

July 3, 1945.

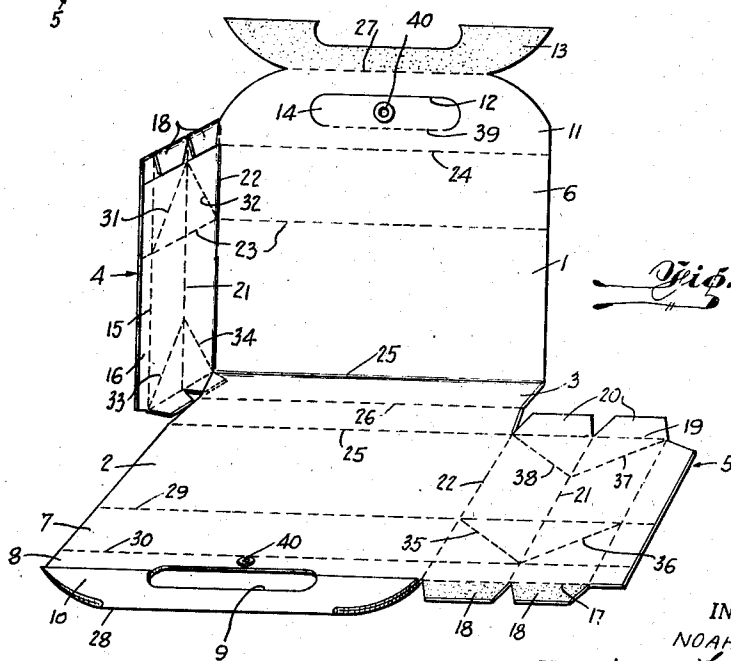
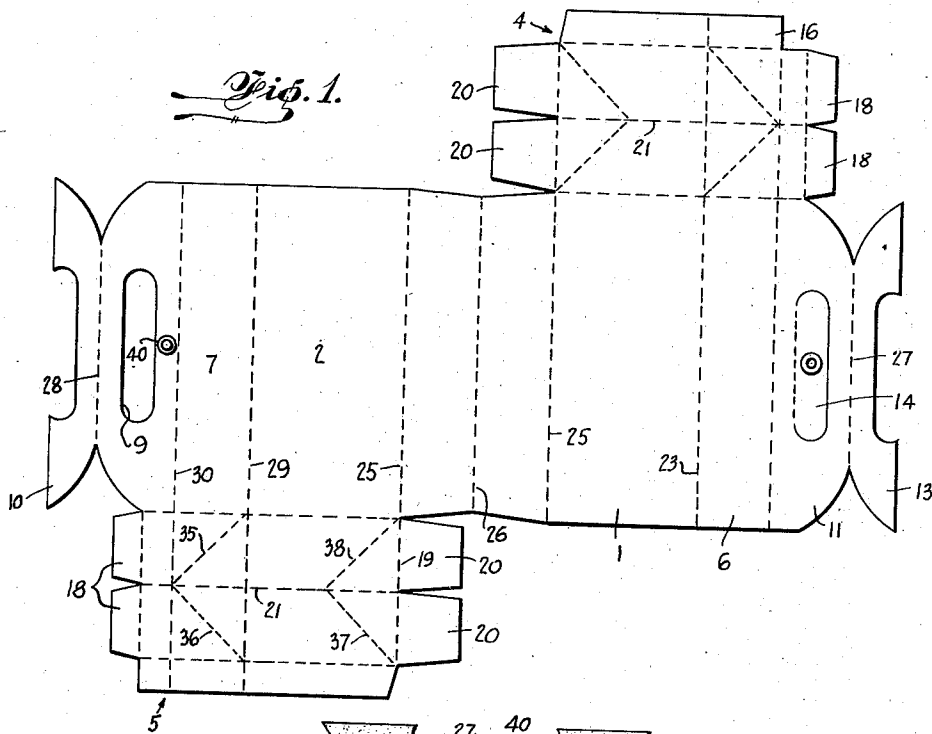
N. STONE

2,379,665

FOLDING BOX

Filed June 7, 1943

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

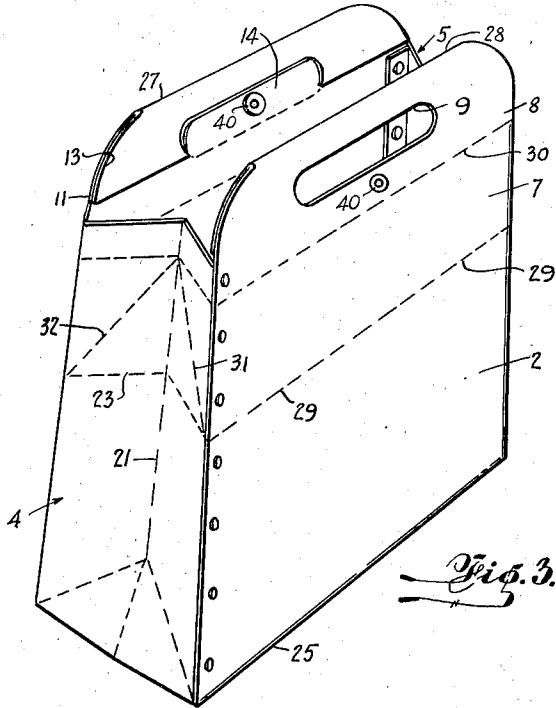


Fig. 3.

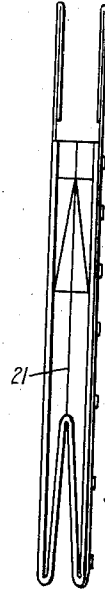


Fig. 7.

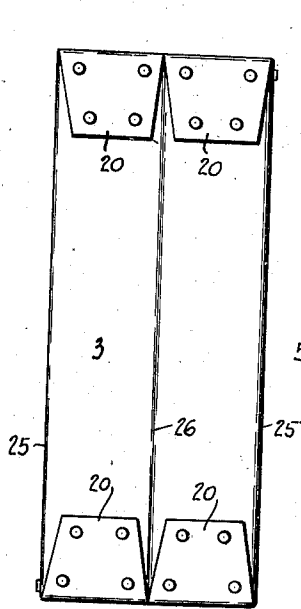


Fig. 4.

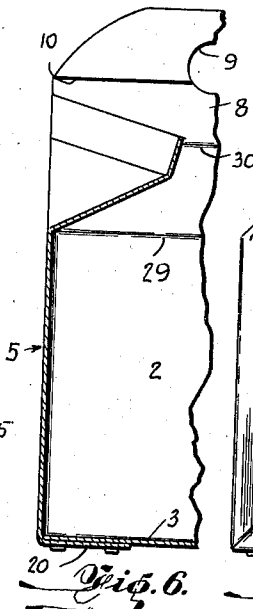


Fig. 6.

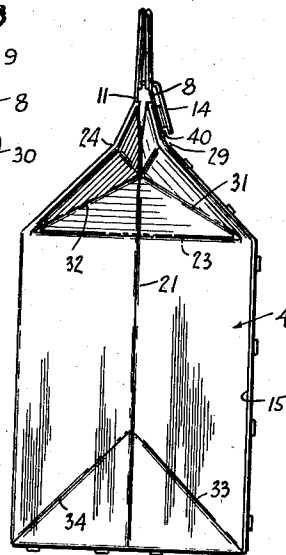


Fig. 5.

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UNITED STATES PATENT OFFICE

2,379,665

FOLDING BOX

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Application June 7, 1943, Serial No. 489,876

2 Claims. (Cl. 229-41)

The present invention relates to improvements in receptacles such as cartons, carrying cases, lunch boxes and the like, and has for an object the provision of such an article formed from a single blank or sheet of material, which said article can be folded flat or collapsed when not in use, and which when in use, has a carrying capacity approaching the maximum, considering its dimensions.

It is an especial object of this invention to provide an article which can be readily and quickly formed from the initial blank, which is inexpensive, long wearing, and sufficiently strong to permit it to carry substantially heavy loads without tearing through the material or disarranging the parts.

In a more specific sense, it is an object of the present invention to provide a blank which can be folded up to provide a rectangular or box-like carton or container which can be collapsed or folded in a plane to flat form.

It is an additional object of the present invention to provide an article of the character described having a gabled top, and provided with a carrying handle.

Other features of the present invention will appear as the description proceeds.

In the accompanying drawings:

Fig. 1 is a flat view of the blank from which the carton or box is formed.

Fig. 2 is a perspective illustrating the initial operation or step in the forming-up of the carton from the blank.

Fig. 3 is a perspective of the fully formed carton in its open position, showing its rectangular construction, and ready to receive sundry articles.

Fig. 4 is a bottom view thereof.

Fig. 5 is a side view of the container in closed and carrying position.

Fig. 6 is a fragmentary longitudinal sectional view of the closed container shown in Fig. 5.

Fig. 7 is a side view of the container when folded flat in collapsed condition.

Referring more particularly to Figs. 1 and 2, it will be seen that the blank is provided with two main panels respectively, 1 and 2, which will form the front and rear walls or panels of the formed-up article. In between said panels 1 and 2 is a panel 3 destined to form the bottom of the carton. Extending laterally from the main panels 1 and 2 respectively, are flaps 4 and 5 destined in part to be the side walls or panels of the container or carton. Continuous with said panels 1 and 2 respectively, are panels 6 and 7 respectively, which are destined to constitute

part of the gabled top. Continuous with panel 7 is flap 8 having a hand hole 9 therein and a reinforcing portion 10. Similarly continuous with panel 6 is flap 11 having a hand hole 12, as well as a reinforcing portion 13 and a tab 14, the latter being adapted to pass through hand hole 9. The several panels, reinforcing portions, flaps and tab are demarked by score lines, specific reference to which will be made as the description proceeds.

Referring now more particularly to the side flaps 4 and 5, it will be seen that each is subdivided by scored lines, as follows: score lines 15 to provide marginal flaps 16; score lines 17, demarking reinforcing tabs 18; score lines 19, demarking bottom flaps 20, from side flaps; longitudinal score lines 21 bisecting flaps 4 and 5; said flaps 4 and 5 are demarked from the main panels by score lines 22.

Reverting now to the main and bottom panels, it will be seen that panel 1 is demarked from panel 6 by score line 23 which extends clear across the side flap 4 including the marginal flap 16. Similarly, panel 6 is demarked from panel 11 by score line 24 which also extends clear across flap 4 including marginal flap 16.

Bottom panel 3 is demarked from panels 1 and 2 respectively, by score lines 25, which are continuous with score lines 19. Panel 3 has a medial score line 26, whose relation to score lines 21, will be made clear shortly. Reinforcing portion 13 is demarked by score line 27, while reinforcing portion 10 is demarked by score line 28. Panel 2 is demarked from panel 7 by score line 29 which extends clear across side flap 5 including marginal flap 16, while panel 7 is demarked from flap 8 by score line 30 which extends clear across side flap 5 including marginal flap 16. Diagonal scoring lines are provided in the side flaps as follows: 31, extending from the juncture of score lines 15-23 to 21-24; 32, extending from the juncture of score lines 22-23 to 21-24; 33, extending from the juncture of score lines 15-19 to line 21; 34, extending from the juncture of score lines 19-22 to line 21; 35, extending from the juncture of score lines 22-29 to 21-30; 36, extending from the juncture of score lines 15-29 to 21-30; 37, extending from the juncture of score lines 15-29 to line 21, and 38, extending from the juncture of score lines 19-22 to line 21.

The reinforcing portions 10, 13 and 18, 18, respectively, are folded along their respective score lines, viz: Portion 10 is folded along line 28 and is secured to the inner face of part 8 in any pre-

ferred manner. Reinforcing portion 13 is folded along scoring line 27, and secured to the inner face of part 11. The several tabs 18, 18, are folded along score lines 17, and secured to the inner faces of panels 4 and 5, respectively. Fig. 2 shows certain of the reinforcing portions before folding and securing, and certain others after this operation.

After the reinforcing operation, the upper part of the blank is bent at a right angle along upper score line 25, while the side flap 4 is bent at a right angle to said upper part of the blank along score line 22. Flap 20 is bent at a right angle along score line 19 and placed beneath the bottom panel 3. Marginal flap 16 is bent at a right angle along score line 15, so that when the lower panel is brought up it will oppose the inner surface thereof. Fig. 2 illustrates the position of the parts up to this point, with panel 1 and side flap 4 in vertical plane, and the remainder of the blank in horizontal plane. The operation is continued by bending flap 20 of side flap 5 at a right angle along score line 19, and bending panel 2 at a right angle along lower score line 25. Side flap 5 is then bent at a right angle along score line 22. Flap 20 of side flap 5 is placed beneath bottom panel 3, and marginal flap 16 is bent at a right angle along score line 15. Panel 2 will then parallel panel 1 and side flap 4 will parallel side flap 5 completing the container. The marginal flaps are then glued, riveted or otherwise secured to panels 1 and 2, respectively.

It will now be observed that medial score lines 21, 21 of side flaps 4 and 5 are in a line or plane with score line 26 of the bottom panel 3. This enables the container to be accorded or folded flat by infolding along the said score lines. To facilitate this infolding at the bottom of the container, diagonal score lines 33, 34, 37 and 38 are provided. Fig. 7 shows clearly this latter flat feature.

Provision is also made for a similar infolding of the upper part of the container. For a clearer understanding of this feature, reference is made to Figs. 3 and 5; Fig. 3 shows the open box form; Fig. 5 shows the "gabled top" form. This trans-

formation is accomplished by imposing pressure inwardly at the center of the triangular portions formed by the score lines 29, 35 and 36 in the case of side flap 5 (Fig. 3), and score lines 23, 31, and 32 in the case of side flap 4. Fig. 5 shows the result of this latter operation—namely, the box-like or rectangular character of the carton is maintained with only the upper part infolded at the sides. This incidentally produces the "gabled" effect and brings the handle parts 8 and 11 together. The tab 14 is bent at a right angle along scoring line 39 and passed through the hand hole opening 9 in handle part 8. In the drawings, the carton has been shown as provided with snap fastener means 40 applied to tab 14 and part 8 respectively. Other securing or locking means may be employed, or none, since frictional and flexural resistance alone may be relied upon to keep tab 14 in engagement with part 8.

- Having described my invention, what I claim is:
1. A blank for folding into a lunch box and the like, comprising two main panels joined by an intermediate panel destined to be the bottom of said box, a side flap extending laterally from each of said main panels, said side flaps having tabs adapted to be bent at right angles thereto and to be disposed against and secured to said intermediate panel, marginal flaps on said side flaps adapted to be bent at right angles and to be disposed in lapping relation to and to be secured to said main panels, and vertically spaced-apart upper and lower scored triangles on said side flaps to facilitate infolding of the side flaps, said side flaps and bottom being scored medially and in a plane, when in boxed-up form, to enable the latter to be collapsed by infolding into substantially flat form.
 2. An article in accordance with claim 1, wherein the extremities of the blank are provided with handle portions, and wherein the upper scored triangles may be infolded independently of the lower scored triangles to produce a gabled top to the said boxed-up form.

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