No. 883,757. PATENTED APR. 7, 1908.

W. STEWART.

BOX.

APPLICATION FILED DEC. 21, 1905.

2 SHEETS—SHEET 1.

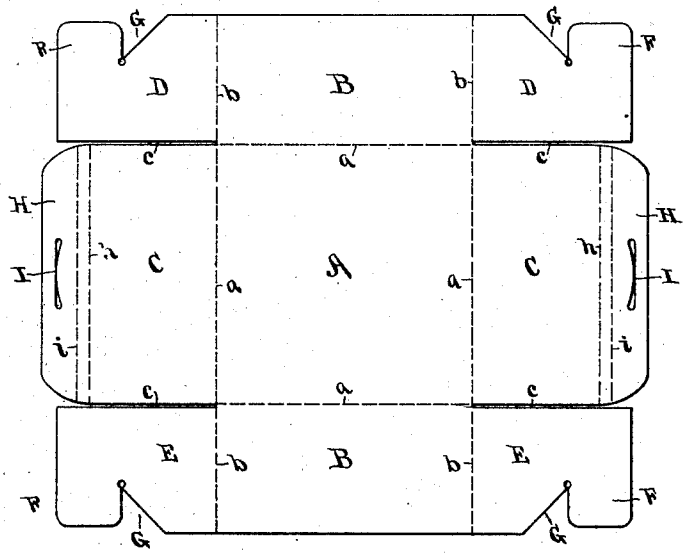



Fig. 1.

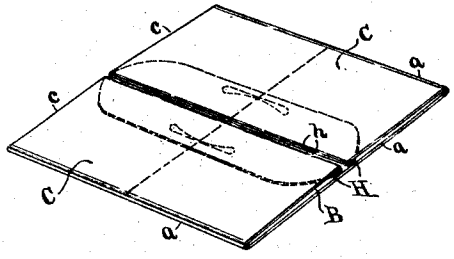



Fig. 2.

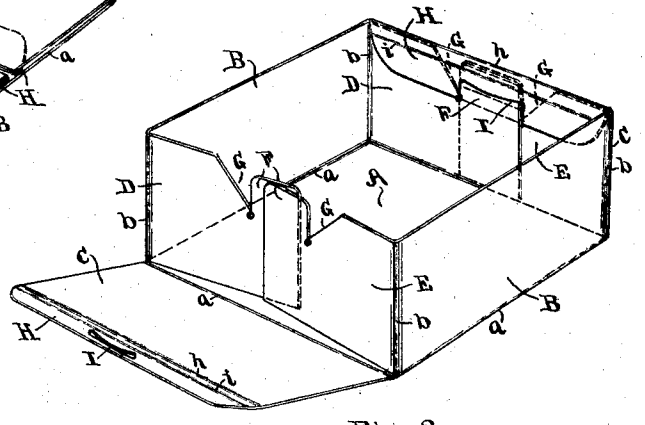



Fig. 3.

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2 SHEETS—SHEET 2.

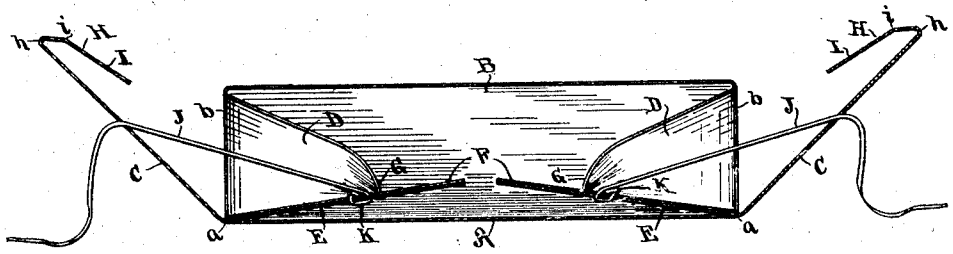


Fig. 4.

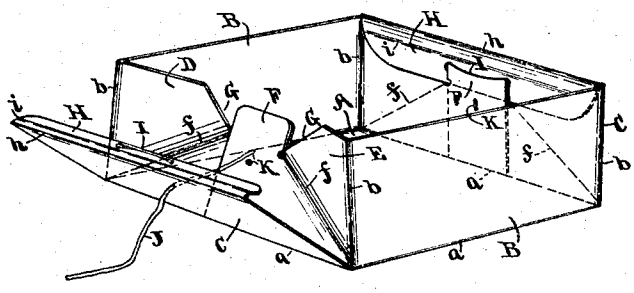


Fig. 5.

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# UNITED STATES PATENT OFFICE.

WALTER STEWART, OF ELMIRA, NEW YORK.

## BOX.

No. 883,757. Specification of Letters Patent. Patented April 7, 1908.

Application filed December 21, 1905. Serial No. 292,800.

*To all whom it may concern:*

Be it known that I, WALTER STEWART, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Boxes, of which the following is a specification.

This invention relates to improvements in boxes formed from paper or like material, cut from a single blank, and so shaped and creased that the box may be packed in flat or flatly folded shape for shipping or storage, the component parts of the blank being provided with means for fastening the sides of the box securely in place when the box is erected.

One object of my improvement is to provide a simple and quickly adjusted device for locking the parts of the box together, when in erected position, and to so form the blank that it may be folded flat in small compass for shipment or storage.

A further object is to so shape the parts of the blank as to require a minimum amount of material for any given size of box and to avoid wastage in cutting out the blank.

I attain my objects by forming the blank for the box and uniting the parts thereof in erected position, in the manner illustrated in the accompanying drawings, in which—

Figure 1 represents a blank for the box with all the component parts laid out flat; Fig. 2, a perspective view showing the blank with the parts thereof folded together flatwise in smallest compass; Fig. 3, a perspective view showing the box partly erected; Fig. 4, a vertical section through a modified form of the box with the parts in course of erection; and Fig. 5, a perspective view showing this modified form of box partly erected.

Like letters of reference designate like parts in the several views.

The blank for my improved box will be cut from cardboard, press-board or other suitable material of more or less thickness, according to the requirements of any particular box, and will be formed in the shape illustrated in Fig. 1, in which A represents the bottom of the box, B B the sides, and C C the ends, said sides and ends being hinged to the bottom A by suitable creases, as at *a*. Each of the sides B is provided at opposite ends with folding portions D D and E E, said end folds being hinged to the sides by creases at *b*. These end folds on opposite sides of the box are adapted, in my preferred form, to lap over or meet one another when the box is erected.

The box ends C are separated from the end fold by the cuts *c* and are provided on their outer ends with flaps H hinged to the top of the ends by creases along the lines *h*. To facilitate the erection of the box and the locking of these flaps to the end folds, I also provide an additional crease along the lines *i*, so that these flaps will assume the position shown more clearly in Fig. 4, when erecting the box. The end folds are provided with V-shaped notches at G to form the tongues F, which will stand vertically when the box is erected. The notches are so cut that the side edges of the tongues formed thereby will be vertical when the end folds are brought into erect position. The tongues are inserted in the horizontal slots I provided therefor in the end flaps to lock said flaps in place. When so inserted, they will have their then respectively outer edges engaged by the ends of the slots, thereby preventing the end folds from spreading apart and holding the sides in erect position.

To facilitate the insertion of the tongues in the slots, I make the edges of the slots next the crease *h* convex, which causes said edges to project, when the tongues are pressed against the flaps below the slots in inserting them, thereby opening the slots wide and directing or guiding the tongues into the slots, rendering the locking together of the parts much more rapid and certain than if the edges of the slots were straight.

For the purpose of shipment or storage, the box blank, as so formed, may be laid out flat as shown in Fig. 1; or it may have the sides B with extended end folds laid over upon the bottom and ends C. The box, however, is adapted to be folded in still smaller compass, as shown in Fig. 2, by laying the end folds D and E over upon their respective sides B and then turning the sides and end folds down upon the bottom A, after which the ends C will be folded over upon the sides with the flaps H turned inward. This will be my preferred manner of folding the box.

To erect the box, especially when folded as in Fig. 2, the ends C will be raised and turned backward and the sides B will be drawn up into upright position, thereby causing the end folds D and E to swing towards one another, across the ends of the

box, as shown at the front portion of Fig. 3. The ends C will then be brought up one at a time and locked in position, the flaps H, by reason of the crease *i*, being bent at an angle towards the ends, whereby the outer edges of the flaps may be readily inserted back of the tongues F and in front of the remaining portions of the folds D and E by way of the notches G, the tongues being passed through the slots I and positioned between the flaps and the box ends. In this way the notches G and the upper ends of the tongues F, as well as the remaining upper portions of the end folds, will be concealed behind the flaps H; and the then outside edges of the tongues will be engaged by the ends of the slots I, thereby securely locking the end folds to the flaps and maintaining the sides and ends of the box in their erected positions. The incline of the notches G at each side of the tongues F assist materially in erecting the box since they permit the flaps H to be easily inserted back of the tongues and in front of the side portions of the end folds when said end folds are in the position shown in the left hand or unlocked end of the box in Fig. 3. This blank is particularly adapted for deep boxes of the kind used by milliners for hats and the like. It is, however, also well adapted for either high or low boxes and for many purposes.

I prefer to so form the end folds D and E as to cause them to meet or overlap when the box is erected, thereby bringing the tongues thereon into juxtaposition so that they may be inserted together through one slot in the end flaps. The box may, however, be so made that the end folds will not overlap, or meet, in which case it will be readily understood that the flaps H may then be provided each with two slots to receive the separated tongues on the opposite folds. The box, however, is much stiffer and the parts are more quickly assembled where the end folds are made to overlap, as will be seen from an inspection of Fig. 3 of the drawings. The tongues F are preferably cut shorter than the height of the box in order to facilitate their insertion in the slots in the flaps.

In the case of hat boxes it is desirable to have a tape or cord at each end by which the cover may be tied down upon the box. In supplying my improved box with such cords, I so arrange the parts that the cords will assist in erecting the box, this modified form of the box being shown in Figs. 4 and 5 of the drawings. For this modification I use the same blank as shown in Fig. 1, but crease the end folds diagonally on the lines *f* from the bottom of the tongues F to the corners of the box, and I fasten the end folds D and E together where they overlap, either by means of the cord J, as at K, or by staples, or by pasting or other suitable means. With the end folds so fastened together and creased, the box becomes a collapsible box, and the end folds, when the box is folded flat, will fold inward and rest upon the bottom with the sides B folded over upon them; and the ends C will be folded over upon the sides B the same as in Fig. 2. The box may also be made in this form without the tapes. In erecting this box, the cords J, which pass through holes in the ends C suitably located, will be pulled outward until the end folds and sides B B are brought into vertical position, after which the ends will be secured to the end folds by means of the flaps H in the same manner as described in connection with the box shown in Fig. 3, the cords J being pulled out to their full extent through the holes in the ends C. The box is then ready to receive its contents and the cover.

The cover for this box may be made in any desirable way, either deep or shallow, and preferably in a knock-down form; by forming the tongues on the end folds, I accomplish a saving in stock over those forms of boxes in which the locking tongues are formed on the end flaps, and, moreover, this form of interlocking parts requires only a short flap. The blank may, therefore, be cut from a sheet of the desired material with little wastage.

Having thus described my improved box and blank, and without confining myself strictly to the form and configuration of the parts as herein shown and described, what I claim as my invention and desire to secure by Letters-Patent is:

1. A box formed from a blank comprising a bottom with sides and ends hinged thereto, end folds on the sides adapted to project across the ends of the box when the box is erected, said end folds having notches cut at the top to form vertically disposed tongues on their outer ends, the side edges of said tongues being produced by vertical cuts, and flaps on the ends of the box adapted to fold over upon the end folds, each of said flaps being provided with a central horizontal slot and a transverse crease between the slot and the hinge of the flap, whereby the flaps may be entered into the notches and the tongues inserted in the slots while the end folds are being brought into position across the ends of the box.

2. A box comprising a bottom with sides and ends hinged thereto, end folds on the sides overlapping one another from opposite sides and permanently fastened together where they overlap, tongues formed at the top of the folds where they overlap, the folds being diagonally creased from the bottom corners of the box upward, whereby the sides may be folded down upon the bottom with the end folds interfolded therebetween, and flaps on the ends of the box adapted to fold over upon the end folds when erected, said flaps being provided with horizontal

slots through which the overlapped tongues are passed during the erection of the end folds to fasten the box in erected position.

3. A box comprising a bottom with sides and ends hinged thereto, end folds on the sides overlapping one another from opposite sides and permanently fastened together where they overlap, said folds being diagonally creased from the bottom corners of the box upward, whereby the sides may be folded down upon the bottom with the end folds interfolded therebetween and the box ends folded down upon the sides, tapes or cords attached to the end folds where overlapped and fastened together, said cords passing out through holes provided therefor in the box ends, and means for fastening the end folds and box ends together when the box is erected.

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

WALTER STEWART.

Witnesses:
JAMES H. O'BRIEN,
LEO V. STOELTZLEN.