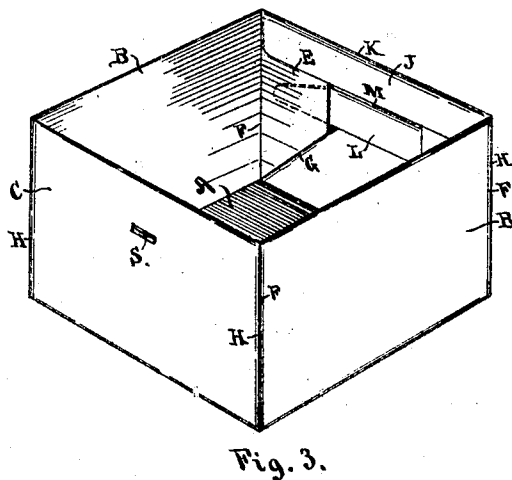
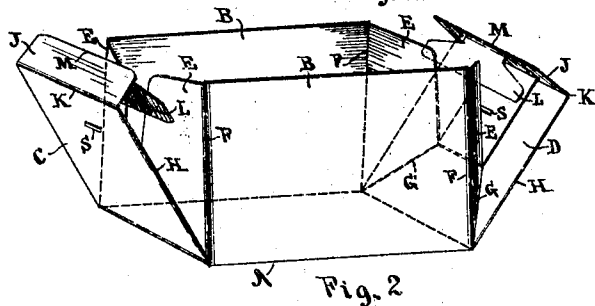
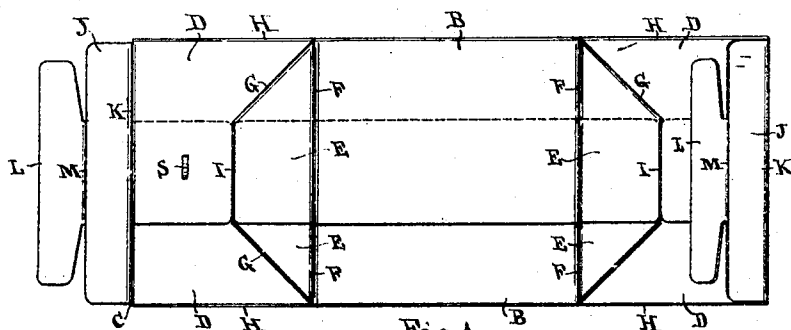


No. 802,916.

PATENTED OCT. 24, 1905.

E. C. CROMPTON.
COLLAPSIBLE BOX.

APPLICATION FILED FEB. 28, 1905.



WITNESSES

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COLLAPSIBLE BOX.

No. 802,916.

Specification of Letters Patent.

Patented Oct. 24, 1905.

Application filed February 28, 1905. Serial No. 247,779.

To all whom it may concern:

Be it known that I, EDWIN C. CROMPTON, a citizen of the Dominion of Canada, residing at Brantford, in the county of Brant and Province of Ontario, Canada, have invented certain new and useful Improvements in Collapsible Boxes, of which the following is a specification.

My invention relates to improvements in light-weight boxes manufactured from paper, cardboard, or the like, the parts of which are adapted to be folded flat for the purpose of economizing space in shipping or storing the boxes; and the objects of my improvements are to provide a box of this nature which may be made of comparatively light materials and yet be strong and well braced when set up, to provide means for quickly erecting the ends and sides by causing the sides to be automatically erected when the ends are erected, and to provide novel means for locking the ends of the box to the side members when the box is completely set up.

I attain my objects by forming and arranging the parts of the box in the manner illustrated in the accompanying drawings, in which—

Figure 1 represents a plan view of my improved box in knockdown or collapsed condition; Fig. 2, a perspective view showing the relative positions of the side and end members in the course of erecting the box, and Fig. 3 a view in perspective of the box when completely erected.

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

The bottom, sides, ends, and other members of my improved box are all formed from one piece of paper, cardboard, or the like, the sides and ends being bent up from the bottom on longitudinal and transverse creases.

A represents the bottom, B B the sides, and C C the ends, of the box. When in knockdown or collapsed position, the sides are folded upon one another and upon the bottom flat, with the ends bent outward in line with the bottom. The sides are extended out over the ends and are integrally united and hinged thereto by the longitudinal creases H. These end extensions of the sides are divided into two portions D and E, which fold together when the ends and sides are erected, the fold E being hinged to the sides B by the vertical creases F and to the folds D by the diagonal

creases G. The folds D on opposite sides lap over one another and are stapled, glued, or otherwise rigidly fastened together and preferably, also, to the ends C, (although the latter is not essential,) as indicated at S. The folds D and E are also partly separated from one another by transverse slits or cuts I, extending from the top edge of the folds E to intersect the diagonal creases G.

Hinged to the ends C by transverse creases K are flaps J, which serve to lock the end members to the side folds when the box is erected, and hinged to these flaps J by the crease M are flaps L, having tongues projecting at each side, which are inserted between the folds D and E, thereby securing the flaps J in locking position. When in knockdown position, these flaps J and L will be turned over upon the ends, as shown at the right-hand side of Fig. 1, the creases at K and M causing these flaps to assume a slightly bent-up position when no weight is resting upon them from above.

To erect the box as so constructed, a hand is slipped beneath each of the ends C and the ends are raised and brought toward one another, assuming the position shown in Fig. 2. By reason of the folds D and E and the fixed relation of the folds D to one another the sides B are caused to rise simultaneously with the erection of the ends. The tongue-flaps L drop in between the folds D and E, while the flaps J are held by the thumbs or fingers of the hands in position to ride over the tops of the folds E as the ends C are brought up against said folds. The flaps J are then pushed down over the folds E on the inside of the box, bringing said flaps and the tongue-flaps L into their final position, as shown in Fig. 3. The folds E on opposite sides are spaced apart sufficiently to give width for a strong connection between flaps L and J, and the top edges of said folds are cut down slightly, so that creases K will lie flush with the top edges of the sides B. As so formed the box presents a neat outside appearance, the sides and ends presenting perfectly plain uncreased surfaces with no folds or joints showing. The ends by reason of the folds D and E are firmly braced against crushing and are of threefold stiffness. Moreover, by reason of the joints formed by the inturned folds D and E along the creases F and H the box is rendered practically dust-proof.

Instead of driving the staples S through the ends C said staples may be applied only to the folds D, thereby avoiding the appearance of the staple on the outside of the box.

5 The box will be manipulated practically as well without fastening the folds D to the ends C; but I believe it preferable for strength to fasten the three parts together. As already stated, I do not limit myself to any particular way of fastening these parts together, although I believe the staples to be preferable.

I am aware that I am not the first to invent a collapsible box in which the sides are folded over upon the bottom and ends when in collapsed position and with folding portions formed by vertical and diagonal creases as herein described. The novelty of my invention lies in the manner of locking the box when erected by the flaps hinged to the ends of the box and in making the top edges of the ends of the box flush with the top edges of the sides. In the flaps as I arrange them the tongues fall naturally between the members of the side folds as the box is erected, thereby avoiding the necessity of bending the tongues by hand to insert them between the folds. This avoids breaking or tearing the material at the point where the tongues unite to the flaps. By this construction a more rapid erection of the box is effected and the ends are so locked to the sides that they will not readily pull apart.

While I have shown a box in which the sides are so deep that they overlap one another when in collapsed position, my improvements can also be applied to boxes where the sides are not so deep in proportion to the bottom, in which latter case the folding portions will not meet and the outer folds will be secured to the box ends by separate fastenings.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

45 1. A collapsible box comprising a bottom with ends and sides hinged thereto, the sides being folded over upon the bottom, when in collapsed position, and having diagonally-

creased folding portions overlying the ends with substantially vertical cuts extending 50 from the top edges of the inner folds thereof to the diagonal creases, flaps on the ends adapted to fold down over the upper ends of the folding portions when the box is erected, and laterally-projecting tongues on said flaps 55 adapted to be inserted between the folds by way of said cuts.

2. A collapsible box comprising a bottom with ends and sides hinged thereto, the sides being folded over upon the bottom and overlapping one another, when in collapsed position, folding portions on the sides overlying the ends and formed by vertical and diagonal creases, the outer folds on opposite sides being fastened together where they overlap, the inner folds being partially separated from the outer folds by substantially vertical cuts extending from the top of the folds to the diagonal creases, and flaps on the ends of the box provided with laterally-projecting 70 tongues at their free ends, said flaps being adapted to fold over upon the top portions of the inner folds with the tongues inserted between the inner and outer folds through the vertical cuts, when the box is erected. 75

3. A collapsible box comprising a bottom with ends and sides hinged thereto, the sides being folded over upon the bottom and overlapping one another, when in collapsed position, folding portions on the sides overlying 80 the ends and formed by vertical and diagonal creases, the outer folds on opposite sides being fastened together, the inner folds being partially separated from the outer folds by cuts extending from the top of the folds to the diagonal creases, flaps on the ends of the box, said flaps being adapted to fold over upon the side folds when the box is erected, and means for securing said flaps in place. 85

In testimony whereof I have affixed my signature in presence of two witnesses. 90

EDWIN C. CROMPTON.

Witnesses:

WALTER STEWART,
M. E. VERBECK.