E. W. LABOMBARDE.

BLANK FOR FOLDING BOXES.

APPLICATION FILED OCT. 6, 1909.

1,021,874.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

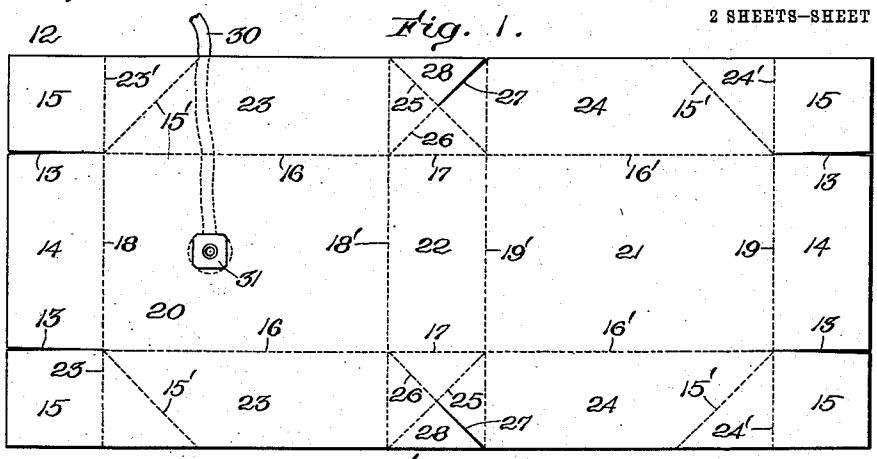


Fig. 2.

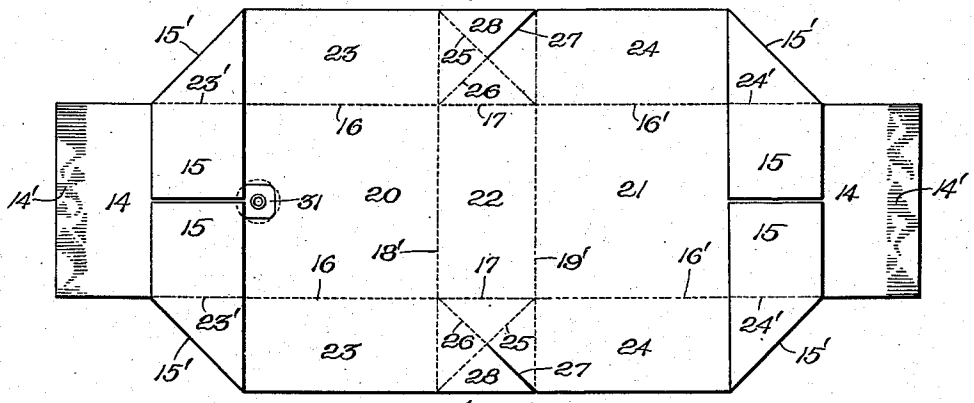


Fig. 3.

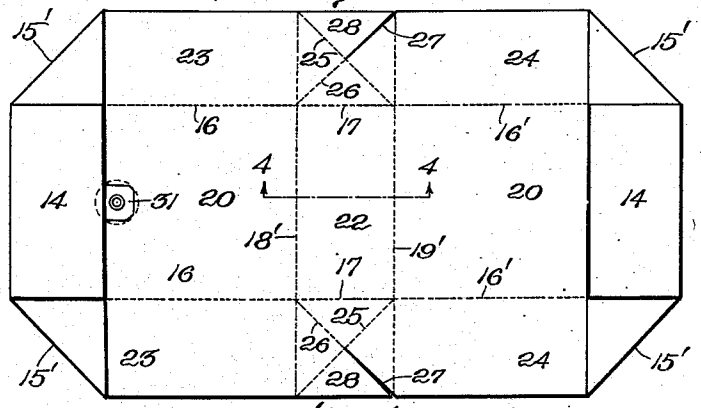
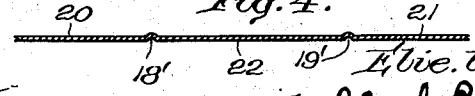


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

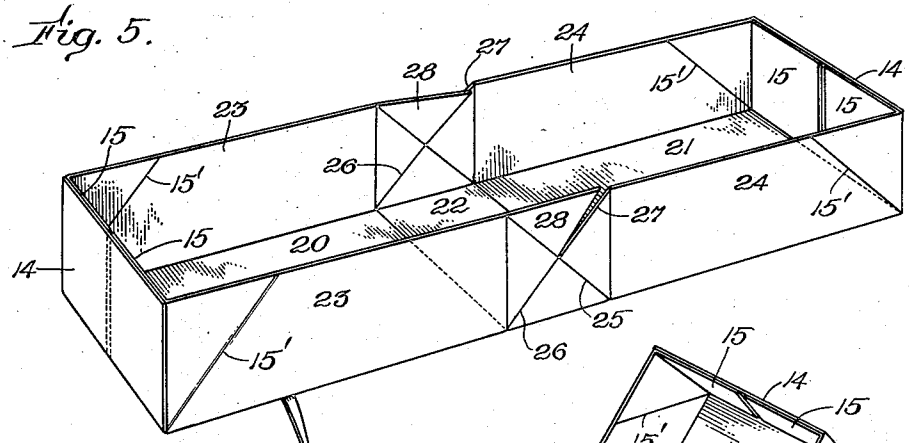


Fig. 10.

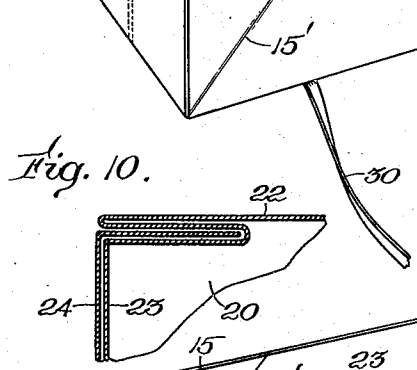
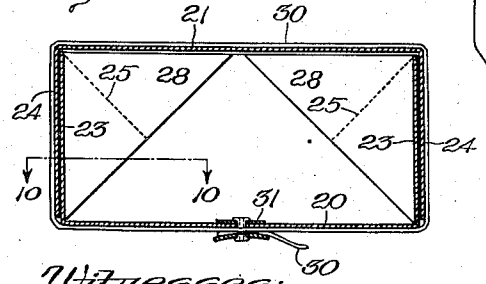


Fig. 6.

Fig. 9.

Fig. 8.



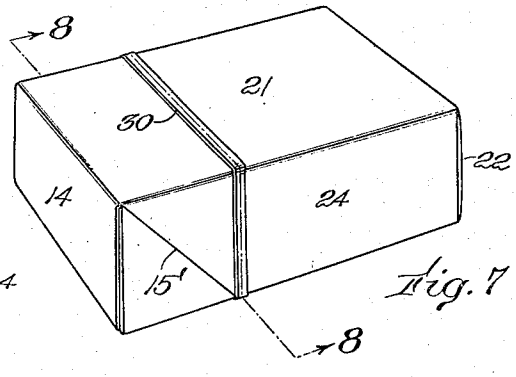


Fig. 7.

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UNITED STATES PATENT OFFICE.

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BLANK FOR FOLDING BOXES.

1,021,874. Specification of Letters Patent. Patented Apr. 2, 1912.

Application filed October 6, 1909. Serial No. 521,399.

To all whom it may concern:

Be it known that I, ELIE W. LABOMBARDE, of Nashua, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Blanks for Folding Boxes, of which the following is a specification.

This invention relates to folding boxes, and its object is to provide a blank adapted to be folded so that a plurality of open boxes may be arranged in a pile or bank, of which each box may be in flat condition when so arranged, and which may be otherwise folded into the form of a closed box.

It is desirable that the blanks be adapted to be folded into the form of boxes without requiring the use of coöperative interlocking tabs and slits, and that the boxes when arranged in a pile be ready for immediate use without requiring manipulation other than mere folding.

To this end the invention provides a blank which may first be partly folded and glued at such points that it may be stacked in a flat condition ready for immediate use.

Another object of the invention is to construct the blank in such form as to produce, when folded, a box of neat appearance. Folding boxes of this type have hitherto been provided with interlocking tabs and slits of irregular shape, which are exposed when the box is closed, and which therefore mar the appearance of the box. The present invention provides a box whose exposed edges all coincide with folded corners when the box is closed. The blank is, moreover, of such form as to provide portions which overlap when the box is closed, and which constitute means for holding the box in closed condition. Auxiliary means may be provided, if desired, for fastening the box when closed.

A further object of the invention is to form the blank in such a manner that those parts which are adapted to overlap when the box is closed shall normally seek their appropriate positions, so that the box may be readily closed without awkward manipulation.

To these ends the invention is embodied in a folding blank illustrated upon the accompanying drawings and described in the following specification.

Figure 1 represents a plan view of a folding blank provided with slits and with scored lines to facilitate folding. Fig. 2 represents the same blank in plan view, showing the first stage of folding in preparing the blank for commercial use. Fig. 3 represents a plan view of the blank in one condition in which it is adapted to be arranged in a pile with other blanks, and in which it is ready for immediate use. Fig. 4 represents a section on line 4—4 of Fig. 3. Fig. 5 represents a perspective view of the blank as folded to form an open box. Fig. 6 represents a perspective view of the box of which the cover is between its open and closed positions. Fig. 7 represents a perspective view of the box folded to closed condition. Fig. 8 represents a cross-section on line 8—8 of Fig. 7. Fig. 9 represents a perspective view of a fragment of the box in slightly open condition, as viewed from front to rear. Fig. 10 represents a section on line 10—10 of Fig. 8.

The same reference characters indicate the same parts in all the figures.

On the drawings, 12 indicates a folding blank of rectangular outline. The blank is provided with slits 13 at opposite ends which separate the end flaps 14 from corner flaps 15. The blank is scored along longitudinal lines 16, 16′, and 17, and along the transverse lines 18 18′ and 19 19′. The scoring of the aforesaid lines facilitates the folding of the blank, which is thereby divided into a bottom 20, a top 21, a rear end piece 22 joining the bottom and top, side flaps 23 adjoining the bottom, and side flaps 24 adjoining the top. The blank is also scored on the inclined lines 15′ upon which the corner flaps 15 may be folded so that they may extend toward each other, as indicated in Fig. 2.

The first operation in forming the boxes for the condition in which they are adapted to be arranged in stacks, is the folding of the corner flaps 15, as shown by Fig. 2. The end flaps 14 are then provided with a coating of glue 14′ and are folded on the lines 18 and 19 so as to place the glued surfaces upon the inwardly bent corner flaps 15, as indicated by Fig. 3. It will be observed that the ends 14 are thereby joined to the side flaps 23 and 24 of the bottom and top respectively, and are reinforced throughout their width by the corner flaps 15, and that the box is adapted to lie in a flat condition when the flaps are so joined.

The portions at the sides of the connecting piece 22 and between the side flaps 23

and 24 are scored along diagonal lines 25 and 26. The lines 26 are, moreover, slitted from the outer edge to the intersection of the lines 25, as indicated at 27. By reason of so scoring and slitting the portions between the side flaps, the said portions are adapted to be folded inwardly and to be concealed when the box is closed. The forming of the slits 27 provides triangular corner flaps 28 which automatically bend inwardly by reason of the scorings, and whose function is to guide the side flaps 23 inwardly and the side flaps 24 outwardly, as hereinafter explained, when the box is folded to closed condition.

For convenience in stacking a number of boxes they may be folded as shown by Fig. 3, or if it is desirable to decrease their width the side flaps 23 may be folded inwardly upon the top and bottom instead of being folded outwardly as shown by this figure. The narrower formation is preferable for the additional reason that the pointed flaps 28 are more efficiently protected, because they then lie between the edges defined by lines 17, 17. The action of folding the side flaps inwardly and downwardly draws the end flaps 14, 14 inwardly and downwardly.

When unfolding a box for use, the raising of the side flaps effects similar movement of the end flaps, or the raising of the end flaps effects similar movement of the side flaps.

By reference to Fig. 5 it will be seen that the triangular corner flaps 28 are bent slightly inwardly. When the top 21 is folded upwardly, as shown by Fig. 6, the diagonal scoring upon the lines 25 and 26 causes the intermediate portions between the side flaps to fold inwardly toward each other. Continued closing movement of the top carries it into engagement with the inwardly bent points of the corner flaps 28, which are thereupon deflected more and more toward each other, thereby bending the intermediate scored portions so that the edges of the side flaps 24 may pass outside and overlap the side flaps 23 (see Fig. 9). During the closing movement of the top, the connecting piece 22, which constitutes the rear end joining the bottom and top, is moved to upright position against the ends of the side flaps 23. The bottom 20 and top 21 are made of approximately equal length, and consequently when the edge of the top end flap approaches the edge of the bottom end flap 14, it is adapted to coincide therewith and prevent complete closing of the box. By pressing the bottom and flap slightly toward the rear, the top end flap may be brought down so as to overlap the bottom end flap, to enable the box to assume a rectangular closed condition, as shown by Fig. 7. When the box is closed, the side flaps 24 and the end flap 14 of the top overlap the side flaps 23 and end flap 14 of the bottom, and the box is held in closed condition by the coöperation of the two overlapping end flaps. It will be observed that the exposed edges of the blank, when the box is closed, all coincide with corner bends, and that the appearance of the box is thereby rendered neat, and at the same time the top and bottom held in closed relation without the employment of interlocking tabs and slits.

Additional fastening means may be provided in the form of a tape 30, of which one end may be permanently attached to the bottom by a button 31, and of which the other end may be looped about the button after the tape has been passed around the box.

I claim:

A blank for a folding box having intersecting scores dividing the blank so as to define a top, a bottom, a flap connecting the top and bottom, end flaps extending respectively from the outer ends of the top and bottom, side flaps at the side edges of the top and bottom, corner flaps for joining the side flaps of the top with the end flap thereof, corner flaps for joining the side flaps of the bottom with the end flap thereof, and folding flaps connecting the side flaps of the top and bottom with the flap which connects the top and bottom, each of said folding flaps having diagonal scores and each having a slit extending diagonally from the outer edge to the meeting point of the diagonal scores, said slit providing a triangular flap having two free edges and one connecting edge, and being adapted to be engaged and folded inwardly by the top to guide the side flaps of the top outside the side flaps of the bottom when the box is closed.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ELIE W. LABOMBARDE.

Witnesses:

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ADELARD TREMBLAY.