging sides 43 of the flaps which act as locking means. The assembled back then has a front-view similar to that shown in Figure 11 and a back view similar to that in Figure 10.

Although square and oblong boxes are the shape types usually made, this invention is not restricted to any particular shapes, since the features can be adapted to practically any shape. For example, an oblong hat box may be made wherein a little less than half of the side is left open, while the base is intact, extending so that a similar unit, reversed and upside-down, may be superimposed thereon in the manner outlined in Figure 2, giving a closed container. A flap may be provided as an extension from the base to fold over or snap onto the side of the unit over which it overlaps. It will be observed that, since each unit has over half of the side portion mounted thereon, the side ends will overlap when the superimposition occurs. Also, it is possible to

produce such hat boxes in knocked-down condition with a flap-slot fastening for the back as in Figures 3 or 6, provision being made to cut out the back sides to allow for the oblong shape of the base, the back projections being part of the sides which are attached to the base.

It must be borne in mind that the units of the flap-slot closure herein described are interchangeable. For example, in Figure 6, the back may be provided with two flaps, while the back extensions of the sides may be provided with slots, although such an arrangement is not as preferable as that shown.

It is apparent, therefore, that this invention provides a convenient, simple container which avoids most of the drawbacks of conventional containers and exhibits many new and novel features.

In addition to those already specified, another valuable attribute is that containers of the present invention allow cutting, as for example, slicing of a cake or pie without removal from the container and thus avoiding concomitant repeated handling. The fact that less die equipment and smaller paper stock are required effects substantial economies over conventional operations. Since there is no need to hold down the top while loading or tying the container, particularly in the case of bakery boxes, manual manipulation is considerably simplified by the present invention. Safety is also emphasized by the use of the new construction herein described.

In the case of the knocked-down containers of the present invention, the folding of the scored sides automatically aligns the locking device and thus provides a speed closure means involving a mere push of a finger to effect the locking operation.

I claim:

1. In a flexible sheet container available in knocked-down condition comprising a four-sided flat bottom with a peripheral edge, the improvement comprising two oppositely disposed sides extending from the peripheral edge of said bottom, a short flap extending from the front peripheral edge of the bottom, a flap extending from the back peripheral edge of the bottom, an extension projecting only from the backs of each of the sides, means on one of said extensions for providing a hole characterized by a large open center section, and a flap disposed on the other extension, said flap having some dimensions larger than the hole and in juxtaposition therewith when the container is assembled, requiring only

poking of said flap through the hole to form, with the rear flap, an interlocked back for the container.

2. A container according to claim 1 in which the hole has a four sided periphery and the flap has an angular periphery, the angular sections of which extend beyond the periphery of the slot.

3. In a flexible sheet container having a four-sided flat bottom with a peripheral edge and three side walls of substantially equal height extending at right angles from said edge, leaving an open edge portion, said side walls having a substantially even upper edge, the improvement comprising an extension of the bottom at the open edge, acting as a short flap extending over the whole length of the open peripheral edge portion and a scoring at the juncture of the bottom edge and said flap to act as an upwardly swinging hinging means for said flap.

4. A container according to claim 3 in which the flap extends for a distance of not over about one inch from the peripheral edge.

5. In a flexible sheet container having a four-sided flat bottom with a peripheral edge and three interconnected side walls extending at right angles from said edge, leaving an open peripheral edge portion on said bottom, said side walls having a substantially even upper edge, the improvement comprising such a unit having a short flap extending over the whole length of the open peripheral edge portion and hinged thereto, and another such unit superimposed upon the first unit upside-down and in reverse to act as a cover for the first unit and the middle side wall of the superimposed unit acting as a fourth side wall to form a totally enclosed container, said hinged short flaps of each unit being long enough only to act as an edge sealing means over the edge of each middle side wall, said flaps being positioned outside of the side walls when the container is assembled.

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