June 24, 1930. A. E. BROWN 1,767,733

FOLDABLE BOX

Filed Feb. 21, 1929

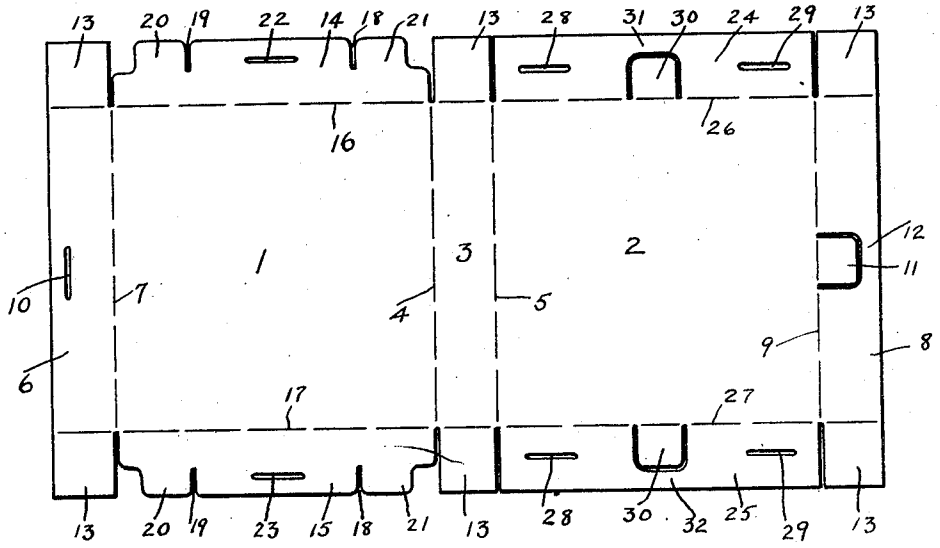


Fig. 1

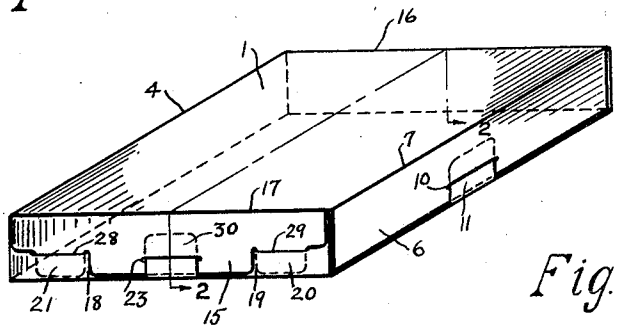
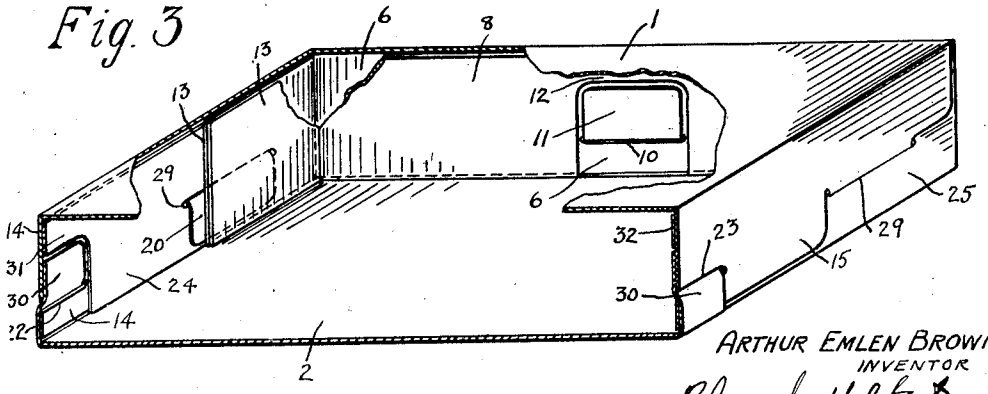


Fig. 2

Fig. 3



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UNITED STATES PATENT OFFICE

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FOLDABLE BOX

Application filed February 21, 1929. Serial No. 341,582.

This invention relates to improvements in foldable boxes, and more particularly has to do with boxes which are formed from a single blank of sheet material such as paper, cardboard, or the like.

An object of the present invention is to provide a box which when folded to normal conditions of use requires no external fastening means such as string, gummed tape or the like to maintain the same in folded condition.

Another object of the present invention is to provide a box of simple, efficient and durable construction which is capable of receiving relatively rough handling without mutilation.

An additional object is to provide a box formed from a blank which may be shipped in a flat condition and which has the locking flaps, tongues, etc., punched directly from the stock and adapted to lie in the same plane as the stock, so that in shipment of the blank there are no projecting portions which are liable to be torn or otherwise injured and which when assembled produces a firm closure without the necessity of gluing or otherwise adhesively securing any of the parts to each other.

Other objects and advantages of the present construction will be clearly apparent from the following description, it being understood that minor variations may be resorted to without departing from the scope or spirit of the present invention as defined in the appended claims.

In describing the present invention, reference will be had to the accompanying drawings, forming a part hereof, and in which,

Fig. 1 is a plan view of the blank employed in carrying out my invention.

Fig. 2 is a perspective view, portions thereof being shown in dotted lines to indicate the manner of assembling.

Fig. 3 is a sectional view along the line 2—2 of Fig. 2, with the top portion of the box broken away to more clearly illustrate the interior construction.

Referring more particularly to the drawings, I provide a top section 1 and a bottom section 2, here illustrated as being of rectangular formation, connected by means of a side wall 3 formed by scoring the blank along the lines 4 and 5. The opposite side wall of the box construction is provided by means of the section 6 produced by scoring along the line 7, and which forms an extension of the top wall 1 and cooperates therewith to produce the said side wall, and the section 8, produced by scoring along the line 9, and which forms an extension of the bottom section 2. It will be readily understood from the foregoing that the top and bottom sections 1 and 2 are folded at right angles with reference to the side wall 3 and that the side wall sections 6 and 8 are bent along the score lines 7 and 9, so that the side wall section 8 underlies the side wall section 6, thereby providing at one side of the box a wall comprising a plurality of layers, which produces a rigid structure.

In the side wall section 6 I provide an elongated slot 10 which is adapted to receive a tongue 11 cut out of the side wall section 8 and extending from the score line 9 to a point adjacent the edge of the side wall section 8. By forming the tongue 11 in the manner described, it will be seen that a section of the blank immediately to one side of the opening produced by the tongue 11, as indicated at 12, remains integral with the side wall section 8, thereby preserving the strength of the box where it would otherwise be weakened due to the punching out of the tongue 11.

It will be understood from the foregoing that when in folded condition the side wall section 6 overlaps the side wall section 8, which has been bent at right angles to the bottom section 2, and that the tongue 11 extends in a horizontal position. In order to secure the side walls 6 and 8 together, it is then merely necessary to bend the tongue 11 over the face of the side wall section 6 and insert the tongue through the slot 10, in order to securely lock the side wall sections together.

I have illustrated the tongue 11 as being of substantially rectangular formation, but it is to be understood I may employ later-

ally projecting ears on the said tongue, forming in effect an arrowhead, the shoulders of which are adapted to engage the walls of the side section 6 after the same has been passed through the opening 10.

Integral with the side wall 3 and the side wall sections 6 and 8 are the usual corner flaps, indicated at 13, which are adapted to be folded inwardly at right angles to the side wall sections 3, 6 and 8, thereby partially forming an enclosure for the box at opposite ends thereof.

To complete the formation of the end walls of the box, I provide laterally extending flaps 14 and 15 produced by scoring the blank forming the top section 1 along the lines 16 and 17, and when the box is in folded position these flaps 14 and 15 are positioned to extend downwardly at right angles with reference to the top section 1, as clearly indicated in Fig. 2.

The end flaps 14 and 15 are slotted as at 18 and 19 to form interlocking tongues 20 and 21, and intermediate the tongues 20 and 21 the end wall flaps 14 and 15 are provided with elongated slots 22 and 23, the purpose of which will be hereinafter described.

On the bottom section 2 I provide laterally extending flaps 24 and 25, produced by scoring the bottom section 2 along the lines 26 and 27, it being understood that when in assembled position the flaps 24 and 25 extend vertically upward at right angles to the bottom section 2, as is also clearly illustrated in Fig. 2.

Each end section is provided with a plurality of elongated slots, as indicated at 28 and 29, and intermediate the slots 28 and 29 I provide a tongue 30 punched from the said flaps 24 and 25 and extending from the score lines 26 and 27 to a point adjacent the edge of the said flaps. As previously described in connection with the tongue 11, the tongues 30 are punched directly from the side flaps 24 and 25, thereby leaving the sections 31 and 32 to one side of the tongues 30 so that the flaps 24 and 25 retain their rigidity and are not weakened by the formation of the tongues 30.

The manner in which the box is assembled is as follows:

Having folded the top and bottom sections 1 and 2 at right angles to the side wall section 3 and having engaged the tongue 11 with the slot 10 so as to secure the side wall sections 6 and 8 in position, as illustrated and described, the corner flaps 13 are bent inwardly at right angles to the side wall sections, and the end wall flaps 24 and 25 are bent upwardly along the score lines 26 and 27 at right angles to the bottom section 2, the tongues 30, however, remaining in horizontal position. The end wall sections 14 and 15 are then bent downwardly vertically at right angles to the top section 1 and the tongues 20 inserted in the elongated slots 29, while the tongues 21 are inserted in the elongated slots 28. Thereafter, the tongues 30 are bent upwardly over the face of the end wall sections 14 and 15 and inserted through the slots 22 and 23 of the end wall sections, when the box will be completely formed, with the end walls securely locked in position without the necessity of employing glue, string, gummed tape or any other external fastening means.

As in the case of the tongue 11, the tongues 30 on the bottom section 2 may be formed of arrowhead construction, so that when passed through the openings 22 and 23 the shoulders of such construction will prevent dislodgment of the tongues from the openings. It is believed to be clear from the description that the box is held in tubular formation during the assembling operation by means of the single fastening elements 10 and 11 at one side of the box, and that the end walls of the box are interlocked at three spaced points along the ends thereof, so that a rigid end wall construction is produced.

It will also be apparent that by providing a box of this character the top and bottom walls are unobstructed and can be fully utilized for displaying advertising or similar printed matter, since the surfaces presented are unbroken throughout the entire length and width of the box.

From the foregoing it is believed to be clearly apparent that I have produced a box which is of exceedingly simple character and which is formed from a single blank of suitable material and which permits the box to be very quickly and easily assembled and locked so that it can be handled roughly without disengaging the interlocked portions thereof, and which forms a comparatively rigid construction, and furthermore, that the blanks from which the present invention is formed may be shipped in a flat condition, thereby eliminating the possibility of injury to the blanks in transit.

What is claimed is:

1. A box construction comprising a single blank of sheet material having top, bottom, side and end sections, the end sections being carried by the top and bottom sections and adapted to be folded into overlapping relation, the end sections on top having a plurality of spaced tongues and a slot therebetween, and the end sections on the bottom having a plurality of spaced slots to receive the tongues on the end sections carried by the top and a tongue on the end section carried by the bottom adapted to pass through the slot in the end section carried by the top.

2. A box construction formed of a single blank of sheet material having top, bottom, side and end sections, the side sections at one side of the box comprising overlapping

panels, one of which is provided with a slot intermediate of its length and the other carrying a tongue adapted to pass through said slot when the said side sections are overlapped, and the end sections being carried by the top and bottom sections and adapted to be folded into overlapping relation, the end sections on the top having a plurality of spaced tongues and a slot therebetween, and the end sections on the bottom having a plurality of spaced slots to receive the tongues on the end sections carried by the top, and a tongue on the end section carried by the bottom adapted to pass through the slot in the end section carried by the top.

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

ARTHUR EMLEN BROWN.