March 2, 1948. F. R. CURTISS 2,437,079

CONTAINER

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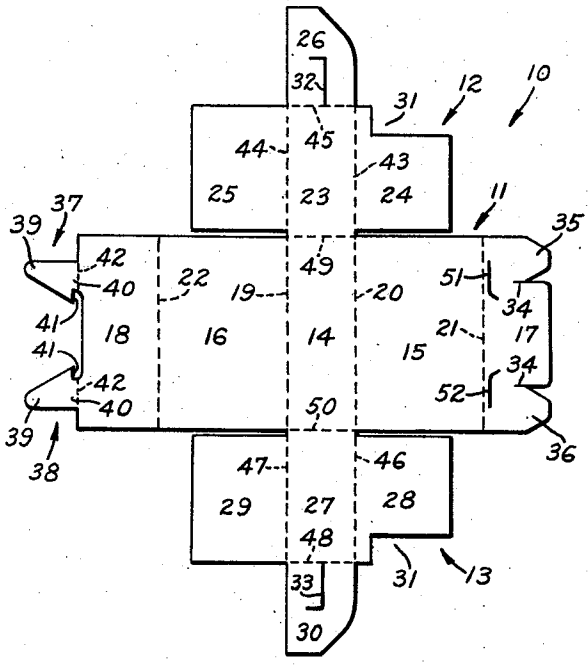

Fig. 1

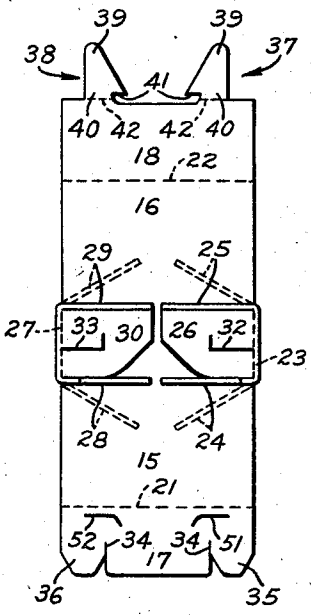

Fig. 2

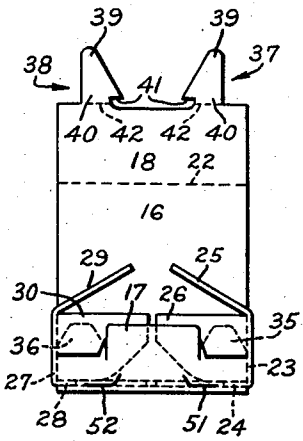

Fig. 3

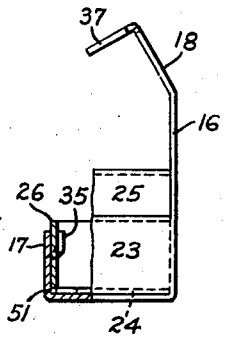

Fig. 4

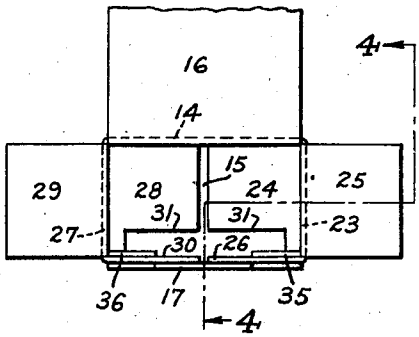

Fig. 5

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CONTAINER

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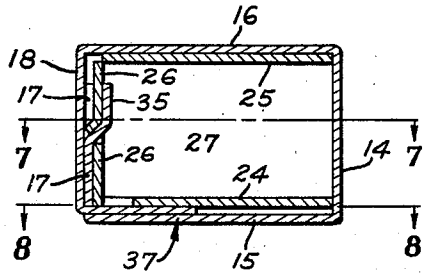

Fig. 6

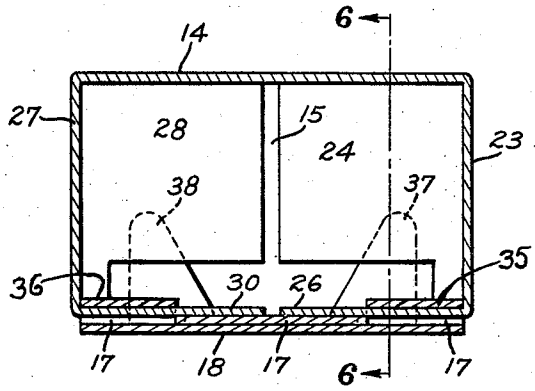

Fig. 7

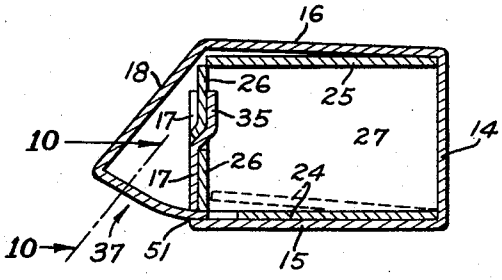

Fig. 9

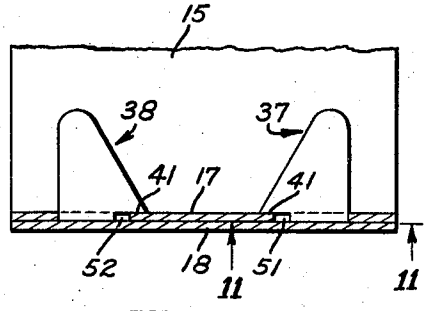

Fig. 8

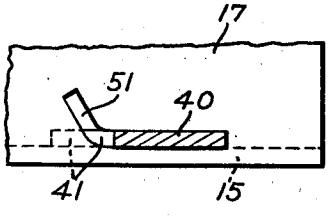

Fig. 11

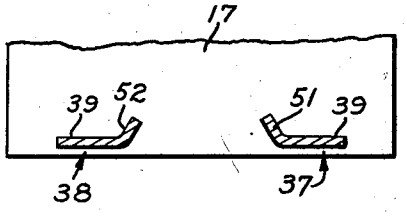

Fig. 10

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CONTAINER

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Application July 11, 1944, Serial No. 544,351

1 Claim. (Cl. 229—16)

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This invention relates to new and useful improvements in containers and has particular relation to a folded container of cardboard, fibre board or the like that is blanked from a sheet and may be sold and shipped in a flat condition but may be easily and quickly set up for use.

An object of the invention is to provide a container especially adapted for the shipment of merchandise, as via parcel post, and which when closed requires no outside wrapping and yet is effectively sealed against pilfering and effectively encloses and protects any merchandise packed therein.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. While the drawings show the invention in detail and certain features are particularly described and pointed out in the specification it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claim.

In the drawings—

Fig. 1 is a top plan view illustrating a blank from which the container of the invention is to be formed, the blank being of cardboard, fibre board, or the like;

Fig. 2 is an elevational view illustrating a suggested first step in setting up the container for use;

Fig. 3 is a similar view illustrating a suggested second step in setting up the container, the same being now ready to receive merchandise;

Fig. 4 is an elevational view taken at right angles to Fig. 3;

Fig. 5 is a plan view of the container as in Fig. 3 but with the inside top flaps and the top or cover pressed open;

Fig. 6 is an enlarged vertical sectional view taken as along the line 6—6 of Fig. 7;

Fig. 7 is a horizontal sectional view taken as along the line 7—7 of Fig. 6;

Fig. 8 is a detailed sectional view taken as along the plane of the line 8—8 of Fig. 6;

Fig. 9 is a sectional view of the scale of Fig. 6 showing a step in the securing of the top or cover of the container in closed and container sealing position;

Fig. 10 is a detail sectional view taken as along the plane of the line 10—10 of Fig. 9 but with the

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securing tabs more fully inserted through their slits; and

Fig. 11 is a further enlarged detail sectional view showing one of the locking tabs in locked position.

Referring in detail to the drawings the container blank generally designated 10, and shown flat in Fig. 1, comprises a main body portion 11 and a pair of wing portions 12 and 13 located one midway each longitudinal edge of portion 11. Body portion 11 includes a series of sections or panels 14, 15, 16, 17 and 18 which when the container is formed comprise, respectively, the back wall, bottom wall, top wall, inner front wall and outer front wall thereof. Thus it will be understood that the body 11 is to be folded on each of the dotted lines 19, 20, 21 and 22.

Wing portion 12 includes an end panel 23, an inner bottom flap 24, an inner top flap 25 and an inner front flap 26. Correspondingly wing portion 13 includes an end panel 27, an inner bottom flap 28, an inner top flap 29 and an inner front flap 30. The bottom flaps 24 and 28 each have an edge portion cut away as at 31 to provide space for the initial movement toward locking positions of a pair of locking tabs as will be set forth.

Flaps 26 and 30 are provided with L-shaped slits 32 and 33, respectively, and the purpose of these slits will appear. The end portions of wall 17 are shaped and the wall is lanced at 34 to define or provide a pair of locking tabs 35 and 36 designed to be passed through the slits 32 and 33, respectively, as will be described. Integral with (although they may be separately formed and attached) the free longitudinal edge of the wall 18 are a pair of similar locking tabs 37 and 38 each including a head 39 and a neck portion 40 whereby a shoulder 41 is formed, the neck portions being of a length approximately equal to the thickness of the stock from which the container is being made.

These tabs 37 and 38 are adapted to be folded relative to the wall 18 as on the dotted lines 42. Additionally flaps 24, 25 and 26 of wing 12 are adapted to be folded along the dotted lines 43, 44 and 45 while the flaps 28, 29 and 30 of wing 13 are adapted to be folded along the dotted lines 46, 47 and 48, respectively, and the wings 12 and 13 are adapted to be folded on the dotted lines 49 and 50. All the various fold lines, indicated by dotted lines in the drawings, are scored in the actual construction. Wall 17 approximately at its fold line is provided with a pair of slits 51 and 52 each including a straight portion and an an-

gularly related or arcuate portion, the overall length of each of these slits being equal to the greatest width of one of the tabs 37 and 38.

The setting up of the container from the blank 10 need follow no precise sequence of steps. A suggested procedure is to fold the flaps 24, 25 and 26 of wing 12 and the flaps 28, 29 and 30 of wing 13 into right angular relationship with the ends 23 and 27 of the respective wings. Then the partly folded wings may be folded on the respective lines 49 and 50 to swing the wings into the zone of the back wall 14. This positions the parts as in Fig. 2.

Next the bottom wall 15 is folded on its line 20 to dispose it under or at the outer side of the inner bottom flaps 24 and 28 and is again folded on the line 21 to dispose the wall 17 at the outer sides of the inner front flaps 26 and 30. As the walls 15 and 17 are so folded into positions the tabs 35 and 36 on the wall 17 or of such wall, are inserted through the L-shaped slits 32 and 33, respectively, in such inner front flaps 26 and 30 thus bringing the parts to the relationships in which they are shown in Fig. 3.

The container is now ready to receive merchandise although the wall 18 may at this time be folded on its fold line 22 and the locking tabs 37 and 38 may be folded on their score lines 42 whereby to bring these parts to the positions in which they appear in Fig. 4. By bending the flaps 25 and 29 and wall 16 outwardly the upper side of the container is left completely open as shown in Fig. 5 so that the container may be easily filled.

When the container has been filled inner top flaps 25 and 29 are folded inwardly to lie on the merchandise and the top or cover, comprising the walls 16 and 18, is folded down to closed position. This necessitates the folding of wall 16 on its fold line 19 to bring such wall (see Fig. 6) into a position over the flaps 25 and 29. Then the wall 18 having previously been folded along line 22 is in position extending partly over the wall 17. The relative positions may be somewhat as in Fig. 9. As shown in that figure the locking tabs 37 and 38 are partly entered into the slits 51 and 52, it being understood that insofar as possible such tabs are moved together. Now the tabs are pushed entirely through the slits and the container is sealed closed.

As this occurs the inner ends of the tabs enter under the edges of the inner bottom flaps 24 and 28 and may force the latter slightly upwardly as suggested by the dotted lines in Fig. 9. Since such flaps are cut away at 31 they do not come against the inner sides of the slits 51 and 52 and do not interfere with the initial movements of the tabs through the slits. The tabs enter through the slits closely adjacent to the inner surface of the bottom wall 15 of the container and lie against such wall when the container is closed.

In order for the tabs to pass through the slits it is necessary for the heads 39 of the tabs to be forced into curved condition, as in Fig. 10, whereby the tabs follow the straight line and the arcuate portions of the slits. The heads of the tabs at their widest portions are of too great a width to pass through the straight line portions of the slits. Then when the heads have passed through the slits the tabs tend to return to their normal or initial flat condition and passing under the flaps 24 and 28 are returned to such condition and the shoulders 41 of the tabs move out of alignment with the curved portions of the slits

as suggested in Figs. 7, 8 and 11. Thus it will be clear that the inserted tabs may not be drawn back through the slits through which they have been inserted.

When the container is closed as suggested the free inner edges of the top flaps 25 and 29 are closely adjacent as in Fig. 2 and the inner edges of the bottom flaps 24 and 28 are similarly related. (See Figs. 2, 5 and 7.) Therefore it is impossible to reach in under the top wall 16 or over the bottom wall 15 and extract any of the contents of the container. Likewise, it is impossible to accomplish pilfiering by the insertion of an instrument beneath or above walls 16 and 15, respectively. The said inner top and bottom flaps cover the merchandise.

Additionally the end walls 23 and 27 are anchored at the rear of the container by being integral with the back 14 and at their front ends the said end walls are anchored since their integral inner end flaps 26 and 30 are secured by the tabs 35 and 36. Thus the end walls cannot be pulled out of place and the top and bottom flaps and the inner front flaps cannot be pulled out to expose the contents of the container to pilfering.

Attention is also directed to the fact that when the container is locked or sealed closed the tabs 37 and 38 being in place prevent the top 16 being raised and also prevent the bottom 15 being pulled down or out unless the tabs 37 and 38 are broken. Since the bottom 15 cannot be pulled down and the tabs 35 and 36 cannot be pulled out it will be clear that such flaps 26 and 30 cannot be released from the inner front wall. Thus when the tabs 37 and 38 have been inserted into looking positions through the slits 51 and 52 the container cannot be opened except by tearing or breaking of the tabs 37 and 38 and in addition the contents of the container cannot be pilfered.

Owing to the fact of their having been scored along the lines 42 and then folded and to the fact that they are relatively narrow in their neck portions 40 the tabs 37 and 38 may be torn away without great difficulty. The scoring along the lines 42 for the tabs 37 and 38 is cut scoring although they may be perforated or otherwise treated to weaken their connections with the wall 18 so that on any tampering with these tabs or the connections established by them the tabs will readily become broken whereupon the consignee of the package will be clearly notified to be on his guard as the package has been tampered with. It will be understood that the invention is not limited to the use of two tabs as shown as a single tab or a large multiple of tabs may be used as may be necessary in any particular instance.

Having thus set forth the nature of my invention, what I claim is:

A blank for a folding carton comprising foldably joined front, top, rear and bottom panels; a pair of end panels foldably joined to opposed edges of said rear panel, a bottom flap foldably joined to each of said end panels and adapted to substantially cover said bottom panel interiorly of the erected container, and a clearance recess in each of said bottom flaps at the outer edge thereof, including a front locking panel foldably related to an edge of said bottom panel and having a pair of tabs for engaging a pair of locking flaps foldably joined to said end panels whereby said box may be secured in erected but open top condition for filling, and a

pair of locking slits provided in the fold line between said bottom panel and said locking panel, including a pair of tabs foldably joined to a free edge of said front panel and insertable into said locking slits by virtue of the clearance provided by said clearance recesses in said bottom flaps.

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