Sept. 19, 1961 J. D. MILLER 3,000,492

CARTON FOR FRAGILE JUG-LIKE ARTICLES

Filed Aug. 1, 1958 2 Sheets-Sheet 1

FIG. 1

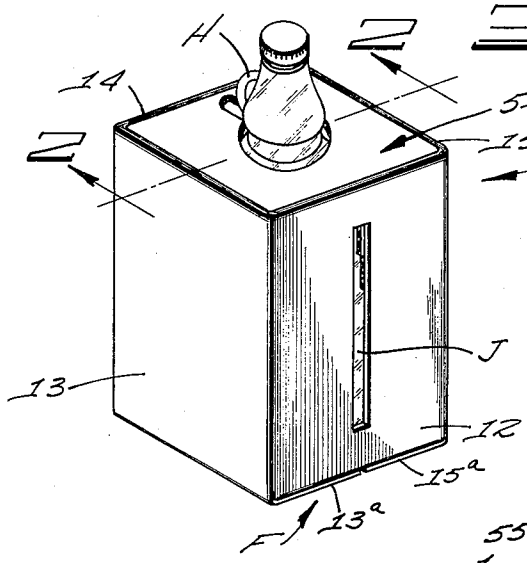


FIG. 2

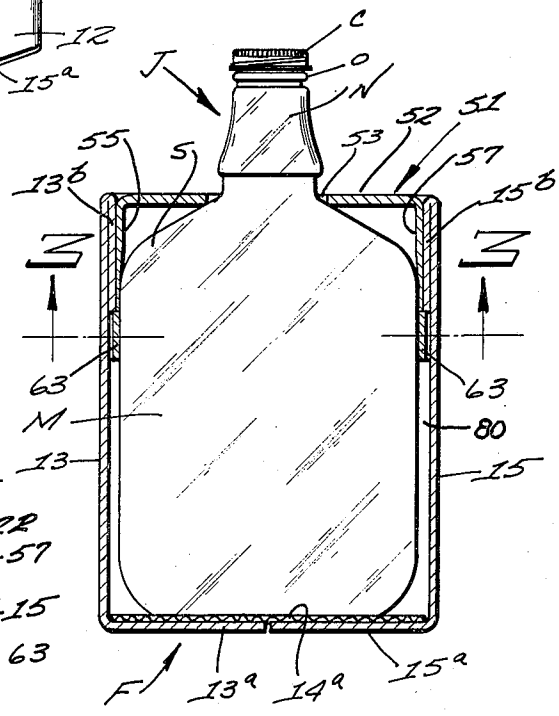
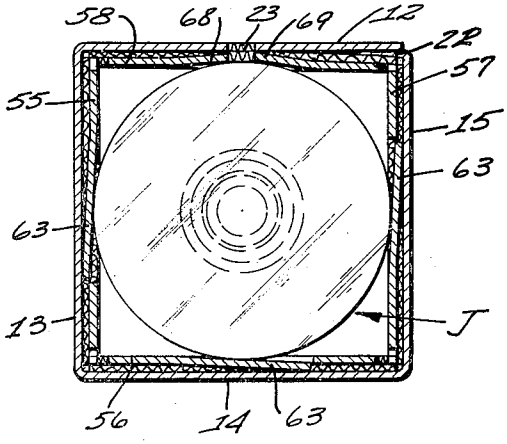


FIG. 3



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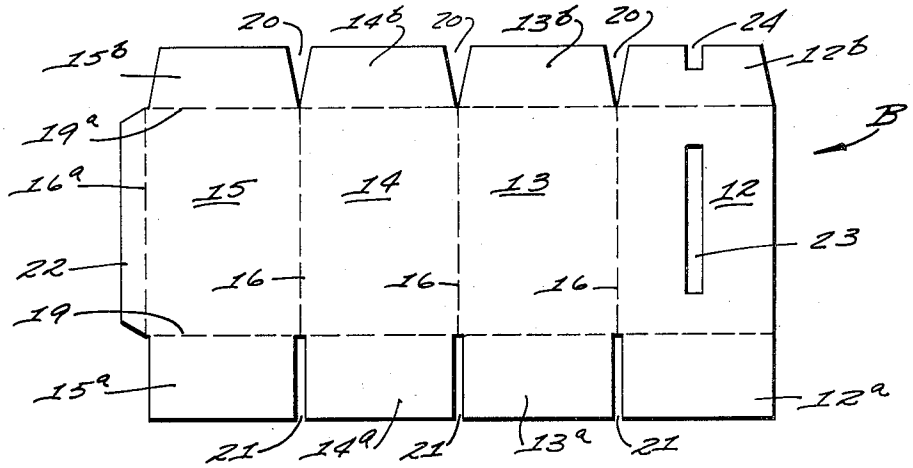


FIG 4

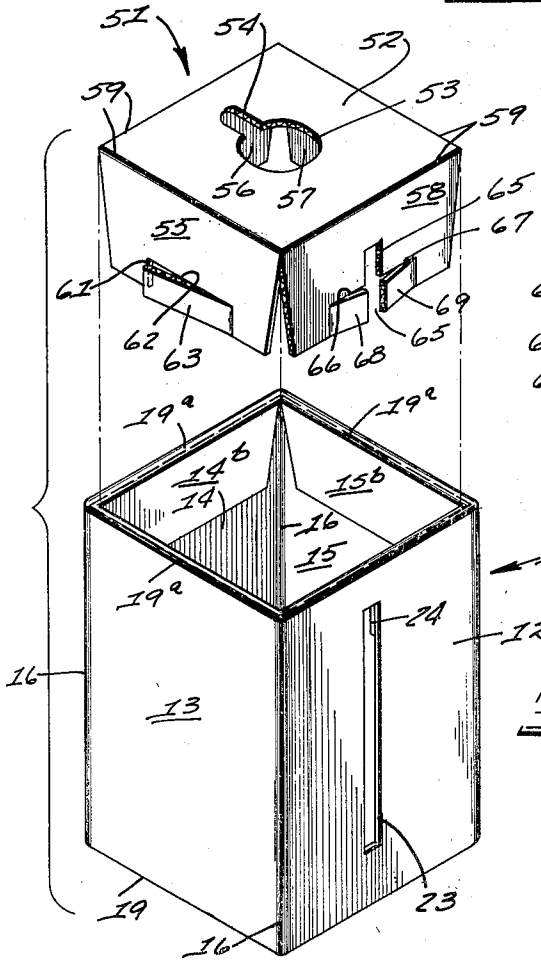


FIG 5

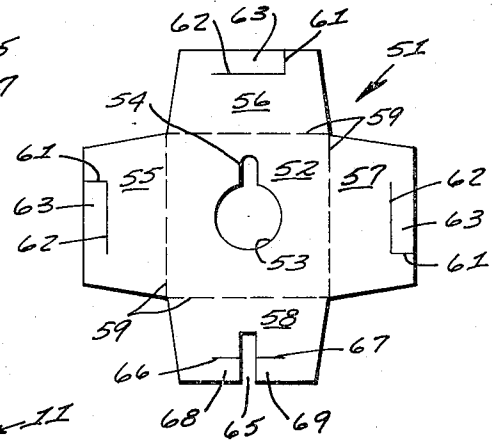


FIG 6

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CARTON FOR FRAGILE JUG-LIKE ARTICLES

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The present invention relates to a carton receptacle for a fragile article. More specifically, the invention relates to a receptacle for a jug-like container made of glass or similarly fragile material. By a jug is meant a container composed of a relatively large body portion, and a generally upwardly projecting neck portion of smaller sectional area and which includes in the neck portion the mouth. The jug may also include a handle adjacent the neck portion. Containers of this type are, of course, quite easily broken in the course of handling and shipping them either empty or when filled with the contents of various sorts, usually liquids. This weakness is emphasized by the fact that the containers are generally large, being of one to five gallon capacity, and the weight of the contents causes even the slightest contact to create a greater shock than would normally be experienced by conventionally sized glass articles. It is also known that statistically one of the weakest points of the jug-like containers is in the shoulder portion. By the shoulder portion is meant the upper portion of the jug adjacent to and just below the neck.

Accordingly, it is a principal object of the present invention to provide an arrangement for safely receiving jug-like glass containers permitting handling and shipment with decreased chances of breakage.

It is likewise an object of this invention to provide a carton which serves as a receptacle and safety pack for such jug-shaped articles.

It is also an object of this invention to provide such a carton which is of simple design and therefore economical to produce.

It is a further object of this invention to provide such a carton which does not enclose the opening of the jug and so permits the jug to be handled, emptied, etc., and thus put to its intended uses and purposes without requiring its removal from the receptacle.

It is still a further object of this invention to provide a jug-carton assembly which is uniquely erected into final form with a minimum of manipulative steps.

It is yet another object of this invention to provide a carton having the foregoing advantages which is formed of two pieces of the material of construction, yet requires no auxiliary fastening to connect the two pieces, the article itself and the unique features of its construction serving to lock the assembled package together.

It is likewise another object of the present invention to provide such a carton which includes an arrangement for viewing the jug-like container.

The foregoing and other objects of this invention will become apparent to those skilled in the art from the following detailed description taken in conjunction with the attached drawings, on which there is presented for purposes of illustration only, a single embodiment of the invention.

In the drawings:

FIG. 1 is a three-quarter perspective view of the assembled carton containing a glass jug.

FIG. 2 is a sectional view taken on the line 2—2 of FIG. 1.

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2, the jug itself however not being sectioned for simplicity of illustration.

FIG. 4 is a plan view of the knock-down blank used in forming the principal body member of the carton of the invention.

FIG. 5 is a plan view of a knock-down blank used in forming an end-to-closure member for the carton of the invention.

FIG. 6 is a three-quarter prespective view which has been exploded and shows the blanks of FIGS. 4 and 5 assembled.

Basically, the present invention contemplates a carton assembly which comprises a tubular shell member having closure means at one end and flaps at the other end folded down within the carton into abutment with the sides of the shell, and an end closure member including a central panel with depending flaps abutting said first-mentioned flaps, said flaps of said closure member being provided with swingable tabs which, when displaced laterally, prevent the closure member's withdrawal from the tubular shell member due to engagement thereof with the lower edges of said flaps of said shell member.

The carton of this invention is illustrated in the drawings and described throughout the specification as being made of corrugated board; however, it should be appreciated that other like materials of construction may be used.

Referring now more specifically to the drawings, there is shown in FIGS. 1, 2, and 3 a jug J enclosed by a tubular carton member **11** defined by upstanding side walls **12**, **13**, **14**, and **15**. Bottom closure flaps generally designated F in FIG. 1 provide an effective closure for the bottom. An upper closure panel generally designated **51** spans the upper end of the tubular carton. Its location and rigidity is imparted by depending flaps **58**, **57**, **56**, and **55**, foldably connected to the edges thereof. These flaps are folded downwardly, and then the top closure member is telescoped down within the confines of the tubular receptacle **11**. The more detailed nature of the construction of the carton, and the relationship between the components will appear hereinafter.

The jug generally designated J is composed of a major body or container portion M, a shoulder portion S, an upwardly projecting neck portion N, a threaded opening or mouth O, and, closing the opening, a threaded metal cap C. The jug may also have an integral handle H connected at the neck portion. As discussed hereinbefore, one of the weakest parts of such jug-like container is the shoulder portion S. It will be seen in FIG. 2 that the shoulder portion of the illustrated jug J is completely enclosed by carton assembly of this invention and protected from contact with adjacent jugs, shelving, etc.

The tubular carton member **11** is shown in more detail in FIG. 4, wherein there is shown in plan view a blank B which is slitted and scored as to be formable into the tubular member **11**. As can be seen, a linear series of panels **12**, **13**, **14**, and **15** are hingedly connected together and separated by fold lines **16**. Flaps **15***a*, **14***a*, **13***a*, and **12***a* depend from the panels beyond a score fold line **19**. The just-mentioned flaps are separated one from the other by slits **21** which are extensions of the fold lines **16**. Similar flaps **15***b*, **14***b*, **13***b*, and **12***b* extend from the other end of the panels beyond a score fold line **19***a*. These flaps are separated one from the other by V-shaped notches **20** which are in alignment with the fold lines **16**. The purpose of the V-shaped notches will appear hereinafter. A glue or staple flap **22** extends laterally from panel **15** beyond a score line **16***a* and serves to permit panels **15** and **12** to be connected together edge to edge to form the tubular carton. The glue or staple flap is located to either overlap or underlie the panel **12** and fastened thereto with staples, glue or the like. Panel **12** is provided with a linear opening **23** for a major portion of the vertical height thereof. Its associated upper flap **12***b* is provided with a notch **24** in its outer free edge, and in alignment with the opening **23**.

The end closure member 51 is shown most clearly in blank form in FIG. 5. It is composed of a generally square panel 52 having an aperture 53 located in the middle thereof. The aperture is generally circular, but, as can be seen, it is provided with a notch or cut-out 54. Four flaps, 55, 56, 57, and 58, extend from the four sides of the panel 52, and are separated therefrom by score fold lines 59. The flaps 55, 56, and 57 are identical in that they are provided with a slit 61 extending inwardly from the outer free edges, and thence at right angles parallel to the outer free edge as at 62. This, in effect, defines on each of these flaps an integral swingable tab 63 which functions to provide an important feature of this invention. The other flap 58 is notched in its outer free edge as at 65 for a purpose appearing hereinafter. The notch is the same size and width as the opening 23 and notch 24 in the blank B. The flap 58 is further provided with slits 66 and 67 extending from the notch 65 in a direction parallel to the outer free edge of the flap. These serve to define alike swingable tabs 68 and 69 in the flap 58.

The manner of assembling the carton of this invention may be most clearly understood by reference to FIGS. 4, 2, and 6. First, the blank B is folded on the score lines 16 to bring the glue flap 22 into overlapping relationship with the lateral free edge of the panel 12. The flap is attached to the panel 12 by any convenient fastening means. Next, the top flaps 15*b*, 14*b*, 13*b*, and 12*b* are folded down about the top edge of the tubular carton defined by fold line 19*a* until they are in face-to-face relationship with their associated side walls. The notch 24 in flap 12*b* will thus be in registration with the opening 23 in the panel 12. The V-shaped notches between those first-mentioned flaps permit them to be folded into their desired location without any binding between adjacent edges. This, of course, facilitates erection of the carton. The bottom flaps 12*a*, 13*a*, 14*a*, and 15*a* may now be folded into overlapping relationship with each other and normal to the vertical side walls. They may be conveniently fastened together by gluing, stapling, or taping. There will thus be formed a carton such as illustrated in the bottom-most portion of FIG. 6. The fragile jug-like article may now be lowered into the open top of the carton, bottom first. The jug will come to rest on the overlapped bottom flaps defining a bottom closure for the carton. The side wall of the jug will be in loose contact with the downturned flaps 12*b*, 13*b*, 14*b*, and 15*b*, keeping them in their downturned position. Next, the end closure panel blank 51 is prepared by folding the flaps 55, 56, 57, and 58 about fold line 59 into normal relationship with the central panel 52. It is then located as in FIG. 6 over the outer shell member 11 containing the jug as described. For clarity of illustration, the jug itself has been omitted from FIG. 6. The end closure member 51 may now be easily let down to telescope within the principal shell member 11. The opening 53 will pass over the opening and neck portion of the jug as the depending flaps slide in contact with the downwardly turned flaps of the outer shell member. In pushing the top closure member 51 down into its final location, the tabs 63 in flaps 55, 56, and 57, and the tabs 68 and 69 in flap 58 will come in contact with the peripheral shoulder portion S of the jug-like container. This contact will displace the tabs laterally or outwardly as shown in FIGS 6, 3, and 2. This will cause a portion of the tabs to underlie the lower free edges of the flaps 12*b*–15*b*, and thus lock the top closure member in place so that it cannot be removed therefrom.

It will be appreciated that the carton of this invention is extremely desirable both from the standpoint of the manufacture of the jug-like article and the purchaser thereof who wishes to fill the jug-like container with his particular product. Thus, the manufacturer of the jug may ship it in the principal shell member alone, but including a sufficient number of the closure members. The purchaser thereof may then easily remove the jug-like container from the principal shell member, fill it with the product, re-insert the filled jug into the principal shell member, and incorporate therein a simple manner the closure member 51. The operation described just above is most desirable from the standpoint that no auxiliary fastening is required to complete the assembly of the final package.

The tabs 63, 68, 69 are capable of being displaced by reason of the fact that the downturned flaps connected to the side walls leave a small space 80 beneath them between the outer surface of the jug and the inner surfaec of the side walls 12, 13, 14, and 15. The dimensions of the carton and, more particularly, the dimensions of the flaps are carefully chosen so that the tabs 63, 68, and 69 just underlie the flaps 12*b*, 13*b*, 14*b*, and 15*b*. As a consequence, there will be no "play" between the panel 52 and the jug.

It will be appreciated that the notch 65 registers with the notch 24 and opening 23 so as not to interfere with the viewing of the interior of the carton through the opening 23. The notch 65 is not absolutely necessary, of course, and, accordingly, the flap 58 could be conveniently provided with swingable tabs like those in the other three flaps.

The carton, of course, may be assembled prior to the introduction of the jug. Thus, the top closure member 51 may be telescoped within the principal shell member 11 until the panel 52 is in the plane of the top edges 19*a*. This will locate the tabs 63, 68 and 69 in their proper relationship with the flaps 12*b*–15*b*. Then, the jug may be introduced through the other end of the carton, and, as the shoulder portion of the jug passes, it will force the tabs 63, 68, and 69 outwardly to accomplish the locking feature.

With the foregoing description, it is believed that it will be obvious that the carton construction of this invention is possessed of all of the advantages recited hereinbefore, as well as many others. The carton, of course, may be shipped in flat, knock-down form, e.g., the blanks B and 51. Having these blanks, the user has only to form the tube by folding and fastening the flap 22 to the panel 12, ready the top closure member, assemble the two, insert the jug from the bottom, and close the closure flaps. To make it even easier for the user, the manufacturer of the blank B may fold it about the fold line 16 between the panels 13 and 14, and fasten the glue flap 22 to the panel 12 prior to shipment to the consumer. The user or consumer thus has only to form the tube, insert the goods and the closure or lid member and close the bottom flaps.

Although the foregoing description has dealt with jug-like containers, it may be appreciated that the package and its feature would find application to other articles and commodities. It is also possible to utilize the unique closure scheme of this invention at both ends of a tubular body member to yield self-locked recessed closures with reinforced corners and ends.

Modifications may be resorted to in the practice of the invention, and such obvious modifications are intended to be within the spirit and scope of the invention unless excluded by the language of the appended claims.

I claim:

1. A package for a jug-like container having a neck portion and a body portion, comprising a tubular carton having a plurality of side panels foldably connected together in a closed configuration, bottom closure flaps foldably connected to the lower ends of the side panels and adapted to close the bottom of said carton, at least two oppositely disposed top flaps foldably attached to the upper ends of the side panels, said top flaps being inturned to lie flush with their respective side panels with their free edges forming downward facing abutments, an end closure formed of a resilient sheet-like material and

having a central panel nestable within said inturned top flaps, said central panel having an aperture adapted to receive the neck portion of said container, at least two flange flaps depending from the periphery of said central panel and adapted to lie flush with said inturned top flaps, locking tabs foldably attached to the lower ends of said flange flaps, said locking tabs being arranged to swing laterally outwardly and having free edges adapted to closely underlie said abutments when said central panel snugly engages the neck portion of said container, and said tubular carton being sized so that a portion of said inturned top flaps is spaced apart from the body portion of a container placed within the carton a distance less than the thickness of the locking tabs, whereby the locking tabs will be compressed when they are placed between the inturned top flaps and the body portion of the container, and will spring outwardly to underlie said abutments to lock the end closure securely in place when the free edges of the locking tabs underlie said abutments.

2. A package for a jug-like container having a neck portion and a body portion, comprising a tubular carton comprising a plurality of side panels foldably connected together in a closed configuration, bottom closure flaps foldably connected to the lower ends of the side panels and adapted to close the bottom of said carton, at least two oppositely disposed top flaps foldably attached to the upper ends of the side panels, said top flaps being inturned to lie flush with their respective side panels with their free edges forming downwardly facing abutments, said free edges extending downwardly to lie adjacent the

body portion of said jug-like container when said container is placed within the tubular carton, an end closure formed of corrugated paperboard and having a central panel nestable within said inturned top flaps, said central panel having an aperture adapted to receive the neck portion of said container, at least two flange flaps depending from the periphery of said central panel and adapted to lie flush with said inturned top flaps, said flange flaps having lower marginal portions extending below the free edges of said inturned top flaps, locking tabs carved out of said marginal portions and foldably attached thereto, said tabs having free edges adapted to closely underlie said abutments when said central panel snugly engages the neck portion of said containers, and the tubular carton being sized so that a portion of said inturned top flaps is spaced apart from the body portion of a container placed within the carton a distance less than the thickness of the depending flange flaps, whereby the flange flaps will be compressed when they are placed between the inturned top flaps and the body portion of the container, and the locking tabs will spring outwardly to underlie said abutments to lock the end closure securely in place.

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