June 4, 1963 W. R. SCHOLLE 3,092,298

CONTAINER

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Fig. 1

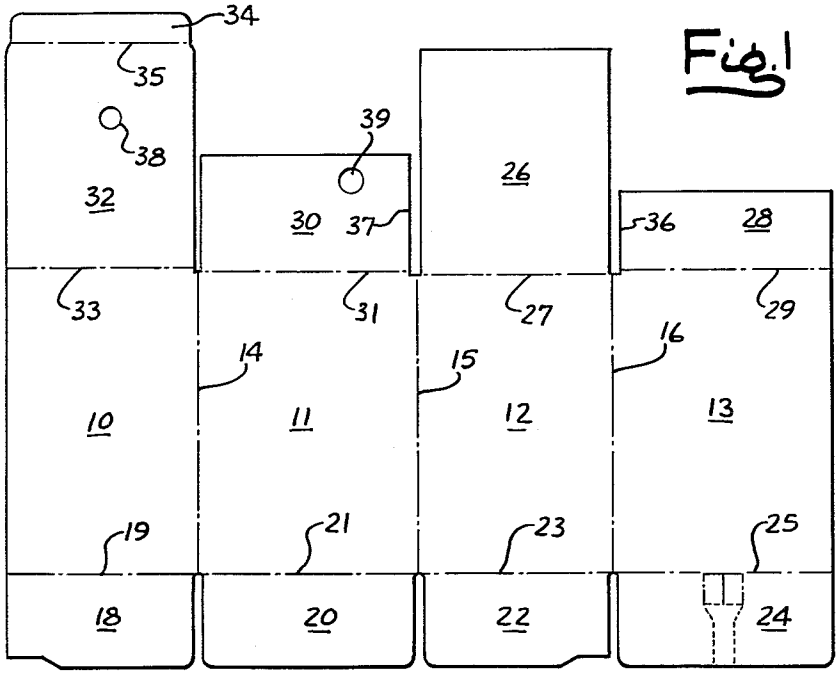


Fig. 2

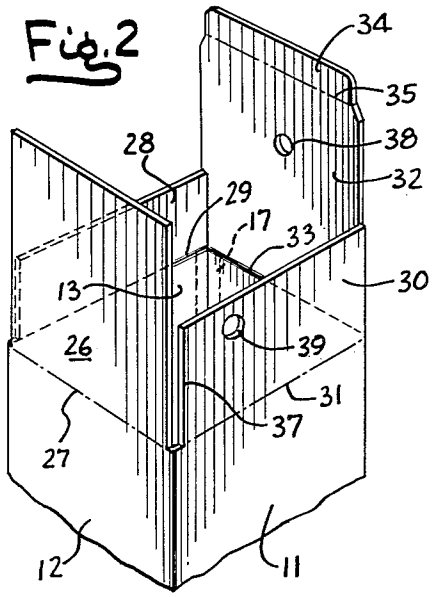
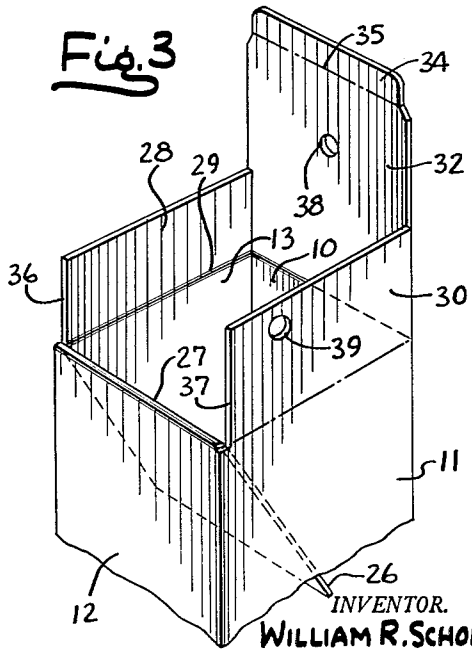


Fig. 3



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Fig. 4

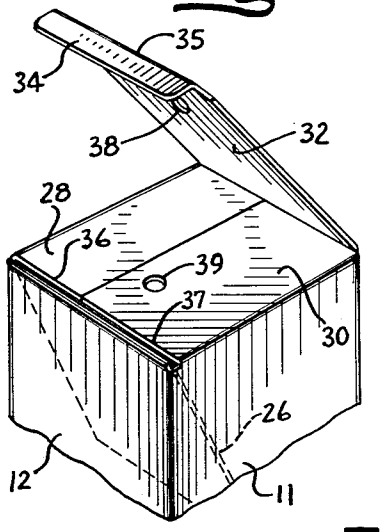


Fig. 5

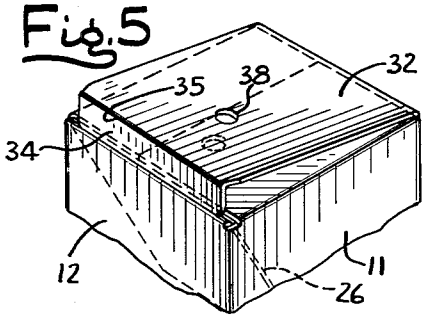


Fig. 6

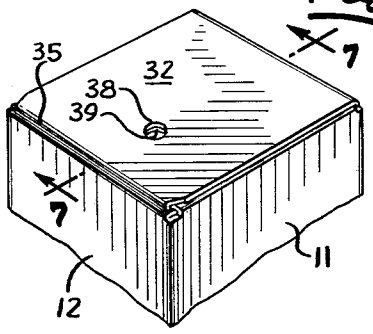


Fig. 7

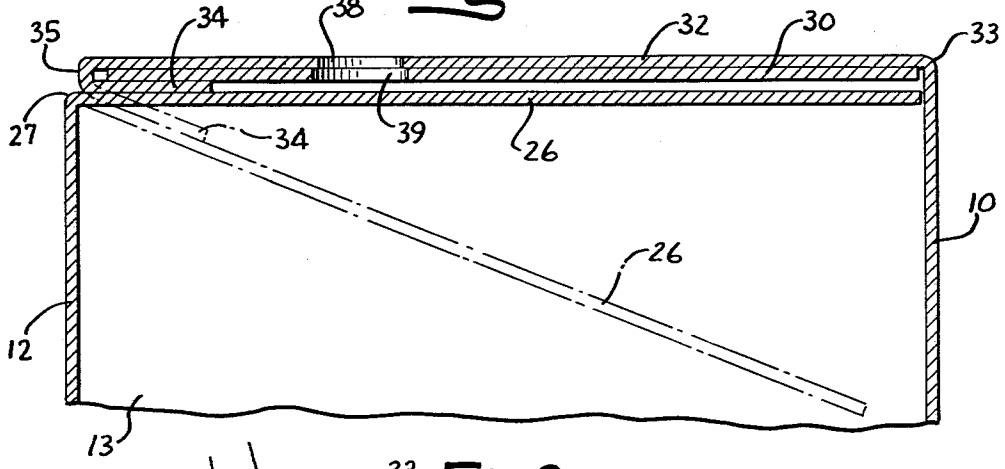
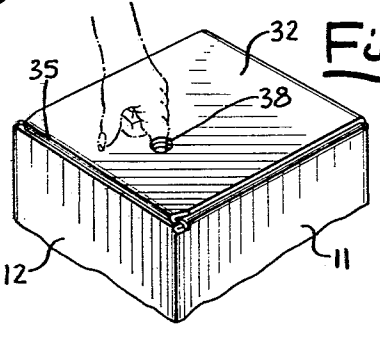


Fig. 8



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3,092,298

CONTAINER

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This invention relates to improvements in containers, and particularly to containers of knock-down character, which may be conveniently shipped flat, readily assembled for use, and easily disassembled or knocked down for storage and for subsequent reuse.

The invention is particularly concerned with the knock-down features of a carton bottom, the component flaps of which may be readily secured together in a releasable manner without the aid of glue, tacks, stitches, tape, or the like, and which when secured hold firmly and at the same time may be conveniently upset when desired.

The carton of the present invention is particularly adapted for the reception and packaging of flexible, collapsible, fluent material-containing liner bags composed of plastic sheet material. In the packaging of such and other materials in a continuous manner by filling machinery, while it is generally convenient to seal down the top flaps by adhesive means, it is not so with respect to the bottom flaps which must be joined together before any contents are disposed therein.

Thus, in accordance with the present invention, although the top and bottom flaps of the carton may be similarly adapted for releasable engagement without sealing or stitching means, as previously referred to, the present invention is particularly concerned with the provision of the bottom-forming flaps of the carton in a manner whereby they may be readily set up and conveniently disengaged.

Other objects and advantages will be apparent from the following specification and accompanying drawings, wherein:

FIG. 1 is a plan view of a blank of corrugated paperboard cut and scored for forming a carton in accordance with the present invention.

FIG. 2 is a perspective fragmentary view showing the side walls of the carton joined together in tubular form, with all of the end flaps still parallel to the respective side walls.

FIG. 3 is a view similar to that of FIG. 2 with one of the bottom end flaps moved downwardly and within the confines of the side walls.

FIG. 4 is a progressive view showing a step subsequent to that illustrated in FIG. 3, that is, with the intermediate bottom flaps moved down normal to the side walls.

FIG. 5 is a further progressive view showing the downward movement of the fourth or outermost bottom flap; and

FIG. 6 is a still further progressive view showing all of the bottom-forming flaps in engaged, operative position.

FIG. 7 is an enlarged section on the line 7—7 of FIG. 6 illustrating in dotted lines the means in which interengagement of the bottom flap components takes place.

FIG. 8 is a view similar to that of FIG. 6 illustrating use of the fingerhold apertures whereby the bottom flaps may be readily separated and disengaged for the purpose of knocking down the carton.

Referring to the drawings, the blank of FIG. 1 comprises the side wall forming sections **10**, **11**, **12** and **13** hingedly joined on the score lines **14**, **15** and **16**. These side walls are set up in tubular form and the outer edges of the panels **10** and **13** secured together in a convenient manner either by a tab integral with one of them not

shown, or conveniently by means of an adhesive tape as indicated at **17**. Each of these side walls has integral top-forming flaps such as flap **18** hinged to side wall **10** on score line **19**, flap **20** hinged to side wall **11** on score line **21**, flap **22** hinged to side wall **12** on score line **23**, and flap **24** hinged to side wall panel **13** on score line **25**.

These may be secured together by adhesive means after the carton has been filled and for knock-down purposes the lines of adhesive may be broken. In the alternative, the top-forming flaps **18**, **20**, **22** and **24** may be similar to those of the bottom-forming flaps. The latter comprise the first flap **26** hinged to panel **12** on the score line **27**, the intermediate flap **28** hinged to panel **13** on the score line **29**, the intermediate flap **30** hinged to panel **11** on the score line **31**, and the fourth flap **32** hinged to panel **10** on the score line **33**.

It will be noted that the panel **32** further comprises a relatively short flap **34** hinged to the outer edge thereof on the score line **35**. It will be still further noted that flap **28** is cut away or notched at its edge **36** which is adjacent to flap **26**, and that likewise flap **30** is similarly notched or cut away as at **37** adjacent to the flap **26**.

In setting up the carton bottom, the flap **26** is first depressed downwardly within the confines of the side walls and desirably substantially parallel to its component side wall **12**. Thereafter the intermediate panels **28** and **30** are folded down into substantial abutment and normal to the side walls. It will be noted from the illustrations that the cut-away ends **36** and **37** of the panels **30** and **28**, respectively, leave a space from the hinge line **27** between flap **26** and side wall **12**. Thus, the fourth or outermost bottom panel **32** is last folded down as shown in FIGS. 4 and 5, with the tab **34** bent on its hinge line **35**, and the tab **34** then projected through the slot left at the ends of panels **28** and **30**, as best shown in FIG. 5, the tab **34** entering above the first and inwardly bent flap **26**.

Following this, the flap **26** is bent upwardly as shown in dotted lines in the section of FIG. 7 to a position normal to the side walls and in substantially plane parallel relationship to the intermediate flaps **28** and **30** and the outermost flap **32**. At the same time the tab **34** is caused to be return bent on its hinge line **35** to likewise assume a plane parallel relationship to the remaining end flaps and in a secured locking position.

The outermost or fourth tab **32** is formed with a fingerhold aperture **38** adjacent its component tab **34**, and the intermediate flap **30** is likewise formed with a fingerhold aperture **39** which registers with the aperture **38**. Thus, as shown in FIG. 8, a finger may be inserted within the apertures **38** and **39**, and by an upward movement of the hand the flap **34** will be caused to be withdrawn from locking engagement and the assembly of the bottom-forming flaps disassociated to permit the entire container to be collapsed for storage, and reuse.

As previously indicated, the container of the present invention is particularly adapted for reception and packaging of a flexible liner bag, and to this end the innermost bottom flap **26**, as will be noted, is in one piece and fills the entire cross-sectional area of the container. This eliminates the necessity for providing a protective bottom liner or filler and, due to its one-piece character, serves to provide a smooth surface and is an aid in preventing rupture of the plastic liner bag by abrasion during shipment.

While I have shown and described the preferred embodiment of my invention, it will be apparent that various changes and modifications may be made therein without departing from the scope of the invention, as defined by the appended claims.

I claim:

1. A rectangular paperboard container comprising four

side walls, flaps hinged to the ends of said side walls forming a top closure, and flaps hinged to the opposed ends of said side walls forming a bottom closure, a first one of said bottom forming flaps having a width equal to its side wall and a length equal to the adjacent side walls, an opposed pair of intermediate bottom forming flaps hinged to said adjacent side walls overlying said first flap, said intermediate flaps having a total length substantially equal to the width of said first flap, and an outermost flap hinged to the fourth side having an area substantially equal to that of said first flap overlying said intermediate flaps, and a tab hinged to the outermost edge of said fourth flap return bent and disposed between said first and said intermediate flaps forming a releasable bottom lock, and means formed in said fourth flap and one of said underlying intermediate flaps comprising aligned finger-hold apertures for facilitating release of said locking engagement.

2. A paperboard blank cut and scored to define four rectangular side walls, flaps hinged to the ends of said side walls adapted to be brought into overlapping engagement and to be secured together to form a top closure, and flaps hinged to the opposed ends of said side walls and adapted to be brought together into overlapping engagement and releasably secured together to form a bottom closure, a first one of said bottom forming flaps having

a width equal to its side wall and a length equal to the adjacent side walls, an opposed pair of intermediate bottom forming flaps hinged to the adjacent side walls adapted to overlie said first flap and endwise spaced from the hinge line of the first flap, said intermediate flaps having a total length substantially equal to the width of said first flap, and a fourth flap hinged to the fourth side panel adapted to be erected opposite said first panel and having an area substantially equal thereto and adapted to overlie said intermediate panels, and a relatively short tab hinged to the outer end of said fourth flap adapted to be return bent through the said endwise spacing of the intermediate panels and to project between said first panel and said intermediate panels to thereby form a releasable bottom lock, said fourth flap and one of said intermediate flaps being formed with finger-hold apertures adapted to be brought into registry for facilitating release of said locking engagement.

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