June 24, 1930. A. E. BROWN 1,767,734

FOLDABLE BOX

Filed Feb. 21, 1929

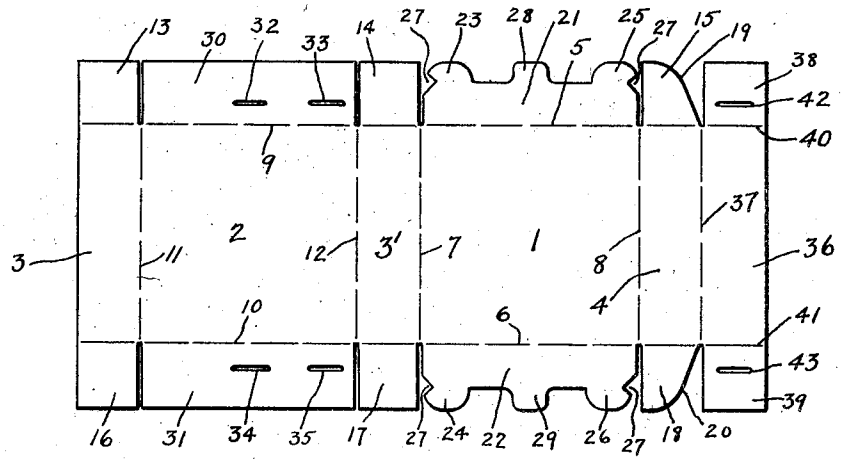


Fig. 1

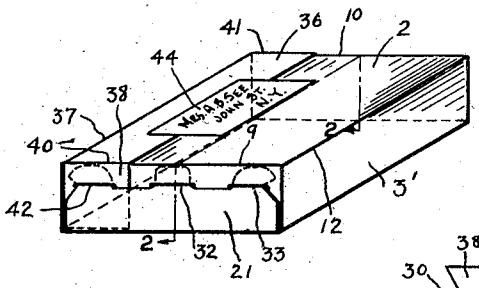


Fig. 2

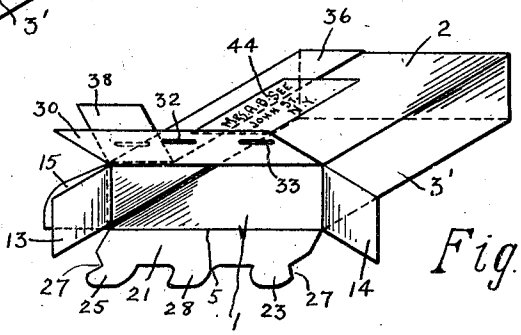
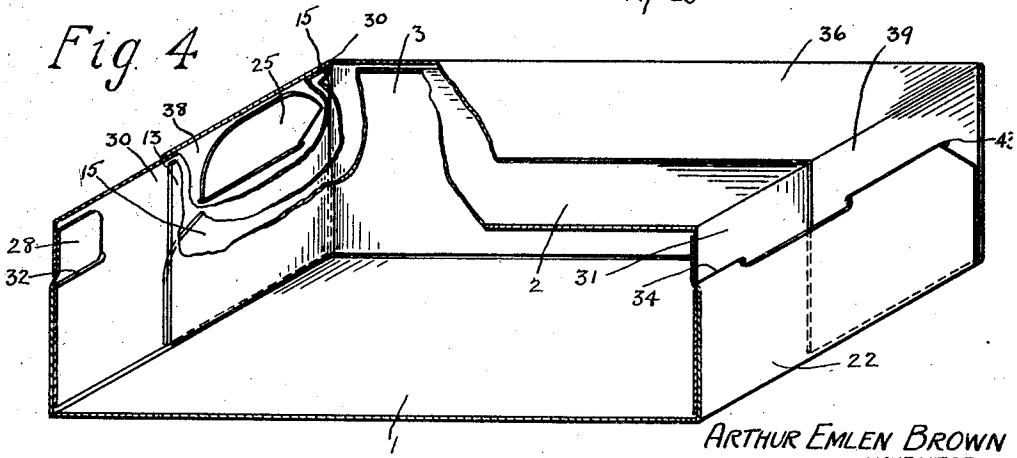


Fig. 3

Fig. 4



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UNITED STATES PATENT OFFICE

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FOLDABLE BOX

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This invention relates to improvements in foldable boxes, and more particularly deals with boxes of the type which are formed from a single blank of paper, cardboard, or similar sheet material, which by proper folding produces a neat and attractive container having means thereon for locking and maintaining the folded blank in assembled condition.

An object of my invention is to provide an extremely simple and inexpensive product which may be easily and quickly disassembled to gain access to the contents of the receptacle.

An additional object is to provide a box which is provided with locking means, some of which can be disengaged for the purpose of permitting disassembly of one end of the box without disturbing the remaining portion of the box, so that inspection of the contents of the box may be readily had without the necessity of the total disassembly thereof.

Another object of the present invention is to provide a box in which one of the side walls may likewise be pulled out so that the contents of the box can be inspected.

An additional object of the present invention is to provide a box in which only a single gumming is necessary to maintain the box in assembled relation and the box is so formed that this single gumming is applied to the rear face thereof, thereby leaving smooth, unbroken and unobstructed front faces for the box which may be fully utilized for advertising or other purposes, the gumming means employed being preferably in the form of a store label carrying the customer's address, so that the label performs a dual function, that is, it secures the box in assembled relation and affords a space for the customer's address.

A still further object is to provide a box having firm closures at the ends thereof so that when the box is partially disassembled the remaining or disassembled portions of the box will be rigidly locked together, thereby permitting the partial disassembly without disturbing the remaining locking elements.

Other advantages and objects of the invention will be manifest from a perusal of the following description in connection with the accompanying drawings, which form part hereof and in which

Fig. 1 is a plan view of the blank of sheet material from which the box is constructed.

Fig. 2 is a reversed perspective view of the box in assembled condition, portions thereof being shown in dotted lines to indicate the manner of assembly.

Fig. 3 is a view similar to Fig. 2, with one end of the box disassembled so as to permit access and inspection of the contents thereof.

Fig. 4 is a longitudinal central sectional view taken along the line 2—2 of Fig. 2, with portions thereof broken away so as to show the interior construction and relation of parts.

Referring more particularly to the drawings, the single blank of sheet material from which the box is constructed comprises a top panel 1, a bottom panel 2 and side panels 3, 3′ and 4. The top and bottom panels 1 and 2 are here shown as being of rectangular formation, but it is believed to be obvious that the form is immaterial. The top panel 1 is produced by scoring the blank along the lines 5, 6, 7 and 8, and the bottom panel 2, which is of a form similar to the top panel 1, is produced by scoring the blank along the lines 9, 10, 11 and 12.

From an inspection of Fig. 1 of the drawing, it will be seen that intermediate the score lines 7 and 12 is one of the side panels, 3′, integrally connected with the top and bottom panels and that the side panels 3 and 4 are integrally connected to the bottom and top panels, respectively. On each of the side panels 3, 3′ and 4, I provide the corner flaps 13, 14, 15, 16, 17 and 18, which are scored to permit the said flaps to be bent at right angles with relation to the said side panels, it being noted that the corner flaps 13, 14, 16 and 17 are indicated as being of rectangular formation, and that the corner flaps 15 and 18 are provided with rounded corners as indicated at 19 and 20,

the purpose of which will be hereinafter described.

Extending from opposite ends of the top panel 1 are end panels 21 and 22, which are provided with spaced ears 23, 24, 25 and 26, at opposite ends of the end panels 21 and 22, and each of these ears is provided at one of its marginal edges with an undercut portion 27 forming an interlocking shoulder.

Intermediate the ears 23 and 25 is the tongue 28, and intermediate the ears 24 and 26 I provide a tongue 29, so that it will be seen that I provide a plurality of locking ears or tongues which are spaced equidistantly throughout the entire length of the end panels 21 and 22, thereby providing when the box is in assembled relation uniform locking or securing of the ends of the box throughout the entire length thereof. Integrally formed with the bottom panel 2 are the end panels 30 and 31, which are provided with elongated slots 32, 33, 34 and 35, which are of sufficient length to snugly engage a pair of locking tongues on the end panels 21 and 22 when the box is assembled.

The side panel 4 carries an extension panel 36 produced by scoring the blank along the line 37 and is provided at opposite ends with foldable flaps 38 and 39, produced by scoring the blank along the lines 40 and 41, and each of the flaps 38 and 39 is provided with an elongated slot 42 and 43 respectively, which are adapted to receive the remaining locking tongues or ears on the end panels 21 and 22.

Having now described in detail the particular construction of the various parts, the manner of assembling the box is as follows:

The top and bottom panels 1 and 2 are folded along the lines 7 and 12 so as to extend at right angles to the side panel 3', and the side panel 3 is bent inwardly at right angles to the bottom panel 2 and has its edge located along the score line 8 of the top panel 1. The side panel 4 is then bent at right angles to the top panel 1 so as to overlap the side panel 3. Thereafter, the extension flap 36 is bent at right angles to the side panel 4 and overlaps the bottom panel 2, as clearly shown in Figs. 2, 3 and 4.

When this has been done, it will be seen that the blank has been folded to substantially tubular formation with the end panels and corner flaps extending in the plane of the respective panels to which they are attached. To complete the assembly of the box, the corner flaps are next folded inwardly at right angles to the side panels, and the end panels 30 and 31 are folded downwardly at right angles to the bottom panel, while the end panels 21 and 22 are folded upwardly so as to overlap the end panels 30 and 31, thereby closing the ends of the box.

It will be noted from an inspection of Fig. 3 that the extension panel 36 overlies the bottom panel 2 and that the foldable flaps 38 and 39 are adapted to be folded along the score lines 40 and 41, which coincide with the fold lines 9 and 10 on the bottom panel 2, so that when in folded condition the foldable flaps 38 and 39 form a portion of the end closures, and that the slots 42 and 43 are positioned so as to receive the locking ears 25 and 26, which are adapted to be passed therethrough with the cut-out portion 27 of said flaps engaging one end of the slots to prevent accidental displacement thereof.

It will further be seen that when in folded position the tongues 28 and 29 register with the slots 32 and 34 in the end panels 30 and 31, and that the locking ears 23 and 24 register with the elongated slots 33 and 35 in the end panels 30 and 31.

The ears 23 and 24 have likewise been described as being provided with undercut portions 27 which are also adapted to engage the ends of the slots 33 and 35 in a manner similar to that described in connection with the ears 25 and 26, thereby preventing accidental disengagement of the said locking ears.

The box has now been completely assembled, and it will be readily apparent that by gumming the extension flap 36 along its edge, it may be adhesively secured to the bottom panel 2, thereby preventing disassembly of the box; or, as illustrated in Figs. 2 and 3, the extension flap 36 may be secured to the bottom panel 2 by means of a store label 44 which is adapted to bear the address of the customer or other suitable indicia, and it is to be noted that the only gumming employed in assembling the box is on the bottom thereof, thereby leaving the front face of the box entirely unobstructed, so as to permit complete use thereof for suitable advertisement or ornamentation.

By providing the extension panel 36 with the elongated slots 42 and 43, which will receive the locking ears 25 and 26, it will be seen that in order to partially disassemble the box it is merely necessary to release the locking ears 25 and 26 from the slots 42 and 43, and upon breaking the adhesive means 44 the extension flap 36 and side panel 4 may be pulled down so as to permit ready inspection of or access to the contents of the box. In order to facilitate this partial disassembly, the corner flaps 15 and 18 are provided with the rounded corners 19 and 20, which permit the same to slide easily from a position between the end panels 30 and 31 and the corner flaps 13 and 16, in which position they lie when the box is completely assembled, and that it is unnecessary, therefore, to further disassemble the box, the other locking tongues and ears remaining in interengaging position.

The partial disassembly of the box as described is made possible by the firm closure

of the end panels, and this firmness is produced by providing the locking ears 23 and 24 with the undercut portions 27.

It will also be seen from an inspection of Fig. 3 that the box may be partially disassembled at either end for inspection or access, and without the necessity of disturbing the adhesive means employed to secure the extension panel 36 to the bottom panel 2, and it is believed to be readily understood that when the locking ears 25 and 26 have been disengaged from the elongated slots 42 and 43, the box may be quickly disassembled in its entirety after the adhesive seal 44 has been broken.

From the foregoing description, it will be seen that I have provided a very inexpensive and attractive container which may rapidly and easily be either totally or partially dis-assembled and that I have provided a structure in which the box is securely locked in folded condition by means of a single adhesive fastening means, as distinguished from known constructions wherein a multiplicity of adhesive connections are necessary, and that the blank from which my box is formed is stamped or cut from a single blank, so that it may be shipped to the purchasers in a flattened condition and yet be assembled for use with great facility.

What is claimed is:

1. A foldable box comprising a top panel, a bottom panel, an intermediate side panel connecting the top and bottom panels, overlapping side and end panels, an extension on one of said side panels forming a flap adapted to overlap the bottom panel of the box when assembled, foldable flaps on said extension having openings therein, and locking tongues on a pair of the side panels engaging said openings when the box is assembled to secure the extension in position.

2. A foldable box comprising top, bottom, side and end panels, one pair of end panels each being provided with a plurality of ears having locking shoulders and an intermediate locking tongue, the other pair of end panels each having a plurality of slots therein to receive one of the ears and a locking tongue, and an extension on one of the side panels provided with openings adapted to receive the other locking tongues when the box is assembled.

3. A foldable box formed of a blank comprising top and bottom panels and an intermediate side panel, side panels at opposite ends of said blank, one panel of which is provided with flaps having rounded corners, said side panels being adapted to be folded into overlapping relation, an extension on one of said side panels providing a flap engaging the bottom panel of the box when assembled, folding flaps on said extension having slots therein, a pair of end panels extending from the top panel and each provided with spaced ears provided with locking shoulders and an intermediate locking tongue, a pair of end panels extending from the bottom panel and each having a plurality of openings therein, the said pairs of end panels being adapted to be folded into overlapping relation, the openings in each of the end panels which extend from the bottom panel being adapted to receive one of the said locking ears and one of said tongues to secure the end panels in closed position, and each of the openings in the flaps of the extension being adapted to receive the other locking ears on the end panels secured to the top panel, whereby the extension is locked in position.

In witness whereof I have hereunto set my hand this 20th day of February, 1929.

ARTHUR EMLEN BROWN.