March 4, 1941. N. ROSENTHAL 2,233,874

FOLDING BOX

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Fig. 1.

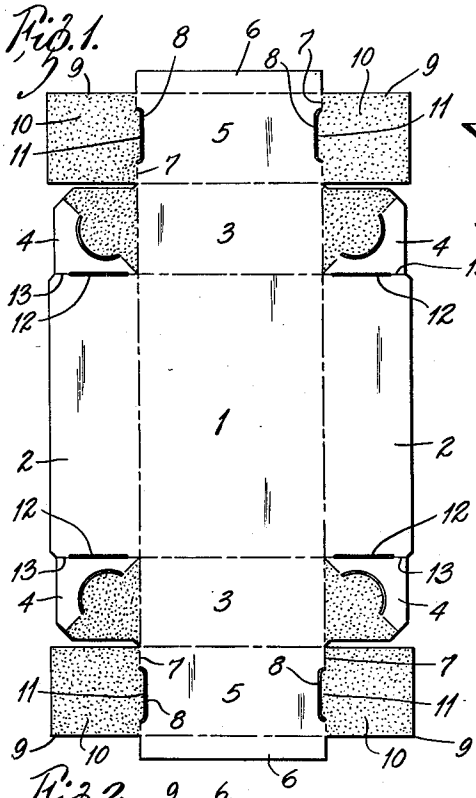


Fig. 2.

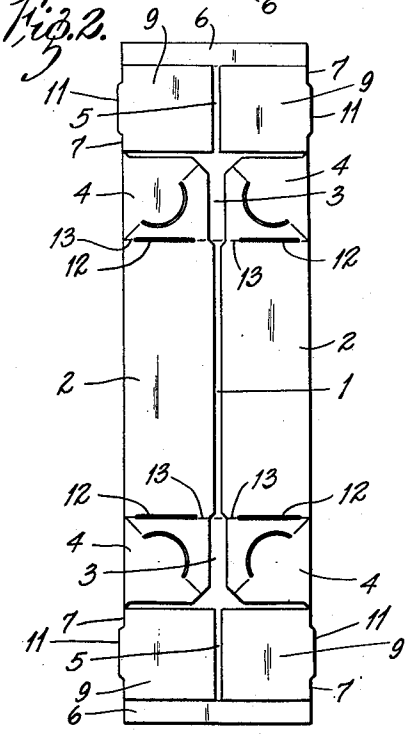


Fig. 3.

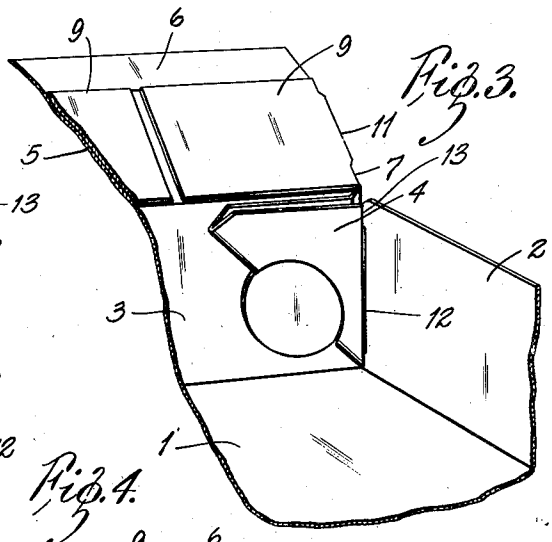
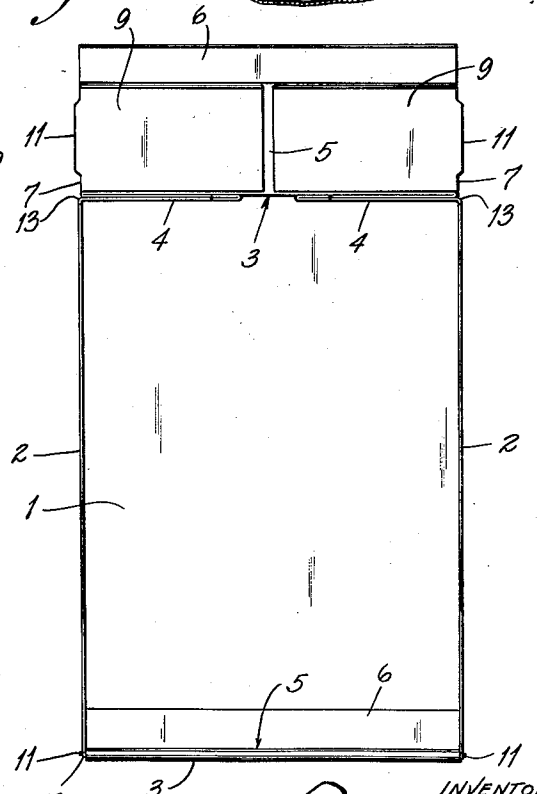


Fig. 4.



INVENTOR:
Nathan Rosenthal
by Parmenter Parmenter & Brumley
HIS ATTORNEYS.

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FOLDING BOX

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Fig. 5.

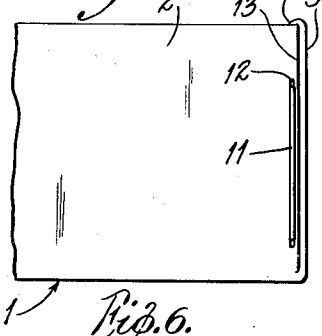


Fig. 6.

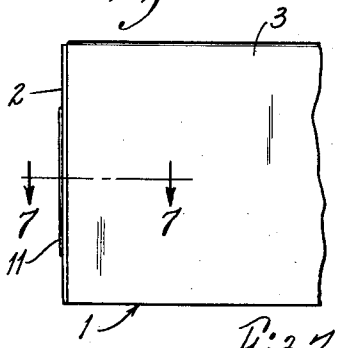


Fig. 7.

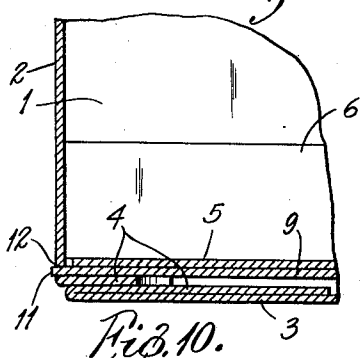


Fig. 10.

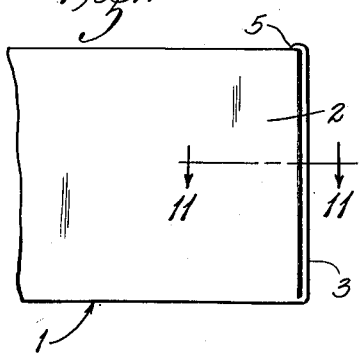


Fig. 8.

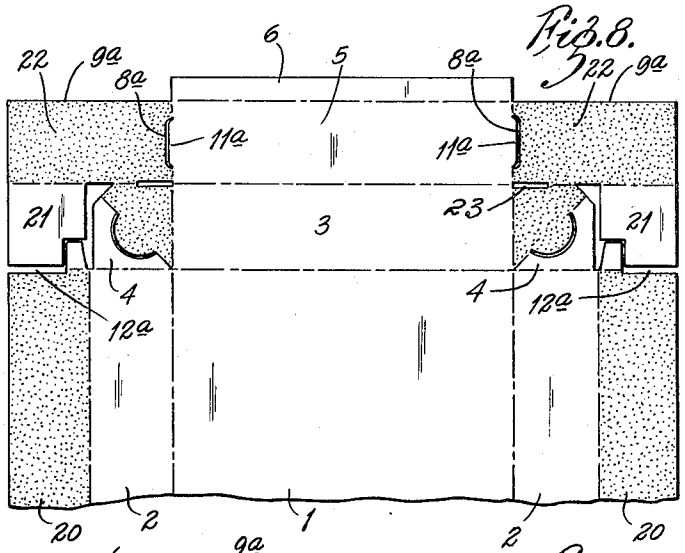


Fig. 9.

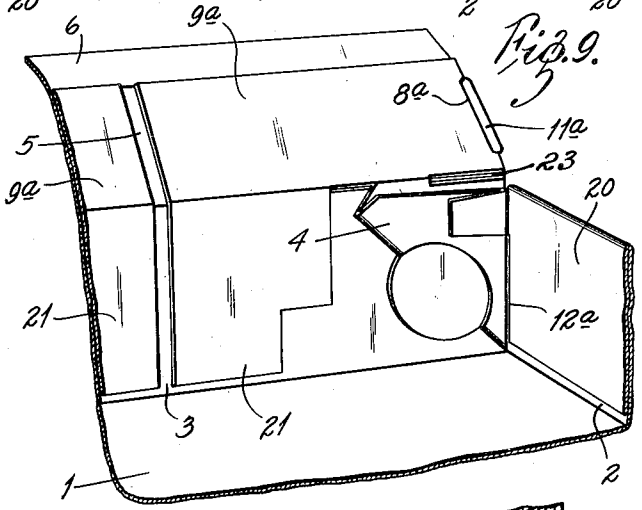
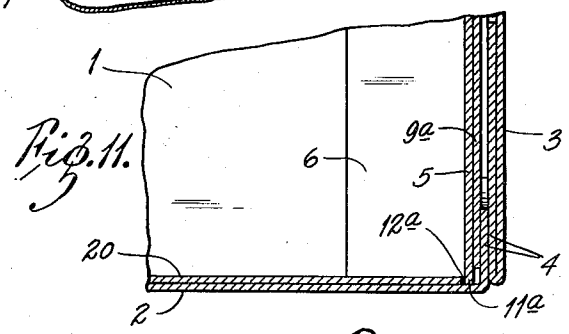


Fig. 11.



INVENTOR:
Nathan Rosenthal
by Parker Parker & Brumbaugh
HIS ATTORNEYS.

Patented Mar. 4, 1941 2,233,874

UNITED STATES PATENT OFFICE

2,233,874

FOLDING BOX

Nathan Rosenthal, Ladue, Mo., assignor to Rosenthal Paper Company, St. Louis, Mo., a corporation of Missouri

Application April 27, 1938, Serial No. 204,509

1 Claim. (Cl. 229—31)

My invention relates to folding boxes of the type wherein the sides and ends are connected by integral corner portions that are creased diagonally to form a bellows-fold and is in the nature of an improvement on the construction of my Patent No. 2,036,542 dated April 7, 1936. The principal object of the present improvement is to strengthen the end wall construction of such boxes without interfering with the automatic setting-up feature thereof.

The invention consists principally in providing the end locking flap with reinforcing strips which are folded over against said locking flap to brace the end wall construction and which are so arranged as to provide projecting wedging or locking tongues. The invention further consists in the folding box and in the parts and combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, wherein like reference characters refer to like parts wherever they occur,

Fig. 1 represents a blank suitable for the manufacture of my box, the creasing or scoring thereof being shown by dotted lines and the portions that are adhesively secured together being indicated by stippling;

Fig. 2 represents a box in its folded or knocked-down condition;

Fig. 3 is an isometric projection of a corner portion of the box after the main side and end flaps have been raised, but prior to the swinging down of the end locking flaps;

Fig. 4 is a plan view of the box showing one end set-up and showing the other end at the stage of the setting-up operation represented by Fig. 3;

Fig. 5 is a side elevation of one end portion of the assembled box;

Fig. 6 is an elevation of a corner portion of one end of the box;

Fig. 7 is an enlarged sectional view on the line 7—7 in Fig. 6;

Fig. 8 represents the blank of a modification;

Fig. 9 is an isometric projection of a partially assembled modified box;

Fig. 10 is a side elevation of an end portion of a box; and

Fig. 11 is an enlarged sectional view on the line 11—11 in Fig. 10.

The box shown in Figs. 1 to 7 inclusive is quite similar to the box shown in Figs. 1 to 4 of said Patent No. 2,036,542, except that the inner side flaps of said patented box may be omitted, as shown in the drawings. The blank comprises a single piece of pasteboard or other suitable material which is divided up by score or crease lines into a bottom panel 1, side walls 2, end walls 3, diagonally scored and slotted corner members 4 integral with the side walls 2 and end walls 3, end locking flaps 5 and bottom locking flaps 6 integral with said end locking flaps 5 and adapted to fold over against the bottom 1 of the box in set-up position.

The present invention is concerned with reinforcing and strengthening the end locking flaps 5. Integral with said end locking flaps 5, but set off by score lines 7 and by slots 8, are reinforcing strips 9 which are folded over against the end locking flaps and adhesively secured thereto, as indicated by the stippling 10.

As shown in Fig. 1, each slot 8 is offset into the body of the end locking flap 5; so that, when the reinforcing strips are folded over against the end locking flap along the score lines 7, tongues 11 are formed which project outwardly beyond the end locking flap 5 and the reinforcing strips 9. These locking tongues 11 have a wedging action against the sides 2 of the box and, in addition, a positive interlock may be formed by providing vertical slots 12 at the ends of the side walls, as along the score line 13 that separates each side wall 2 from the corner member 4. The locking tongues 11, by extending into these slots 12, form a positive interlock.

In the modified construction shown in Figs. 8 to 11 inclusive, the box has side flaps 20 in addition to the side walls 2 and the reinforcing strips 9a extend the full width of the side walls 2 and side flaps 20 and, in addition, have extensions 21 overlapping the corner members 4 in the blank. The reinforcing strips 9a are adhesively secured to the end locking flaps 5, as indicated by the stippling 22, but the extensions 21 are left free. When the box is assembled, these extensions 21 rest against the end wall 3, thus providing a further end wall brace in addition to said reinforcing strips 9a. Slots 23 may be provided along a portion of the line between said reinforcing strips 9a and the corner members 4, thus facilitating the setting-up of the box and the folding of the end locking flap into locking position.

In said modified construction, the slot 8a that forms the locking tongue 11a may be offset into the reinforcing strip 9a, thus forming the locking tongue 11a on the end locking flap 5 instead of on the reinforcing strip 9a. In this construction also, the slot or recess 12a for said locking tongue 11a may be formed by cutting away a portion at the end of the side flap, thus dis-

pensing with a slot extending entirely through the side wall of the box.

The above described construction greatly strengthens the end wall of the box, but does not interfere with the automatic setting up of the box. The reinforcing or bracing members are formed from material that would otherwise be wasted; so that there is little, if any, increased expense involved in obtaining the additional strengthening effect. Obviously, the corner construction and other features of the box illustrated may be changed in many particulars without departing from my invention and I do not wish to be limited to the precise construction shown.

What I claim is:

A folding box comprising side walls, end walls, bellows-fold corner members integrally connecting them, end locking flaps secured to said end walls, bottom locking flaps secured to said end locking flaps and reinforcing strips integrally connected to the ends of said end locking flaps by score lines, there being a slit offset into each reinforcing strip with respect to each of said score lines, thus providing a projecting tongue on each of said end locking flaps and said side walls being provided with elongated slots for interlocking engagement with the respective tongues.

NATHAN ROSENTHAL.