

No. 655,019.

Patented July 31, 1900.

T. F. W. SCHMIDT.

HAT BOX.

(Application filed Sept. 27, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

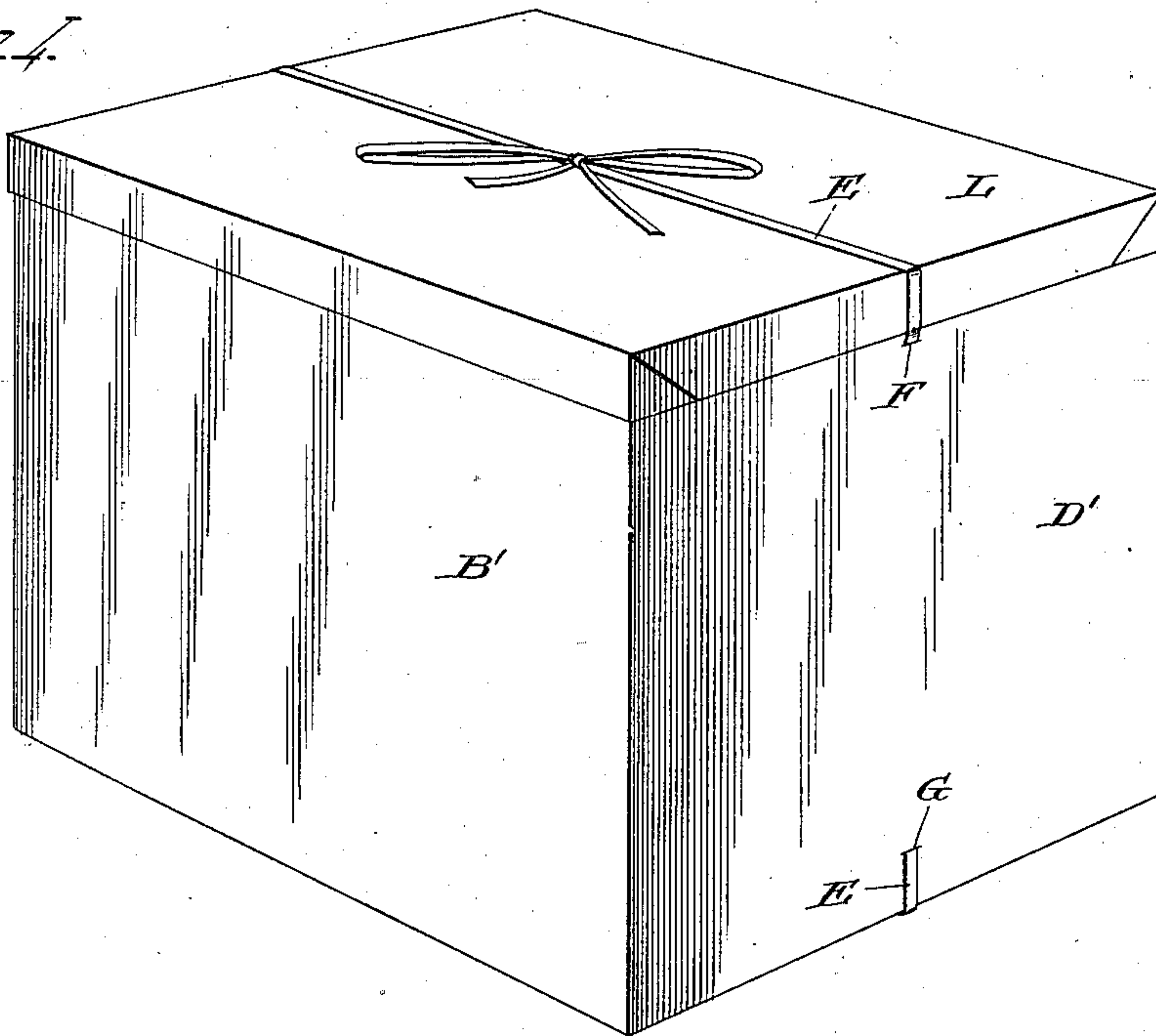
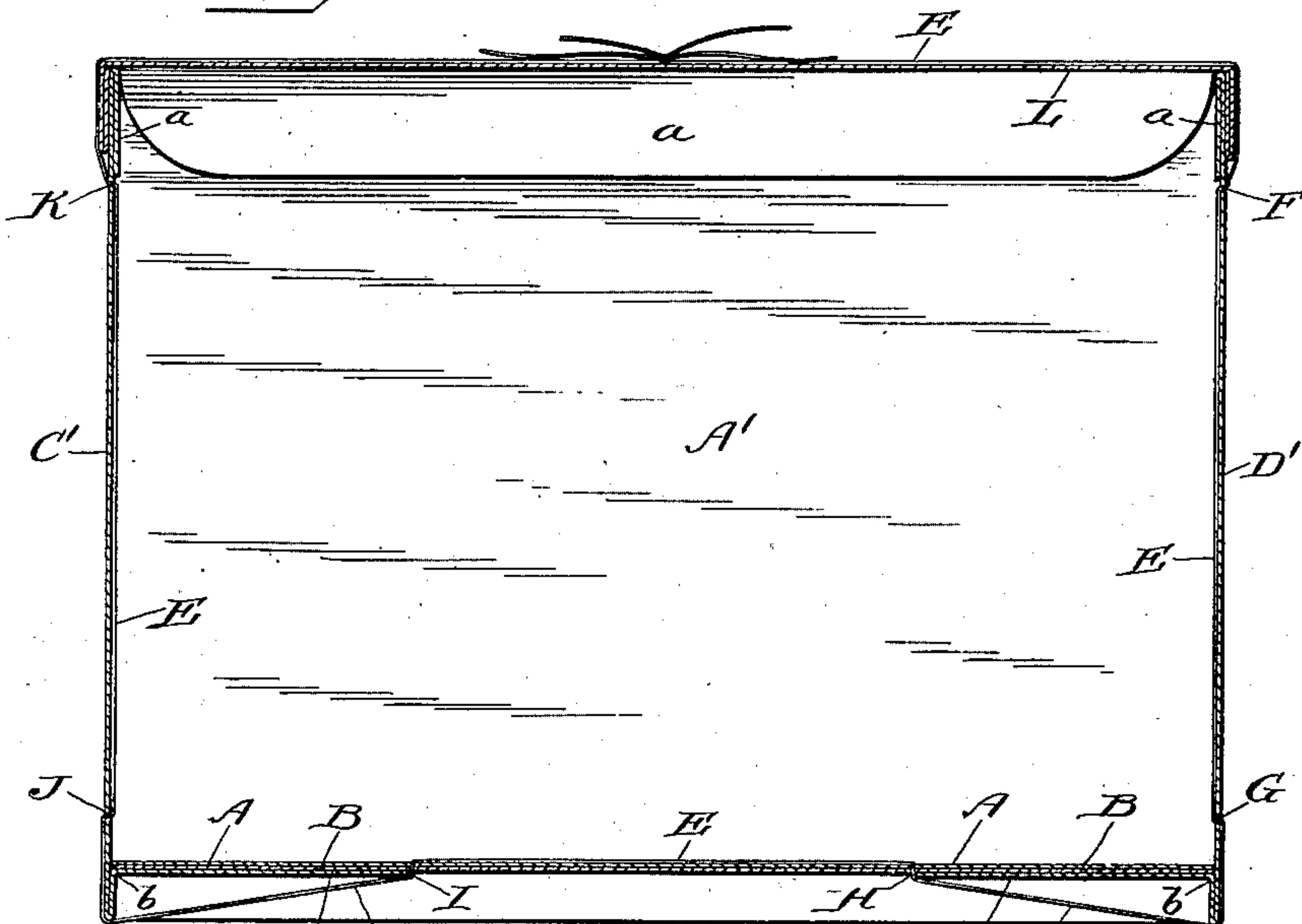


Fig. 2.



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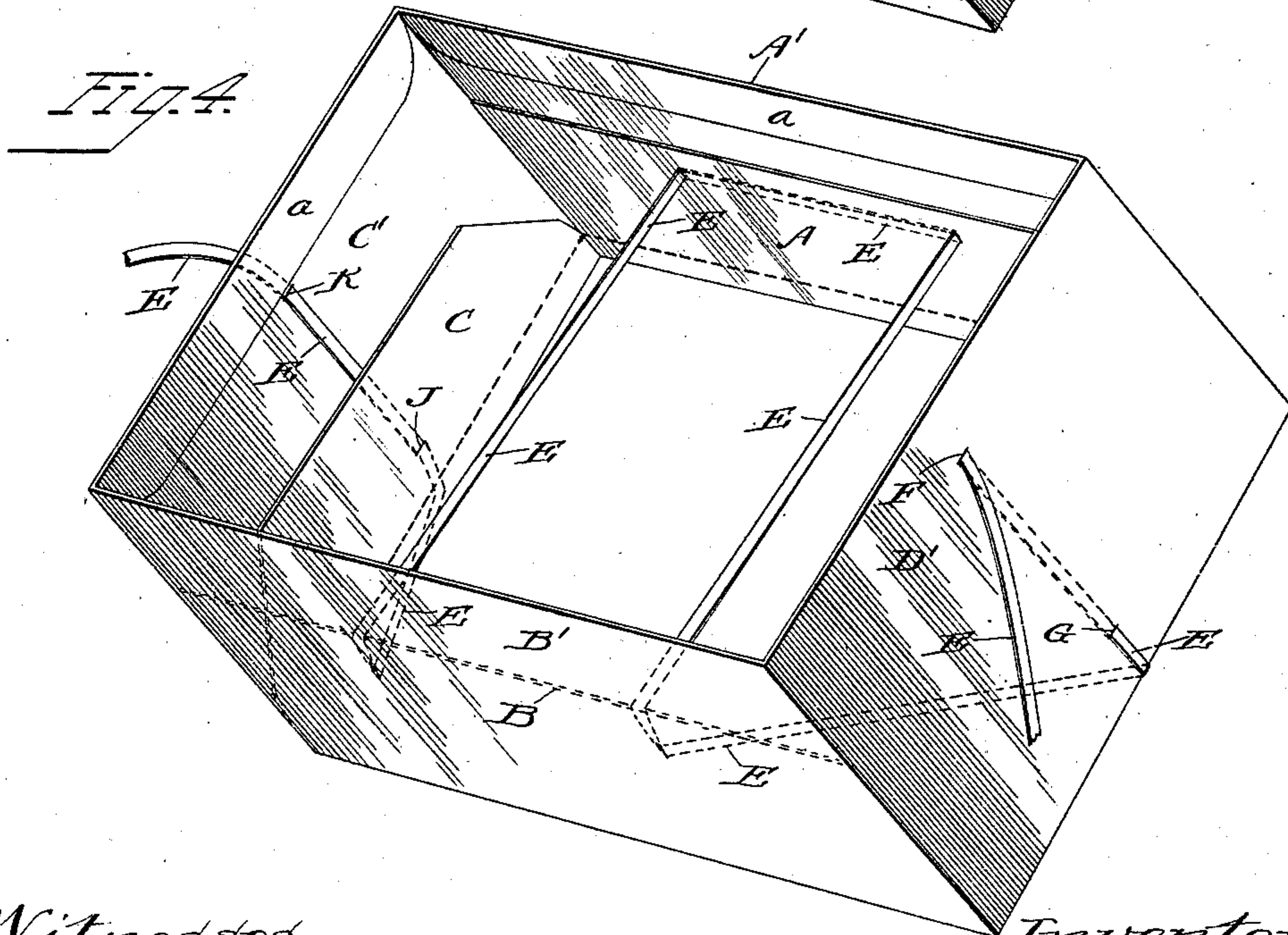
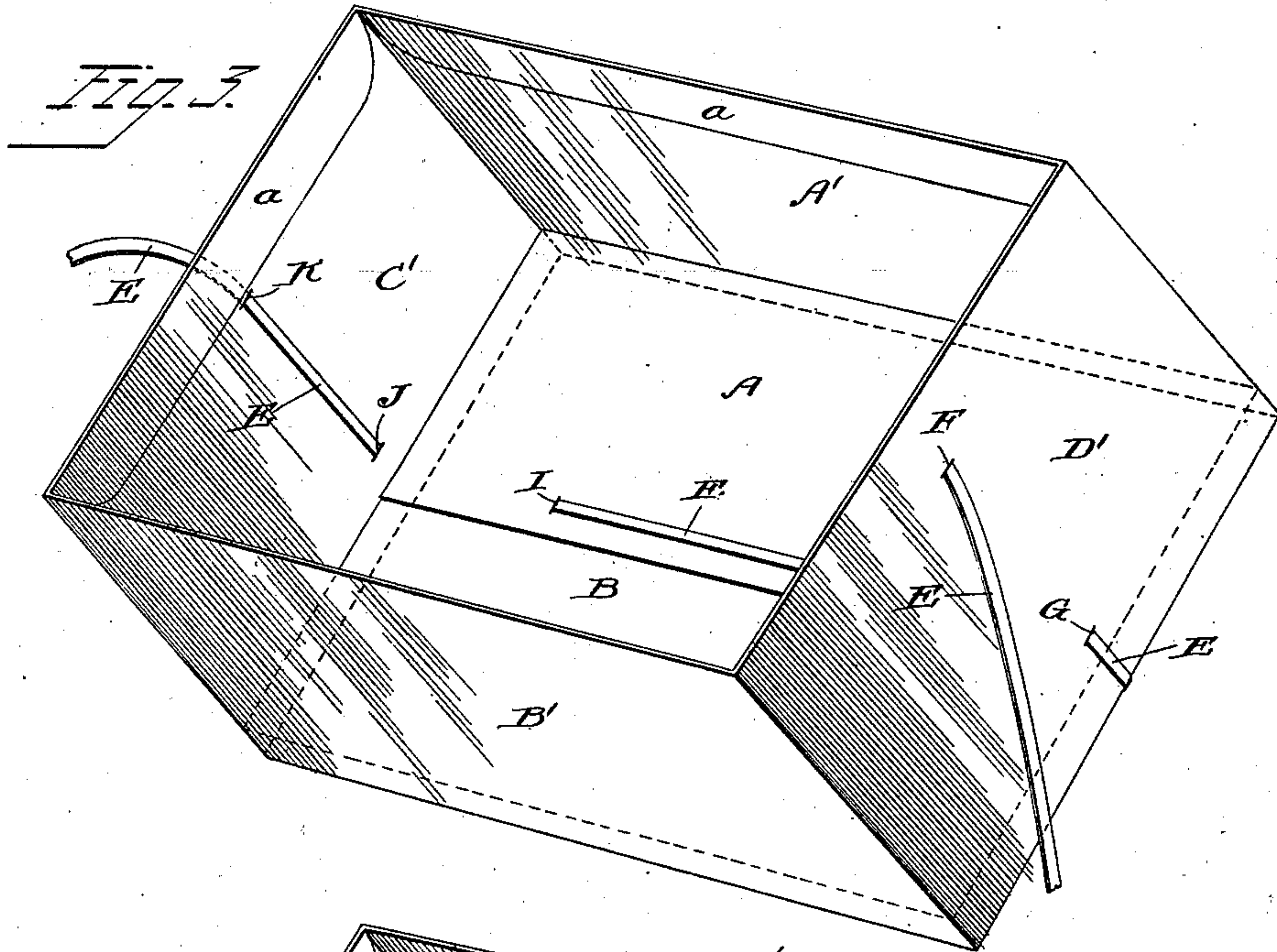
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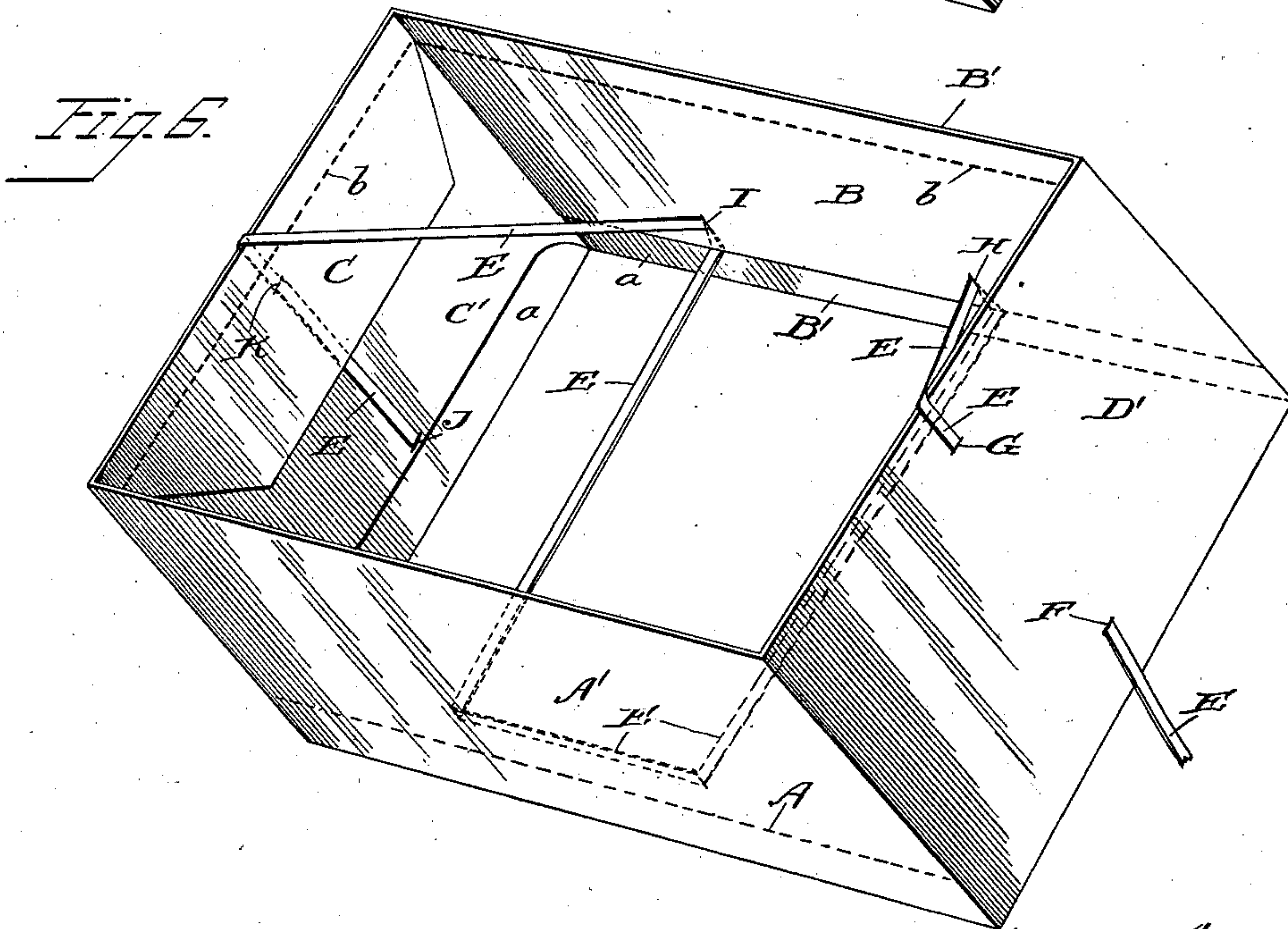
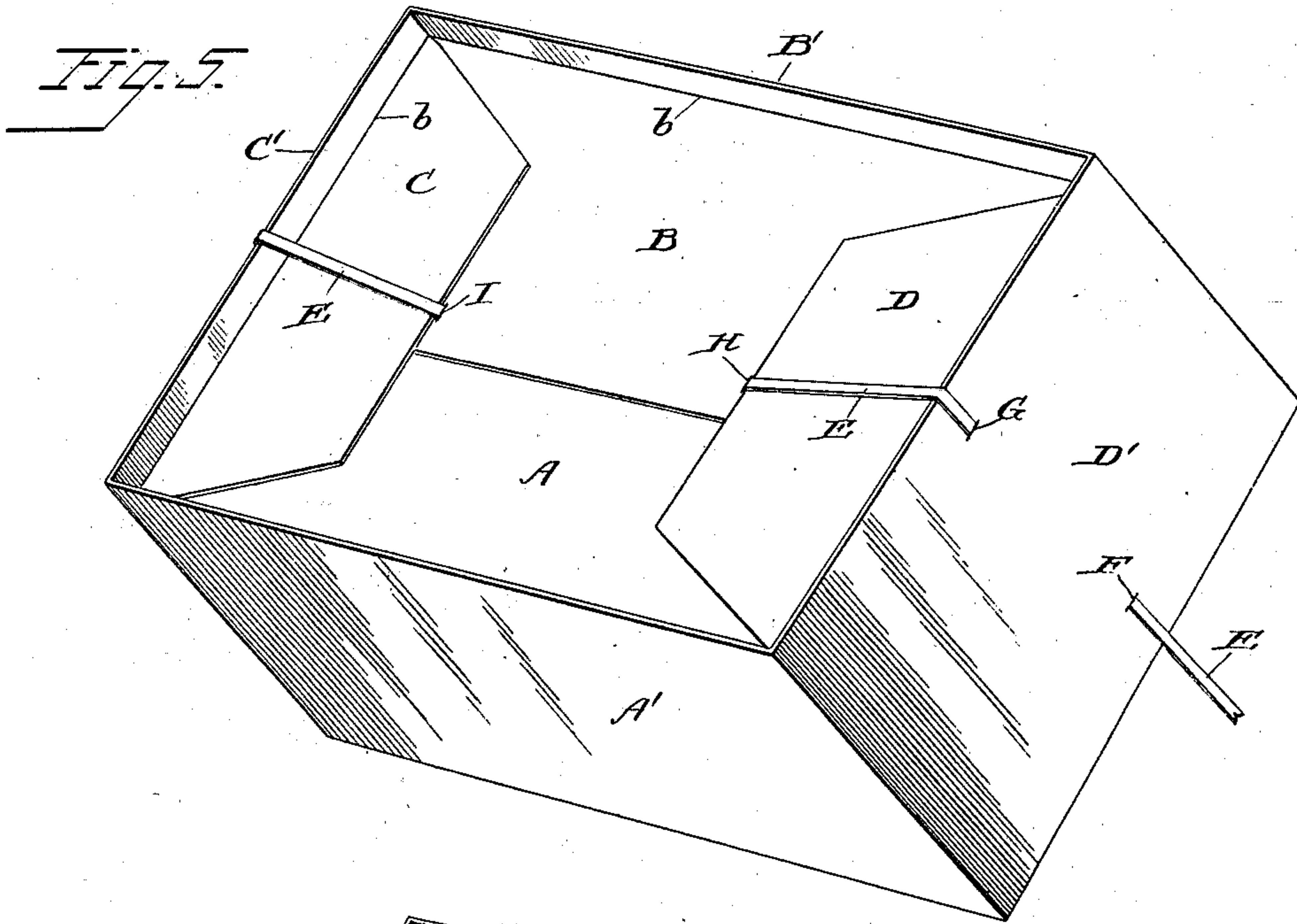
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

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HAT-BOX.

SPECIFICATION forming part of Letters Patent No. 655,019, dated July 31, 1900.

Application filed September 27, 1897, Serial No. 653,186. (No model.)

To all whom it may concern:

Be it known that I, THEODORE F. W. SCHMIDT, a citizen of the United States, residing at Anderson, in the county of Madison, in the State of Indiana, have invented a certain new and useful Improvement in Hat-Boxes, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates more particularly to pasteboard boxes of that class which are used by milliners for delivering and shipping ladies' hats and bonnets, such boxes being usually about cubiform in shape and having shallow removable lids.

My invention has for its object the provision of a collapsible box of this character, which may be pressed out flat, so as to permit a large number of empty boxes to be stored or shipped in compact form, and which may be very easily and quickly opened out into box form and which when so opened out into form shall be substantially the same in appearance and in fact as the usual non-collapsible boxes of this character, the latter being considered by the trade much more preferable than any collapsible boxes which have heretofore been devised, but being objectionable on account of the large amount of space required for storing or shipping them, as well as on account of their greater cost.

In the accompanying drawings, Figure 1 represents one of my new boxes in box form and with its lid in place and secured by the tape-handle; Fig. 2, a vertical cross-section through the middle of the box; Fig. 3, an inside top view of the box with its bottom closed ready to receive the intended contents of the box; Fig. 4, a corresponding view with the flaps forming the bottom of the box turned upward in position to permit the box to be collapsed or pressed out flat for storage or shipment; Fig. 5, a view of the under side of the box with the bottom flaps closed; and Fig. 6, a corresponding view with the bottom flaps bent upward, as in Fig. 4.

The same letters of reference are used to indicate corresponding parts in the several views.

The four sides and bottom of the box are

preferably formed from a single sheet of heavy paper or pasteboard, but may be formed of separate pieces glued together without departing from my invention. The four vertical corners of the body of the box form flexible or hinged joints connecting the four sides of the box, so that when the bottom flaps are in proper position for the purpose two diagonally-opposite corners may be pulled in opposite directions and the box extended until the other two diagonally-opposite corners come together, bringing the four sides of the box into extended flat condition. This will be readily understood by assuming that the box had no bottom to interfere with such collapsing of the sides upon each other.

The bottom of the box consists of four flaps, of which two, A and B, are hinged, respectively, to the lower edges of the sides A' B', while the other two, C D, are hinged, respectively, to the lower edges of the two sides or ends C' D'. Each of the flaps A and B is more than half the size of the bottom of the box, so that when they are bent downward to horizontal position they will overlap each other a suitable distance across the middle line of the box, Figs. 2, 3, and 5. The two flaps C D are considerably less in size than the flaps A B, each in the present instance projecting less than a third of the way across the box, thus leaving a wide space between their outer edges, Fig. 5. The corners at the opposite ends of the flaps C D are also preferably cut away diagonally, since they are unnecessary. The flaps C D constitute the bottom ones of the four flaps forming the bottom of the box, being the ones first bent downward to horizontal position, and the flaps A B being then bent downward upon them.

It will be readily understood without further description or explanation that when the flaps A B are bent upward against the side walls A' B' of the box and the flaps C D bent upward against the side or end walls C' D' of the box, as in Figs. 4 and 6, said flaps present no obstruction to the collapsing of the box in the manner heretofore described, which may be accomplished by pulling either of the two diagonally-opposite corners of the box in opposite directions. It therefore remains only to describe how the flaps are bent downward

to horizontal position in bringing the collapsed box into shape for use and how the four flaps forming the bottom are secured together and held in position to support the contents of the box. The means employed for these purposes consists of a long tape E, which is passed through a slit F in the end wall D' of the box near the upper edge of said wall, thence downward along the inner side of said wall, thence outward through a slit G to the outer side of said wall, thence around the lower corner of the box and inward toward the middle thereof beneath the inner edge of the flap D, Figs. 2 and 5, thence upward through coincident slits H in the overlapped edges of the flaps A B, thence onward across the upper side of the flap A to a point adjacent the inner edge of the flap C, thence downward through coincident slits I in the overlapped edges of the flaps A B, thence onward around the corner of the box and upward along the outer side of the end wall C' of the box to a slit J in said wall, thence through said slit and upward along the inner side of said wall to a slit K in said wall near its upper edge and corresponding to the slit F in the opposite wall D', and thence outward through said slit K. The two opposite ends of the tape E are thus left free, and the tape is of such length that when the bottom of the box is closed, as in Figs. 2, 3, 5, and 6, the opposite ends of the tape extend a considerable distance from each side of the box. With the bottom of the box closed, if it be desired to collapse the box for shipment or storage it is only necessary to pull the bottom flaps A B and C D upward to vertical position against the side walls A' B' and C' D', as in Figs. 4 and 6. This upward movement of the two flaps will draw the opposite ends of the tape E inward into the box to accommodate such movement of the flaps, and to close the bottom again it is only necessary to draw outward the opposite ends of the tape until the parts are again brought to the position shown in Figs. 2, 3, and 5, in which position of the parts the tape serves to secure the bottom flaps together and support them in position to receive the contents of the box. When the lid L is placed upon the box, the opposite ends of the tape E will be tied across its top to hold it in place and also serve as a handle by which the box may be carried, and in this condition the weight of the contents of the box upon the bottom thereof will be firmly supported by the tape. If desired, the tape may be of sufficient length to permit its opposite ends to be crossed at the middle of the top of the lid and carried thence at right angles around the box and tied together beneath it, which will add more stability to the box and afford a more satisfactory handle for carrying it.

The lid L of the box is provided with flexible corners, which will permit the narrow sides or edges of the lid to be bent down flat upon the body thereof, so that the lids as well

as the boxes may be stored and shipped in compact form.

As shown in Figs. 3 and 4, the upper edges of the four sides of the box are provided with extensions or flaps *a*, which are bent inward and downward and pasted to the inner faces of the sides of the box to complete the finish and reinforce the upper edges of the box; but this has nothing to do with my present invention and is no more essential in my new box than in any other box of this general character. It will also be noticed from Figs. 2, 5, and 6 that the four flaps A B C D, forming the bottom of the box, are not hinged directly to the lower edges of the four sides of the box and do not extend directly inward therefrom; but that, on the contrary, each of said flaps is provided with a crease *b* a short distance above the lower edges of the sides of the box, and the portions of the flaps below these creases are pasted to the inner faces of the side walls of the box along their lower edges. In bending upward or downward to vertical or horizontal position the flaps forming the bottom of the box are therefore hinged along the creases *b*. This construction reinforces the lower edges of the side walls of the box and also serves to support the bottom of the box some distance above the lower edges of the side walls thereof, and thus prevents it from resting directly upon any surface upon which the box may be set. This is particularly advantageous in the delivery or shipment of delicate goods in boxes such as these, as it prevents the bottom of the box coming in contact with any dirt or liquid which may happen to be upon the surface where the box is placed.

Having thus fully described my invention, I claim—

1. The herein-described collapsible box, composed of the four sides, the four bottom flaps hinged thereto and folding upward within the sides when the box is to be collapsed, and the tape passed through the two opposite sides of the box and through each of two of the bottom flaps thereof at two points and extending across the other two flaps and serving to support the bottom flaps when bent down to close the bottom of the box but permitting said flaps to be bent upward against the sides of the box preparatory to collapsing the latter, substantially as described.

2. The herein-described collapsible box, composed of the four sides, the four bottom flaps hinged thereto and two of which overlap each other across the middle of the box, and the tape passed through two opposite sides of the box and through each of the two overlapping bottom flaps thereof at two points and extending across the bottom of the box parallel with the overlapping edges of said flaps, said tape serving to support the bottom flaps when in position to close the bottom of the box but permitting them to be bent to position to permit the box to be collapsed, substantially as described.

3. The herein-described collapsible box,

composed of the four sides, the four bottom flaps hinged thereto and folding upward within the sides when the box is to be collapsed and two of said flaps overlapping each other across the middle of the box, and the tape passed downward along the middle of one side of the box, thence across the bottom of the box through the two overlapping bottom flaps and parallel with the overlapping edges thereof, and thence upward along the middle of the opposite side of the box, said tape serving to hold the inside bottom flaps from inward movement and the outside bottom flaps from outward movement but permitting said flaps to be bent upward against the sides of the box preparatory to collapsing the latter, substantially as described.

4. The herein-described collapsible box, composed of the four sides, the two narrow bottom flaps hinged to two of the opposite sides and the two wide bottom flaps hinged to the other two opposite sides and overlapping each other across the middle of the bottom of the box and above the two narrow flaps when the flaps are in condition to close the bottom of the box, and the tape passed downward along the middle of the side of the box having one of the narrow flaps hinged to it, thence inward beneath such flap, thence upward through coincident slits in the overlapping wide flaps, thence onward parallel with the edges of said overlapping flaps and downward through coincident slits therein, thence onward beneath the narrow flap hinged to the opposite side of the box, and thence upward along the middle of said side, substantially as and for the purpose described.

5. The herein-described collapsible box, composed of the four sides A' B' C' D', the two narrow bottom flaps C D hinged to the opposite sides C' D' and the two wide bottom flaps A B hinged to the opposite sides A' B' and overlapping each other across the middle of the bottom of the box above the flaps C D,

when the bottom of the box is closed, and the tape E passed downward through the slits F G in the side D', thence across the middle of the bottom of the box beneath the flaps D and C and through coincident slits H I in the overlapping flaps A and B, and thence upward through the slits J K in the side C', substantially as described.

6. The herein-described collapsible box, composed of the four sides A' B' C' D', the bottom flaps A B C D formed integral with the respective sides of the box at their lower edges and bent upward and permanently secured to the inner faces of said sides beneath the creases *b* in said flaps, said flaps hinging along said creases when bent upward or downward, and the tape E passed through the sides C' D' and each of the bottom flaps A B of the box at two points and extending across the other two flaps, substantially as and for the purpose described.

7. The herein-described paper box formed from a single blank composed of the four sides A' B' C' D', and the four bottom flaps A B C D bent upward against the inner faces of the sides of the box and provided with the creases *b*, the portions of the flaps beneath said creases being firmly secured to the vertical sides of the box and the flaps hinging along said creases as they are bent upward to vertical position or downward to close the bottom of the box, substantially as described.

8. The herein-described box, comprising four sides, four bottom flaps hinged thereto and foldable upward within the box, and a tape passed through two opposite sides of the box and through two bottom flaps and so arranged as to hold the inside bottom flaps from inward movement and the outside bottom flaps from outward movement, substantially as described.

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