May 1, 1951 C. L. GILBERT 2,551,559

BOTTLE CARRIER

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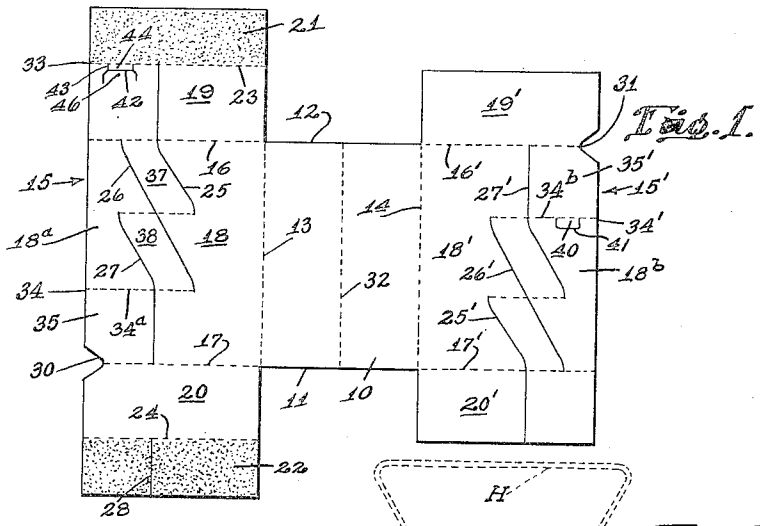


Fig. 1.

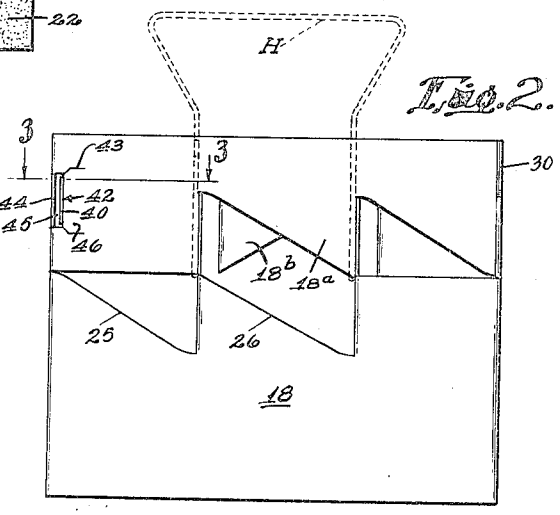


Fig. 2.

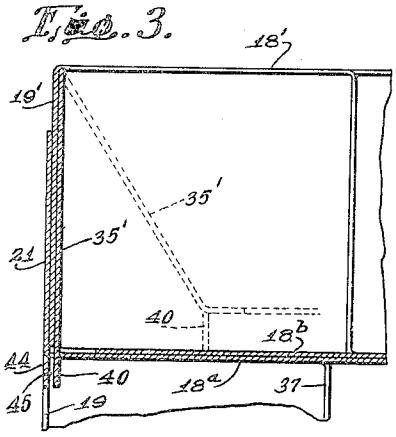


Fig. 3.

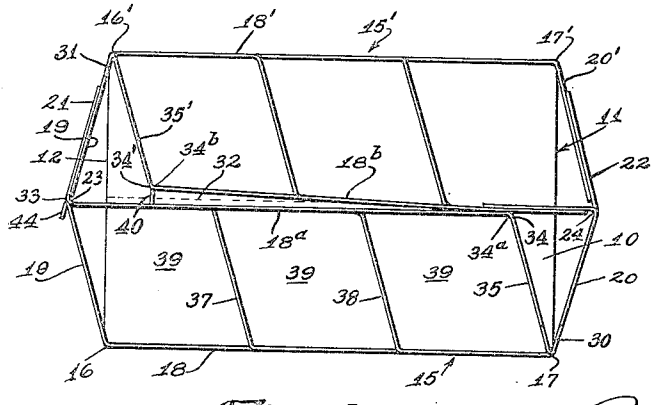


Fig. 4.

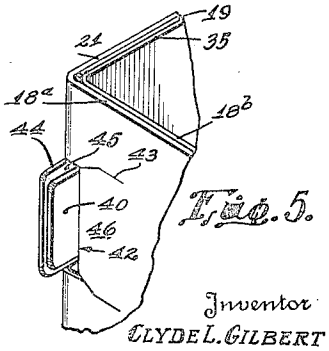


Fig. 5.

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BOTTLE CARRIER

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2 Claims. (Cl. 229—28)

1

My invention relates to carriers for bottles or other articles and particularly to carriers made of foldable sheet material and which may be set up from a folded or collapsed condition preparatory to receiving the bottles or other articles carried therein.

An object of the invention is to provide an improved form of carrier which may be readily set up or expanded from a folded form into shape to receive the articles and provided with means for securely holding the carrier in its set up form.

A further object of the invention is to provide a novel form of locking means as an integral part of the blank from which the carrier is formed and operable to hold the carrier in its expanded form.

More particularly, an object of the invention is to provide a foldable bottle carrier of sheet material having an integral latch-lock which is operated automatically by the expanding or setting up of the carrier and thereby automatically locks the carrier in its expanded form.

Other objects of the invention will appear hereinafter.

Referring to the accompanying drawings:

Fig. 1 is a plan view of a blank adapted to form the carrier;

Fig. 2 is a side elevation on a larger scale, of the carrier;

Fig. 3 is a sectional detail on a comparatively large scale, at the line 3—3 on Fig. 2;

Fig. 4 is a plan view of the partly expanded carrier; and

Fig. 5 is a fragmentary perspective view of the portion of the carrier comprising the latching and locking means.

The carrier is preferably fabricated from a single piece flat blank of the form shown in Fig. 1, the blank consisting of cardboard, paperboard, or other foldable sheet material. The blank is formed with fold lines, indicated by broken or dotted lines in Fig. 1, consisting of scores, creases or the like, along which the blank is adapted to be folded for forming the carrier.

The blank includes a rectangular panel 10 which forms the bottom of the carrier, said panel having end edges 11 and 12, the side edges of said bottom being defined by parallel fold lines 13 and 14. The blank includes substantially rectangular sections 15 and 15' joined to the bottom panel along the fold lines 13 and 14. Fold lines 16 and 17 extend across the section 15 in line with the edges 12 and 11 respectively, and define the end edges of a side panel 18. The

2

opposite side panel 18' lies between the end fold lines 16', 17', also in line with the edges 12 and 11 respectively.

The section 15 is extended beyond the fold line 16 to provide an end panel 19 and in integral glue flap 21 with a fold line 23 at the meeting edges of the said flap and panel. The section 15 is extended at its opposite end beyond the fold line 17 to form the end panel 20 and glue flap 22 with fold line 24 therebetween. When the carrier is set up, the fold lines 23 and 24 extend vertically in the plane of the bottom fold line 32. The section 15' has end panels 19' and 20' which may be of the same width or somewhat narrower than the opposite end panels 19 and 20. The glue flaps 21 and 22 in the set-up carrier overlie and are adhered to the panels 19' and 20' as hereinafter set forth.

The section 15 is formed with slits 25, 26 and 27 which, while the carrier is being set up or expanded as hereinafter described permit the panel 18^a, which forms one of the handle strips, to retain a position in which it extends lengthwise of the carrier over the center fold line 32 while the side panels 18 and 18' are spread apart.

The section 15' is formed with slits 25', 26' and 27' which correspond to the slits 25, 26 and 27 respectively, but in reversed arrangement owing to the manner in which the blank is set up, as hereinafter described. The glue flap 22 is formed with a slit 28 extending thereacross. The section 15 is formed with a notch 30 at the outer end of the fold line 17 and the section 15' is formed with a notch 31 at the outer end of the fold line 16'. Said notches facilitate the setting up of the carrier, as hereinafter described.

After the blank is cut and provided with fold lines, it is folded to form the bottle carrier in a collapsed or flat form adapting it for packing, storing or shipping, before being set up for use. To form the folded carrier, the blank is doubled along the central fold line 32 extending lengthwise through the bottom panel 10, thereby superposing the section 15' upon the section 15. The glue flaps 21 and 22 which have applied thereto glue or other adhesive as indicated by the stippling, are then folded over and adhered to the panels 19' and 20' respectively, thus completing the folded or collapsed carrier. It will be seen that in the folded carrier the end panels 19 and 19' are superposed one upon the other and are hinged or foldably united at their outer edges along the fold line 23; also the opposite end panels 20 and 20' are in like manner superposed and connected along the fold line 24. The entire

section 15' is also flat and lies against the section 15.

The sections 15 and 15' include panels or handle strips 18a and 18b respectively which, in the set-up carton, are brought together and may serve as a handle positioned above the side panels 18, 19' and extending lengthwise of the carrier in the plane of the central bottom fold line 32, that is, in the medial, longitudinal, vertical plane of the carrier.

The method of expanding or setting up the folded carrier is as follows:

Inward pressure is applied at the ends of the carrier, namely at the fold lines 23 and 24, thereby spreading or opening out the blank, thus giving the body of the carrier a rectangular form. During this expanding movement, the end panels 19, 19' which are connected by the glue flap 21 and hinged at the fold line 23, swing apart to form one end of the carrier. The opposite end of the carrier is formed in like manner by the unfolding of the panels 20, 20'. This expanding of the carrier body will be facilitated by the application of upward pressure to the bottom section 10 which opens out as the carrier is expanded.

Referring to Fig. 4, which is a plan view of the carrier partly unfolded and approaching its fully expanded or set-up position, it will be seen that during this setting up, the panel 18a or handle strip which extends from the point 33 (at the upper end of the now vertical fold line 23) to a point 34 (at the upper end of the fold line 34a) remains straight and substantially in the vertical plane of the bottom fold line 32 perpendicular to the end edge 12 of the bottom 10. Also during this setting up of the carrier, a panel section 35 extending between the fold lines 34a and 17, swings relatively to the panel 18a about the fold line 34a and also swings about the fold line 17. In this manner, the panel 18 is retained substantially in the vertical plane of the center fold line 32 throughout the expanding of the carrier. In the same manner, the panel 18b is brought to its operative position by lengthwise bodily movement while the end portion or panel 35', connected to the panel 18b along a fold line 34b, swings about said fold line 34b and fold line 16'. Thus, the panels 18a and 18b are given a lengthwise movement in opposite directions during the setting up of the carton, said sections remaining substantially parallel and close together during said movement. During the expanding of the carrier, the diagonal strips 37 and 38, formed by the slits 25, 26 and 27, swing to a position to divide one side of the carrier into individual cells 39. The other half of the carrier is divided in like manner into cells for the bottles or other articles.

In order to securely hold the carrier in its set-up position, there is provided a latching and locking device now to be described. The blank is provided with a locking latch or tongue 40, formed by a slit 41 extending parallel with and adjacent to the fold line 34b (Fig. 1), the slit having transverse end portions extending to the said fold line. An opening to receive the latch 40 is formed by slitting the blank adjacent to the fold line 23 along a line 42 and connecting the latter with the fold line 23 by end slits 43 which are extended both forwardly and rearwardly from the slit 42. In this manner, a tab 44 is formed which, when the blank is folded, remains substantially in the plane of the end panel to which it is attached, thus leaving a

slot or narrow opening 45 to receive the latch 40.

During the expanding of the carrier, the latch 40 remains substantially or approximately in the plane of the swinging panel 35' to which it is attached along or in line with the fold line 34b and slides along the surface of the panel 18b as indicated in Figs. 3 and 4. As the carrier completes its opening movement to fully expanded position, the latch 40 springs or snaps into the slot 45 and thereby locks the carrier in its open position. The sheet material forming the carrier has sufficient resiliency to permit this operation by which the latch is snapped into position in front of the tab 44 (Fig. 5). The slits 43 define the ends of a yieldable section 46 which, during the final opening movement of the carrier, is sprung outwardly a short distance by the pressure of the latch 40 and then snaps back into holding position as the latch drops behind it. If desired, a wire handle H may be hooked onto the carrier.

Modifications may be resorted to within the spirit and scope of my invention.

I claim:

1. A carrier formed from a blank of foldable sheet material, said carrier being expansible from a folded to an expanded form, the blank in its folded form comprising a rectangular bottom folded along a median line, side panels united to said bottom along longitudinal fold lines, end panels foldably united to the side panels, handle-forming strips united to the end and side panels, said handle-forming strips extending lengthwise of the carrier and being juxtaposed one against the other and relatively slidable lengthwise of the carrier in opposite directions during the expanding of the blank, one of said handle-forming strips being connected at one end thereof by a fold line to an end panel section which is swung outwardly to a position perpendicular to said connected handle section as the blank is expanded from its folded form, said end panel section having a tab formed thereon by slits in the adjoining end of the said strip, thereby forming a locking latch hinged to the end panel section at the said fold line between the panel section and the adjoining said strip, the other handle-forming strip being formed with a slot therein in position to receive the locking latch as said strips complete their relative lengthwise movement with the blank in its fully expanded form.

2. The carrier defined in claim 1, wherein the material forming the blank is resilient and the said locking latch tends to remain in the plane of the said end panel section during the expansion of the blank and thereby to be brought to a position about perpendicular to the handle-forming strip during the expansion of the blank and to be sprung into the said slot as the carrier reaches its fully expanded form.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,308,818	Levkoff	Jan. 19, 1943
2,322,396	Slevin	June 22, 1943
2,354,369	Gilbert	July 25, 1944
2,367,066	Slevin	Jan. 9, 1945
2,381,543	Inman	Aug. 7, 1945
2,476,181	Crane	July 12, 1949