Aug. 9, 1960 C. V. GRISETTI ET AL 2,948,456

SNAP LOCK CLOSURE FOR A RECTANGULAR CONTAINER

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FIG.1

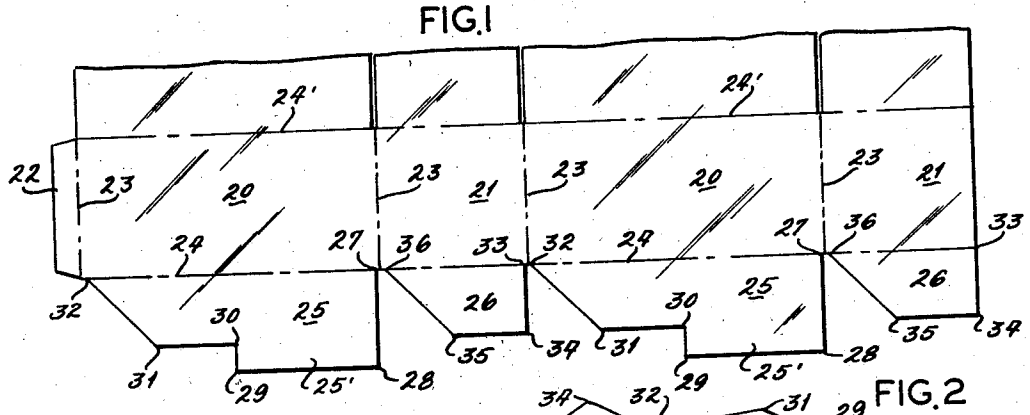


FIG.2

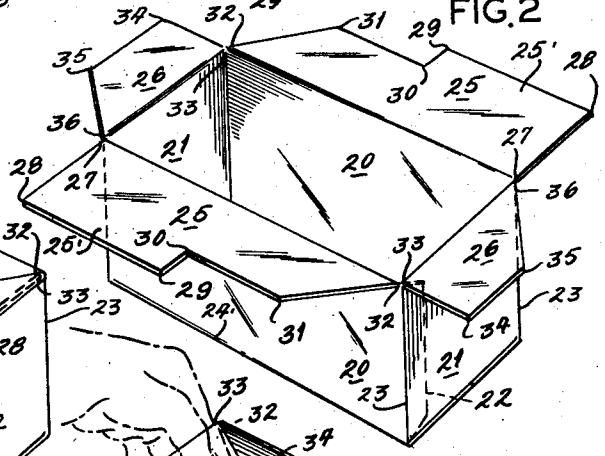


FIG.3

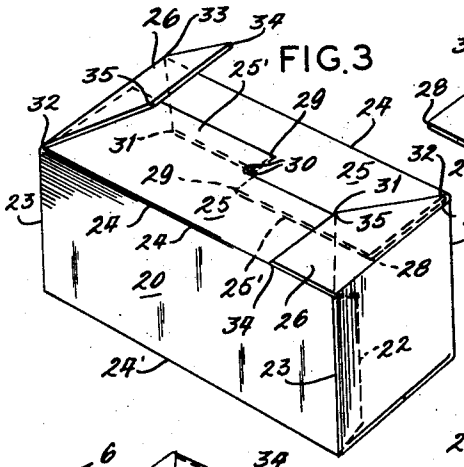


FIG.4

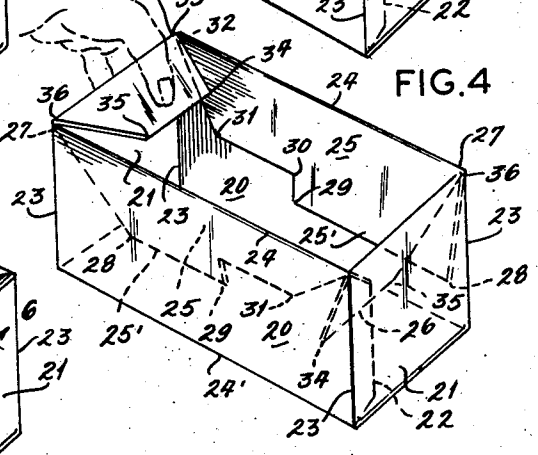


FIG.5

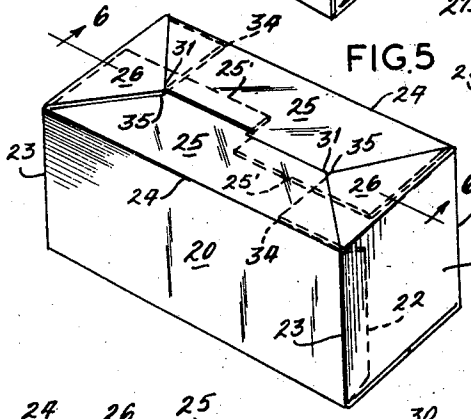
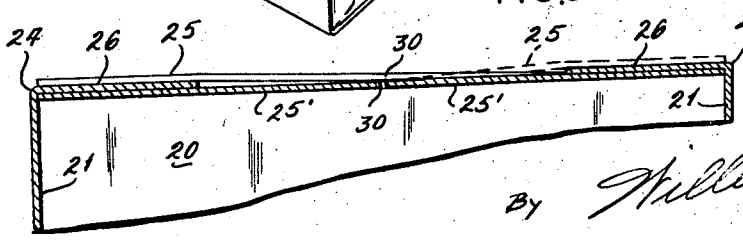


FIG.6



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SNAP LOCK CLOSURE FOR A RECTANGULAR CONTAINER

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2 Claims. (Cl. 229—39)

The invention relates broadly to an improvement in a snap lock closure for containers constructed of solid fibreboard, corrugated fibreboard or any other suitable material. More particularly the snap lock closure comprises a pair of novel opposed side wall, partially overlapping, bottom flaps in cooperation with a pair of novel opposed end wall flaps, whereby the snap lock closure of the container is formed by forcing either pair of opposed flaps inwardly over the other pair until portions of the inner pair of flaps extend past portions of the outer pair of flaps and upon release of the inward pressure snap into locking engagement at substantially a right angular relation to the walls of the container.

The principal object of the invention is to provide a snap lock closure that may be easily engaged and will be sufficiently secure to support the weight of relatively heavy articles, which are packed in the container.

Another object of the invention is to provide a container closure which can be easily closed and secured without the use of staples, adhesives, tape, or the like.

A further object of the invention is to provide a snap lock closure comprising novelly designed opposed pairs of closure flaps hinged to the side of the container that may be engaged by forcing the side flaps inwardly over the end flaps, or by forcing the end flaps inwardly over the side flaps; either method producing the same locking effect.

A still further object of the invention is to provide a collapsible container from a single blank which has a snap lock closure formed from opposed pairs of novelly designed flaps integral with the side and end panels of the container.

Another object of the invention is to provide a snap lock closure for a container comprising partially overlapping side panel flaps whereby the supporting strength of the closure may be varied by the amount of board that is used in the overlapping portions of said side panel flaps, that is, the greater the amount of board that overlaps the greater the retaining strength of the bottom.

Other objects and advantages of the invention will be apparent to those skilled in the art upon a full and complete understanding of the construction of the container. The accompanying drawings illustrate a preferred embodiment of the invention and form a part of the specification. Like numerals and symbols therein appearing refer to like parts wherever they occur.

Fig. 1 is a plan view of a preferred form of the blank from which the container is formed.

Fig. 2 is a perspective view of the container partially assembled.

Fig. 3 is a perspective view of the container, bottom upward, showing the bottom side flaps turned inwardly prior to locking.

Fig. 4 is a perspective view of the container showing the bottom end flaps in position prior to locking.

Fig. 5 is a perspective view of the container after the closure has been locked in place.

Fig. 6 is a sectional side view along line 6—6 of Fig. 5.

The blank for a preferred form of the container, illustrated in plan form in Fig. 1, comprises vertical side wall panels 20 and vertical end wall panels 21 and a glue or stitch flap 22 hingedly connected in side by side relation by vertical scores 23 and defined by horizontal scores 24 and 24'. Hinged to horizontal flap score 24 are side flaps 25 and end flaps 26. The side flaps 25 are substantially equal in over all length to the length of the container. The width of the side flaps from point 27 to 28 is equal to half the width of the container plus an additional amount which forms the overlapping section of the side flaps 25' of the snap lock closure. This additional amount may be varied from a relatively small section to overlapping sections equal to one half the width of the container. The external free horizontal edge of the side flap overlapping sections 25' extends from point 28 to point 29, the latter point being substantially at the mid-width of the side flaps 25. The edge line between points 29—30 runs perpendicularly to the edge line 28—29 to point 30, said point 30 being a distance of one half the width of the container from the score line 24. From point 30 the marginal edge of the side flaps 25 extend in a line parallel to score line 24 to point 31. Point 31 is substantially the same distance from an extension of vertical score line 23, as the length of end flaps 26. From point 31 the edge line of the side flaps 25 is cut diagonally at approximately a 45° angle, to point 32, contiguous to the corner of the side wall formed by the juncture of scores 23 and 24.

End flaps 26 are both substantially equal in over all width to the width of the container. Their length from point 33 to point 34 is of a distance substantially equal to one half the width of the container and from 34 to point 35 the distance is also substantially equal to one half the container's width. From point 35, the edge is cut diagonally at approximately a 45° angle to point 36, contiguous to the corner of the end wall formed by the juncture of the scores 23 and 24.

After the manufacturer's joint has been made by stitching or gluing the stitch or glue flap 22 to the remote end panel 21 as illustrated in Fig. 2, or by means of a taped manufacturer's joint (not illustrated), the snap lock may be closed by forcing side flaps 25 inwardly along score lines 24 so that they are in substantially a face to face relation with side panels 20, as illustrated in Fig. 3, and forcing the end flaps 26 inwardly over the side flaps 25 as illustrated in Fig. 4 until the straight edges 33—34 of the end flaps 26 have extended past the diagonal edges 31—32 of the side flaps 25. When the applied inward pressure is released from end panels 26, the four panels will snap into a locked position in substantially a right angular relation to the side walls as illustrated in Fig. 5 and Fig. 6, whereby the areas of the end flaps 26 bounded by edges 33—34—35 and diagonally back to 33, are overlapped by areas of the side flaps 25. The areas of the side flaps 25 designated by 25' are interlocked at point 30 so that they are covered by a portion of the side flaps 25 and a portion of the end flaps 26. The width of this area designated as 25' may be varied in accordance with the strength requirements for the container closure; that is, for maximum strength this overlapping area can be extended to a width substantially equal to one half the width of the container, or in a situation where relatively light weight articles are so packaged the width of this area may be as small as an inch or less.

It is to be understood that the embodiments herein described, are illustrative and not restrictive, and it is also to be understood that the invention may be sus-

ceptible in other modified forms, and that all such modifications which are similar to or equivalent to come equally within the scope of the claims next appearing.

We claim:

1. A blank of foldable material for forming a rectangular container with a snap lock closure comprising opposed pairs of side and end walls hingedly connected by vertical corner score lines; said blank including pairs of opposed side and end wall flaps substantially the width of the respective side and end walls joined to the lower edges of the walls by a horizontal hinge line, the two opposed end flaps each having corresponding side edges cut diagonally from substantially the mid-width of the outer edges thereof to the juncture of the flap hinge line and the vertical corner score line and two opposed side flaps having the sides which are adjacent to the vertical side edges of the end flaps cut diagonally inwardly from the juncture of the vertical corner score line and the hinge line to a point on the outer marginal edge thereof that is recessed toward the opposite side edges of the flaps to a distance substantially equal to the length of the end flaps and substantially one half the width of the container thence the marginal edge extending in a line substantially parallel to the horizontal hinge line to a point at the approximate mid-width of the said side flaps and from that point extending outwardly in a line substantially parallel to the vertical side edges of said side flaps for a distance of not more than one half the width of the container, thence extending in substantially a line parallel to the horizontal hinge line to the vertical marginal side edge of the said flaps and thence in a line substantially parallel to the vertical corner score lines extending toward and terminating at the horizontal hinge line.

2. The blank set forth and claimed in claim 1 wherein the diagonal side edges of the opposed side and end wall flaps are formed at substantially 45° angles to the horizontal hinge lines of the flaps, thereof.

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