

No. 687,968.

Patented Dec. 3, 1901.

J. G. REBER.
HAT BOX.

(Application filed Mar. 8, 1901.)

(No Model.)

3 Sheets—Sheet 1.

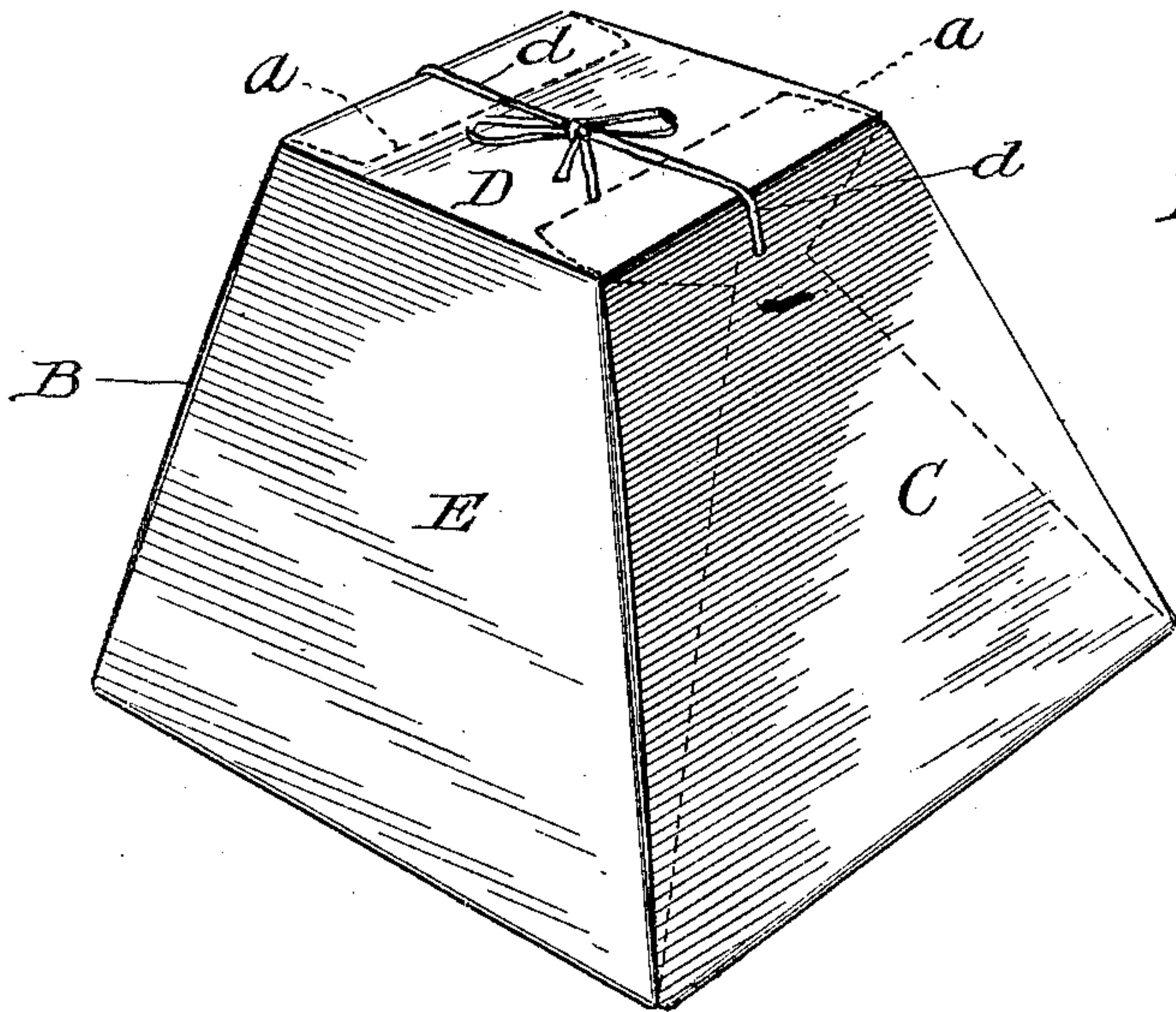


Fig. 1

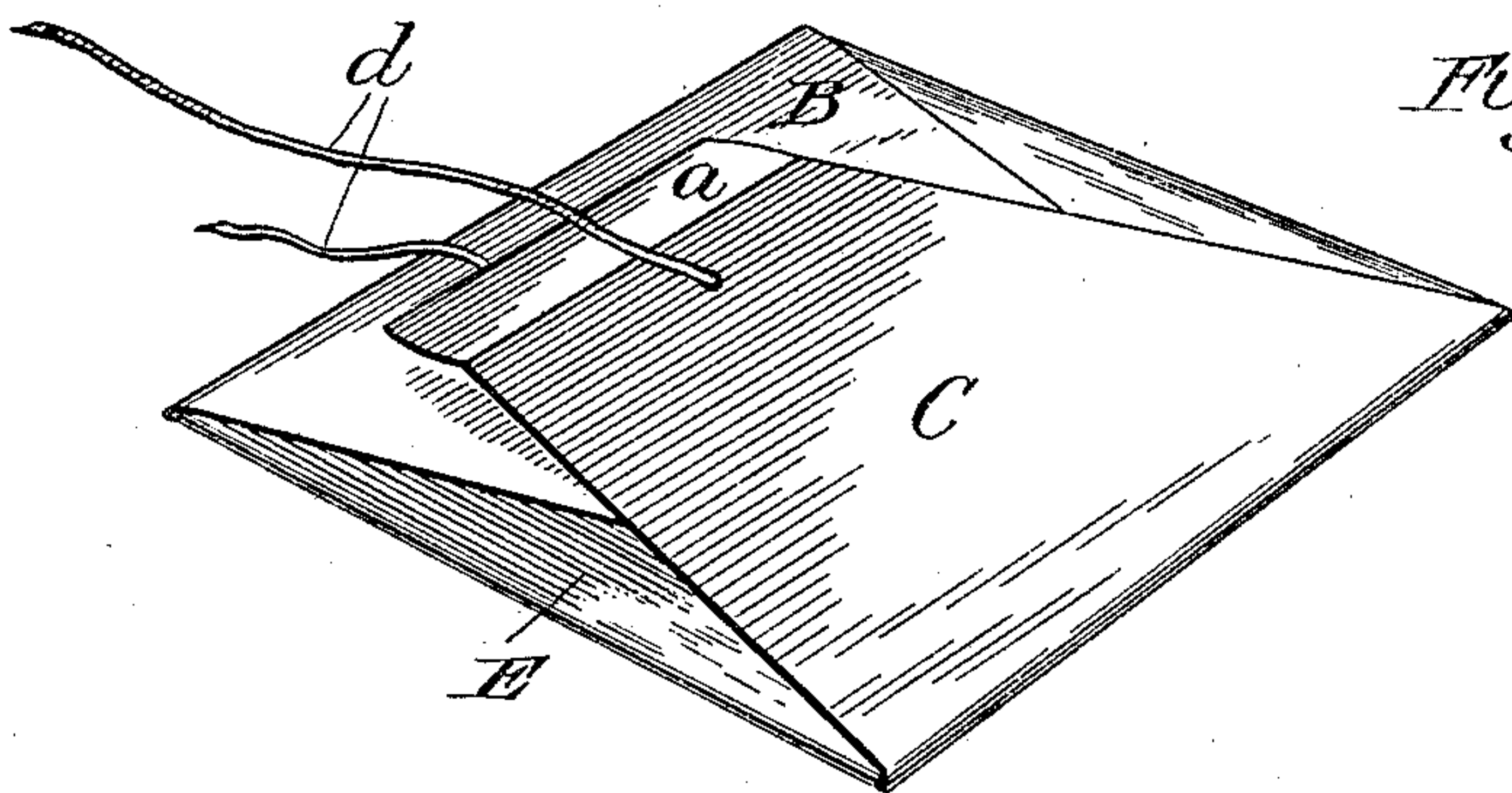


Fig. 2

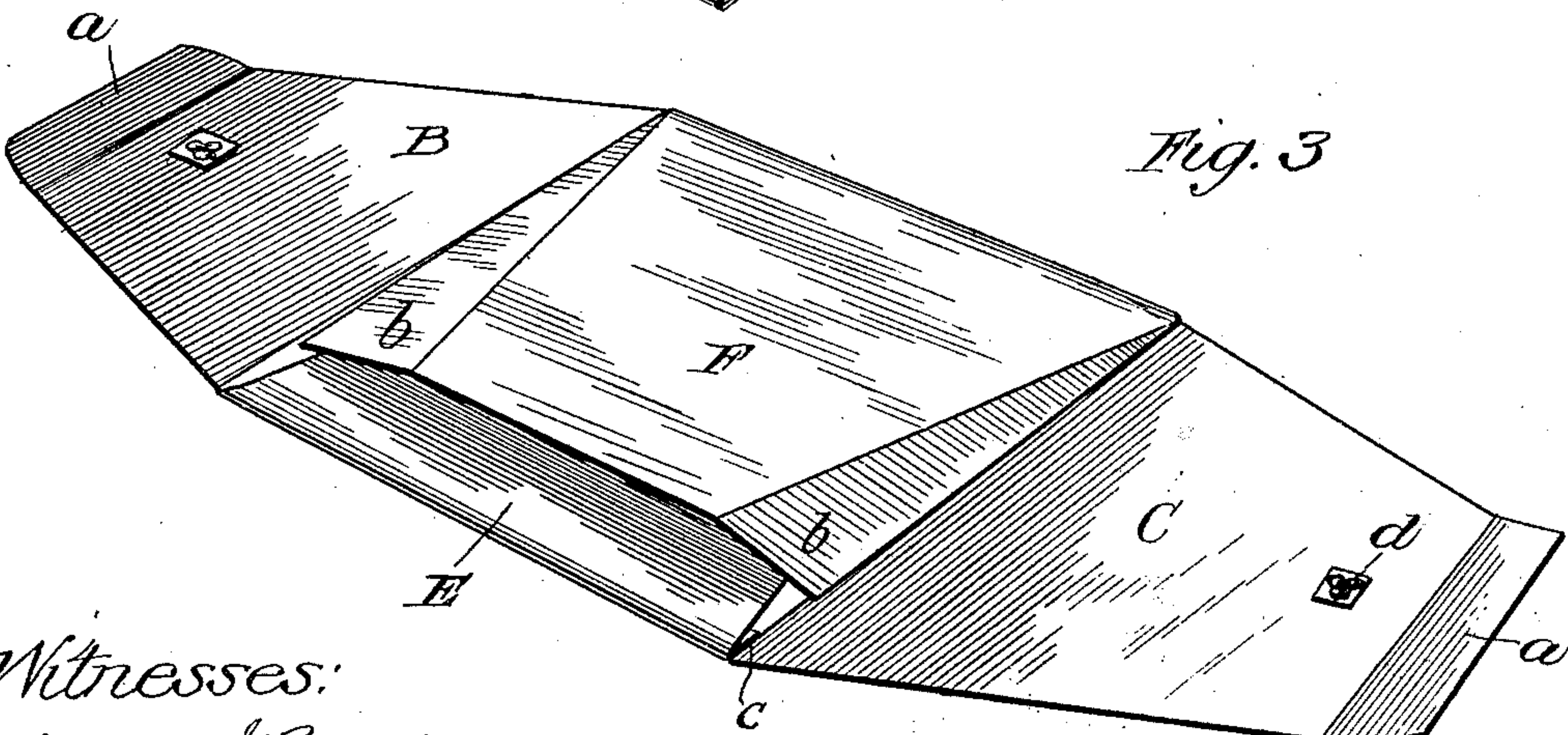


Fig. 3

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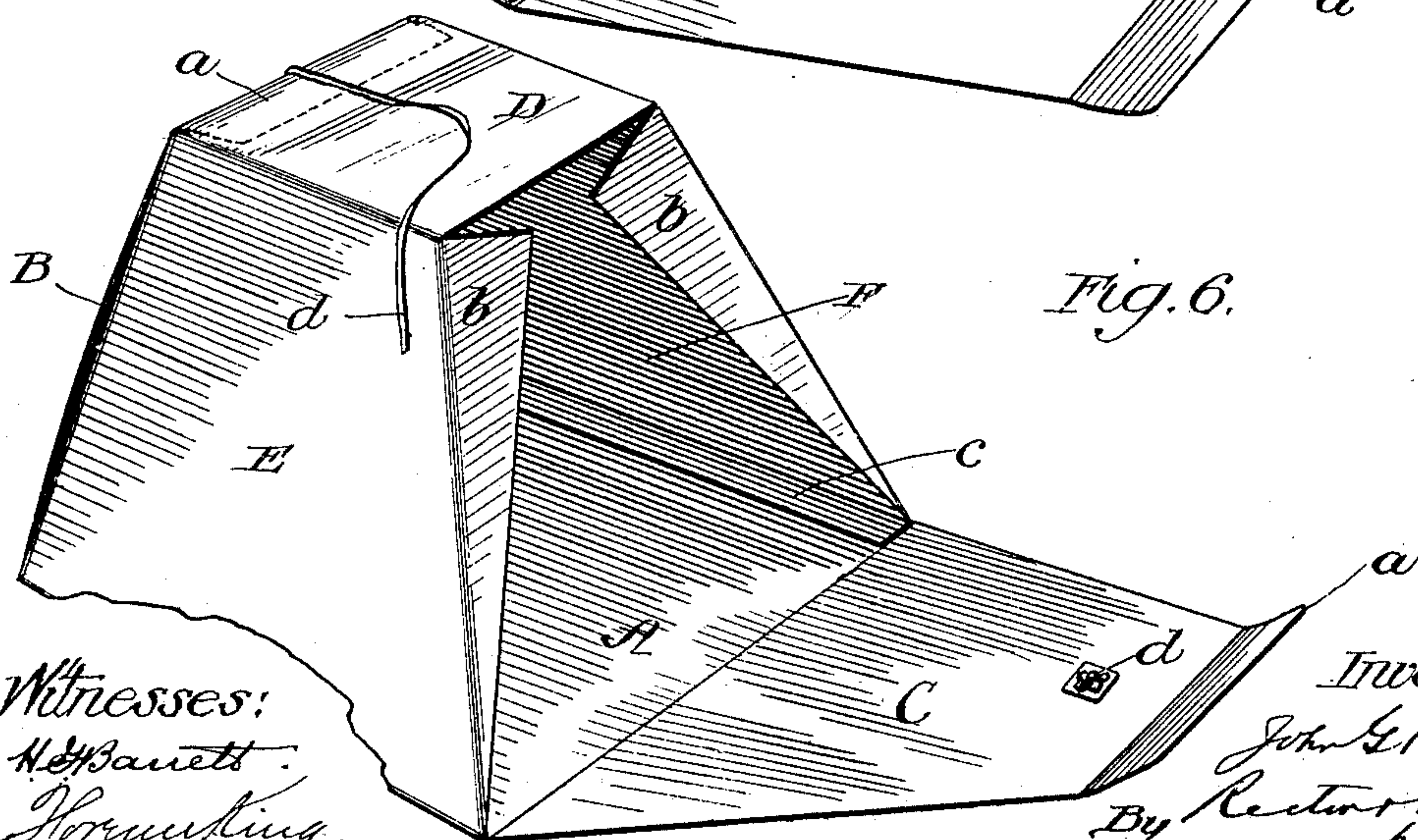
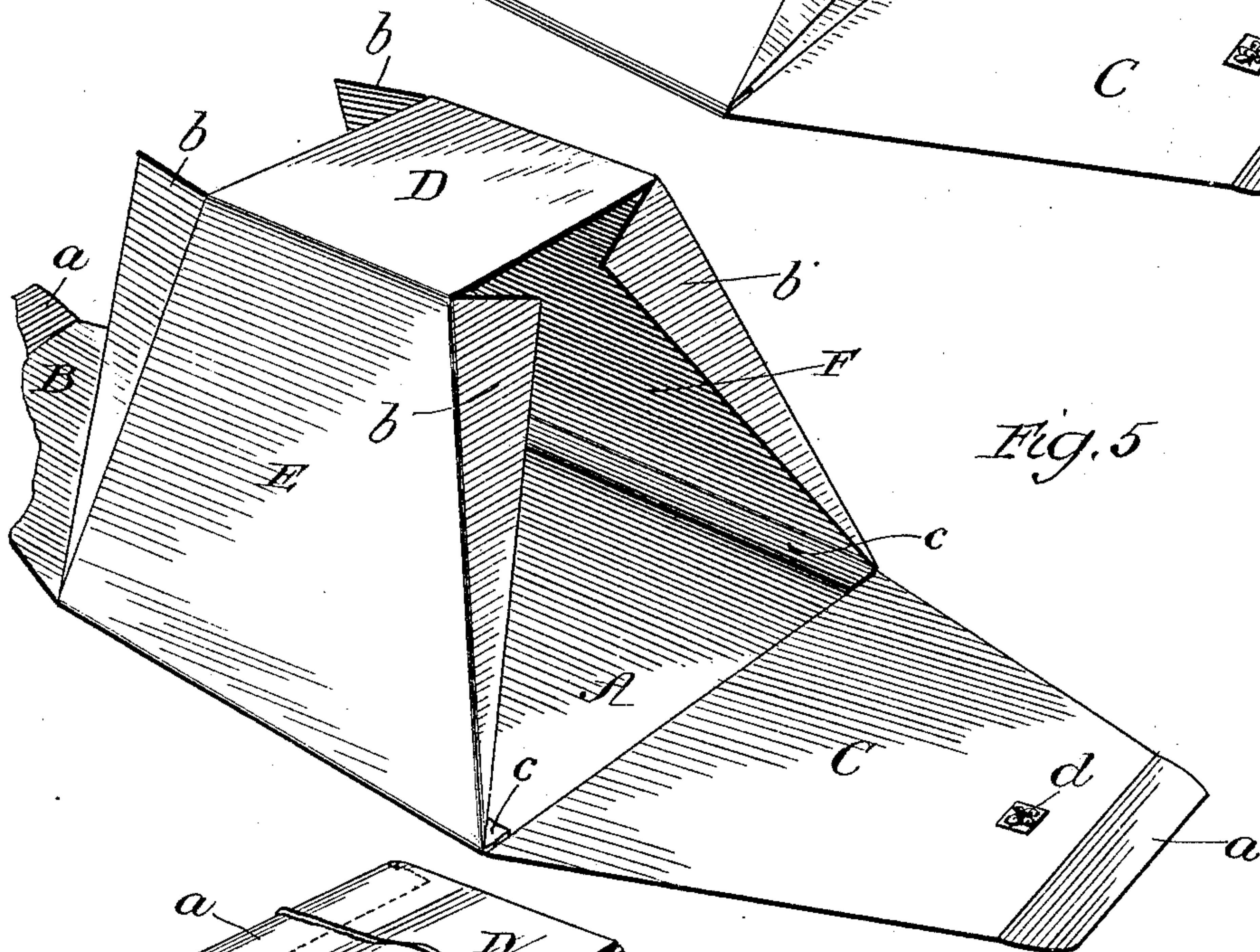
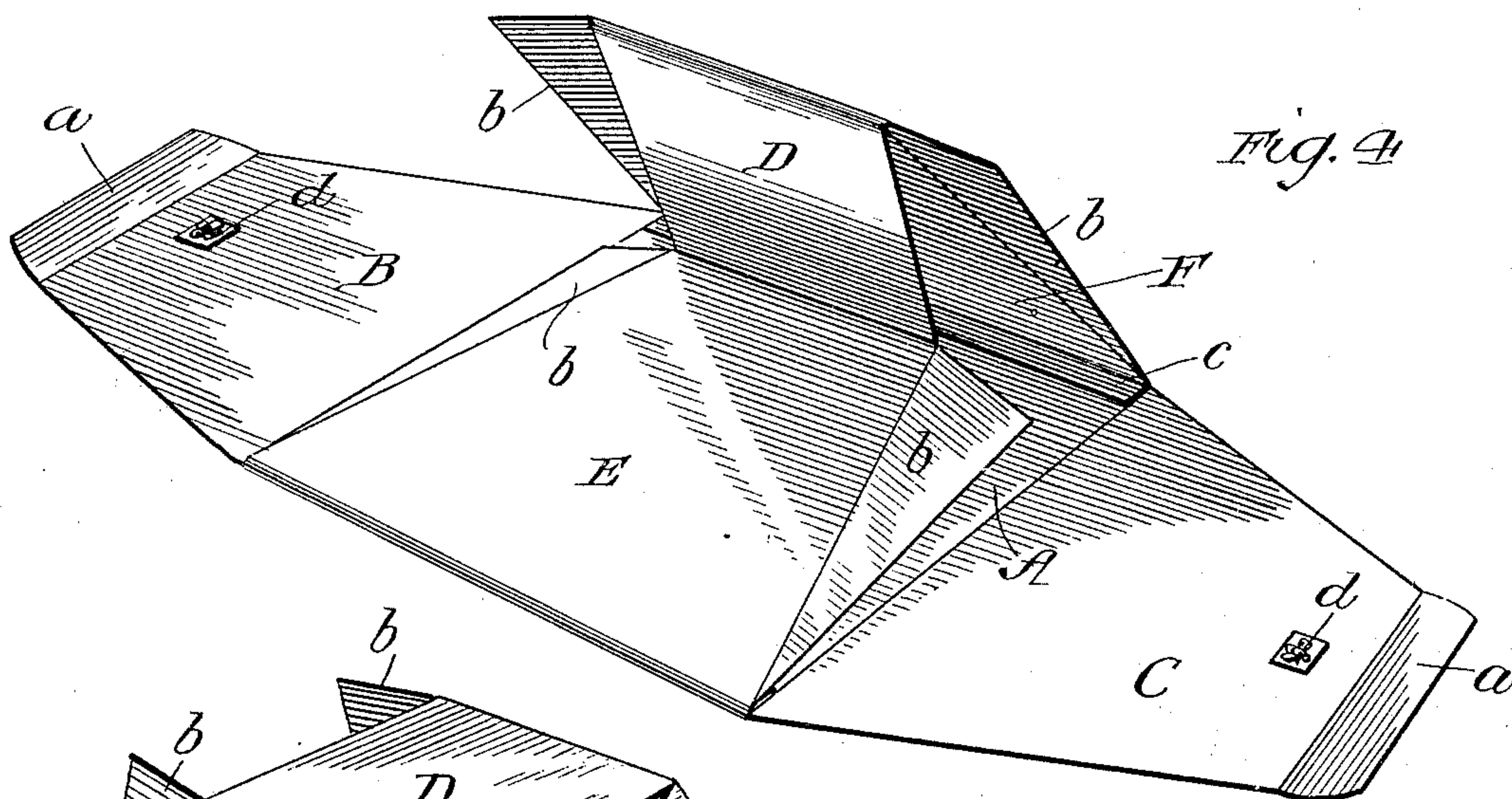
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3 Sheets—Sheet 2.



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Fig. 7

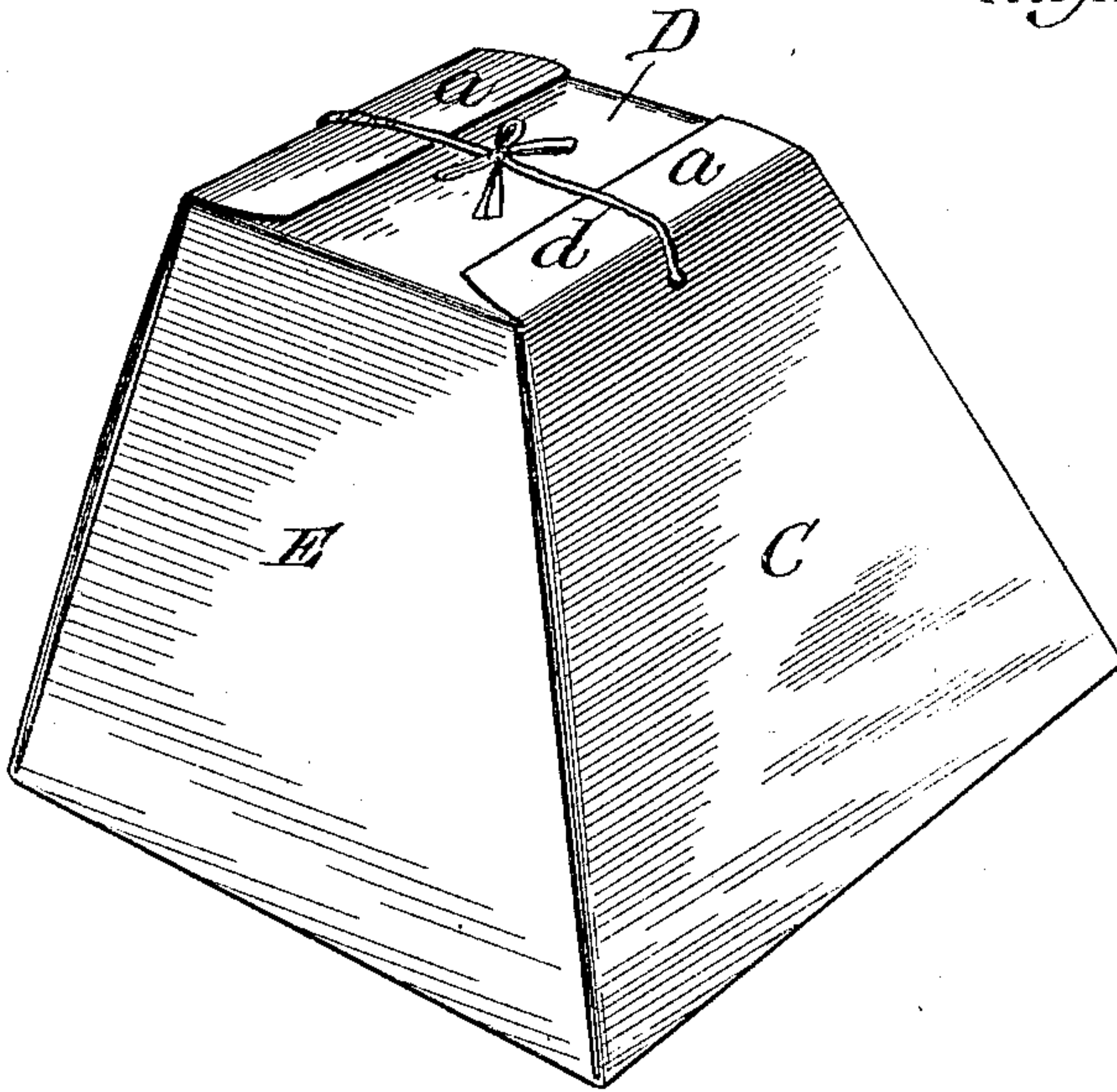
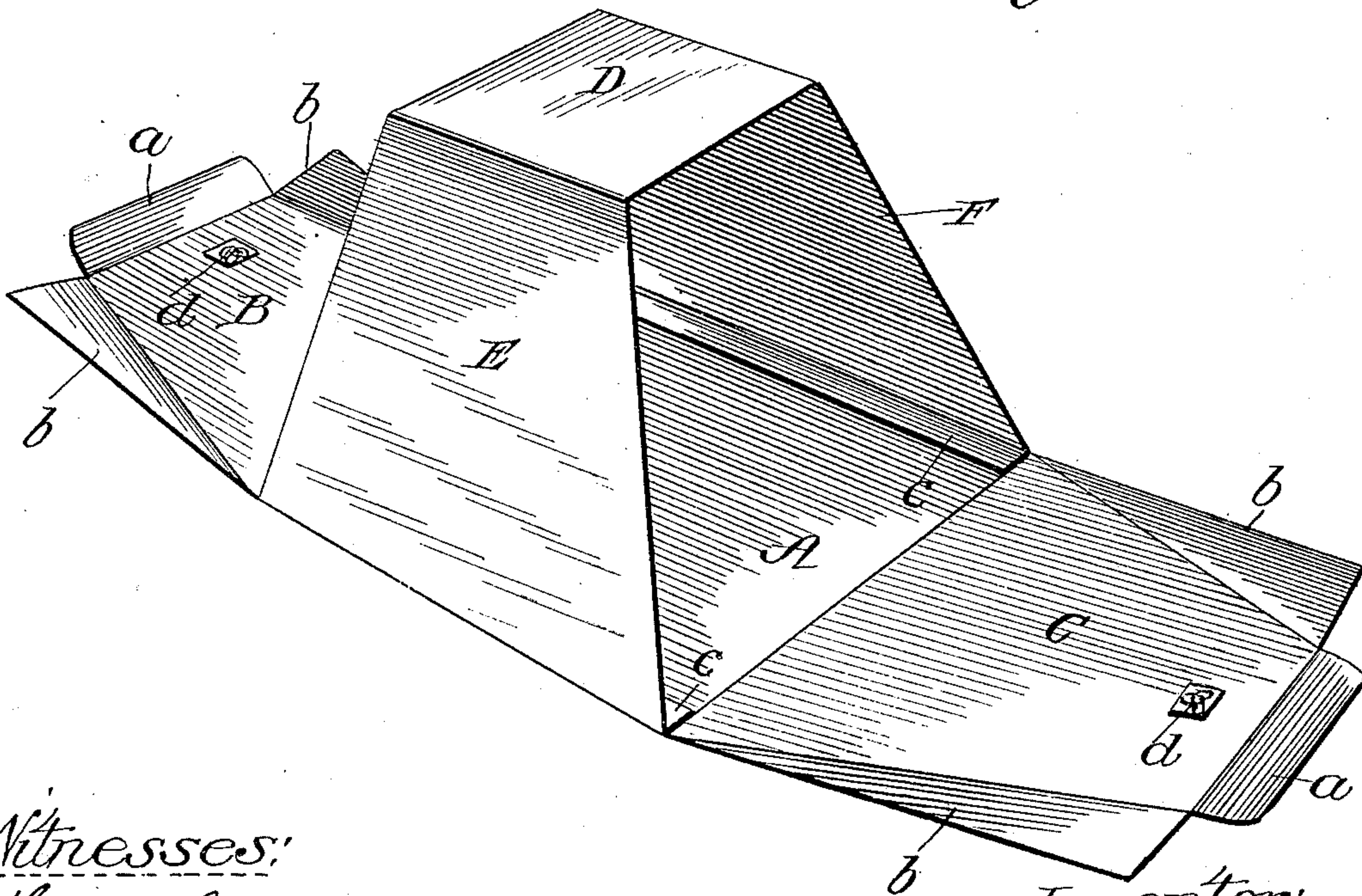


Fig. 8



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UNITED STATES PATENT OFFICE.

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HAT-BOX.

SPECIFICATION forming part of Letters Patent No. 687,968, dated December 3, 1901.

Application filed March 8, 1901. Serial No. 50,364. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. REBER, a citizen of the United States of America, residing at Chicago, in the county of Cook, in the State of Illinois, 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 to collapsible or knock-down boxes made of heavy paper or paper-board and adapted more particularly for the reception of ladies' hats and bonnets; and it has for its object the production of a superior box of this character which may be made from less stock, and consequently at less cost, than those heretofore in use. Its novelty will be hereinafter set forth, and more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the complete box in closed box form; Fig. 2, a perspective view of the box in collapsed form, ready for storage or shipment in compact form prior to use; Fig. 3, a view corresponding to Fig. 2 with the box partially opened out; Fig. 4, another similar view with the box still further opened out; Fig. 5, another view with the box in open position ready for the reception of a hat or bonnet; Fig. 6, a similar view with one end of the box closed and the side extensions at the opposite ends of the box folded inward ready for the end of the box to be brought upward to closed position, and Figs. 7 and 8 perspective views showing a modification.

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

My novel box (shown in Figs. 1 to 6) is composed of a rectangular bottom portion A, two end walls B C, preferably constituting integral end extensions of the bottom A and provided with short extensions or end flaps *a a*, a rectangular top D smaller than the bottom A and connected to the latter by trapezoidal-shaped side walls E F, provided with end extensions or flaps *b*. The top D and sides E F, with their extensions *b*, are preferably formed of a single piece of material, and the sides are provided at their lower edges with pasting-flaps *c*, adapted to be pasted to the

upper surface of the bottom portion A at its opposite edges. The end walls B C are likewise trapezoidal in shape, their bases corresponding in length to the width of the bottom portion A of the box and their tops corresponding to the width of the top D of the box. The box thus formed is opened out into the shape shown in Fig. 5 to receive the hat or bonnet, after which the end flaps *b* of the sides E F are folded inward at the opposite ends of the box, as in Fig. 6, and the end walls B C then brought upward and inward against them and their end extensions *a a* tucked in beneath the top D between the latter and the upper ends of the extensions *b b*, Fig. 1, and the parts secured in box form by tying the strings *d*, which are secured to the end walls B C for that purpose.

For purposes of storage and shipment in compact form prior to use the box may be readily collapsed and folded into the flat form shown in Fig. 2, being first opened outward from the position shown in Fig. 6 to that shown in Fig. 5, then the side E and connected end of the top D pressed inward and downward, as shown in Fig. 4, and the top D and side F then allowed to drop upon the side E, as shown in Fig. 3, after which the end walls B C may be folded over upon the top and sides, as shown in Fig. 2. This collapsing and folding of the box into flat form within the area of its rectangular base or bottom is provided for by so proportioning the bottom, sides, and top of the box relatively to each other that the length of each of the sides E F equals one-half the sum of the widths of the top and bottom between said sides or, in other words, so that one-half the width of the top will equal the difference between the length of one of the sides and one-half the width of the bottom. Under these proportions the width of the top will correspond to the distance between the upper edges of the sides when the latter lie flat upon one another on the bottom of the box, and hence permit them to be readily collapsed to and opened out from that position. By following these proportions the proper-sized top for any given-sized bottom and sides or the proper sides for any given-sized top and bottom may be readily deter-

mined, so that the completed box will fold upon itself in the manner described. Thus the box illustrated in the drawings has a twelve-inch bottom, ten-inch sides, and eight-inch top. If it were desired to provide it with a six-inch top, its sides would have to be made nine inches in length, while a ten-inch top would require sides eleven inches in length, and so on.

I am of course aware that collapsible paper boxes having rectangular top, bottom, and sides hinged upon and permanently connected to each other are old, and I am also aware that collapsible paper boxes having trapezoidal-shaped sides connecting a rectangular bottom with a two-part separable top of less size are old; but so far as I am aware I am the first in the art to produce a collapsible paper box having a rectangular bottom, trapezoidal-shaped sides, and a single-piece top, all permanently connected or hinged together, so that the top and sides may be collapsed and pressed down flat upon the bottom without any disconnection of one from the other. A box of the character described having its top and bottom connected by trapezoidal-shaped sides is not only stronger and more rigid than a box having rectangular sides and ends connecting a top and bottom of equal size and more nearly approximates the shape of the article it is intended to hold, but by forming such box from two separate pieces of stock, one comprising the bottom and the two ends B C and their extensions and the other the top and two sides E F, I am enabled to provide the triangular corner-flaps or side extensions *b* for closing the corners of the box and yet cut the box from stock of the same width as the bottom of the box, which permits a material saving of stock and consequent economy in the manufacture of such boxes and is a result not attainable in boxes having rectangular sides and ends or in boxes formed from a single piece of stock and having trapezoidal-shaped sides and ends. Thus in a box such as mine having a twelve-inch bottom and an eight-inch top each of the sides E F may be provided with side extensions or corner-flaps *b* two inches wide at their top and tapering to points at their lower ends and the box yet be cut from stock only twelve inches wide, whereas to provide two-inch side extensions or corner-flaps integral with the sides of a rectangular box having a twelve-inch bottom it would be necessary to cut the box from stock sixteen inches wide. A box having trapezoidal-shaped sides and cut from a single piece of paper of course requires even wider stock and involves still greater expense of manufacture, while the additional advantages of my box, due to its single-piece top permanently connected to the sides and bottom, as compared with a similarly-shaped box having a two-part top the halves of which must overlap and be connected together by interlocking tongues and slits or otherwise in assembling the box and be disconnected

from each other in order to collapse it into flat form are obvious. Substantially the same advantages and result may be attained by providing the end walls B C of the box with the side extensions *b b*, as shown in Figs. 7 and 8, instead of providing said extensions upon the side walls E F, as in Figs. 1 to 6, as will be readily understood, in which event the side extensions *b* of said ends B C will be bent inward at approximately right angles to said ends and tucked within the side walls E F when the end walls are brought up to closed position, as in Fig. 7. In this case also the end extensions *a a* of the end walls B C will overlap and be bent down upon the top D of the box, as in Fig. 7, instead of being tucked in beneath said top and between the latter and the upper ends of the extensions *b*, as in Fig. 1.

Having thus fully described my invention, I claim—

1. A collapsible paper box having a bottom, top and sides, the top and sides being hinged together so as to fold inwardly into flat form with the top between the sides; substantially as described.

2. A collapsible paper box having a rectangular bottom, a smaller rectangular top formed of a single piece, and trapezoidal-shaped sides hinged to said bottom and top; substantially as described.

3. A collapsible paper box having a rectangular bottom, a smaller rectangular top formed of a single piece, and trapezoidal-shaped sides, hinged together so as to fold inwardly into flat form within the area of the bottom of the box without disconnection of one from the other; substantially as described.

4. A collapsible paper box having a rectangular bottom, a smaller rectangular top formed of a single piece, two trapezoidal-shaped end walls hinged to said bottom and formed integral therewith, and two trapezoidal-shaped side walls hinged to said top and formed integral therewith and hinged at their lower ends to the opposite edges of the bottom of the box, said top and side walls being collapsible inwardly into flat form upon the bottom of the box and end walls foldable over them, so that the entire box may be collapsed into flat form within the area of its bottom; substantially as described.

5. A collapsible paper box having trapezoidal-shaped side and end walls two opposite ones of which are provided with integral triangular-shaped side extensions or corner-flaps tapering to a point from their upper to their lower ends and adapted to be folded inward beneath and confined by the other two walls, to close the corners of the box; substantially as described.

6. A collapsible paper box comprising a rectangular bottom, a smaller rectangular top, two trapezoidal-shaped end walls hinged to said bottom, and two trapezoidal-shaped side walls hinged at their upper ends to the top

and at their lower ends to the bottom of the box, two opposite ones of said four walls being also provided with integral triangular-shaped side extensions or corner-flaps tapering to a point from their upper to their lower ends and adapted to be folded inward beneath and confined by the other two walls, to close the corners of the box; substantially as described.

7. A collapsible paper box comprising a rectangular top formed of a single piece, a rectangular bottom, and trapezoidal-shaped side and end walls hinged to said bottom, two of said walls being hinged at their upper edges to the opposite edges of the single-piece top, and two of them being provided with integral triangular-shaped side extensions or corner-flaps tapering from their upper to their lower ends and adapted to be folded inward beneath and confined by the other two walls, to close the corners of the box; substantially as described.

8. A collapsible paper box comprising a rectangular bottom, trapezoidal-shaped end walls hinged to the opposite sides thereof and formed integral therewith, a rectangular top, trapezoidal-shaped side walls hinged at their upper edges to opposite sides of said top and formed integral therewith and hinged at their lower edges to opposite sides of the bottom, and two of said walls on the opposite sides of the box being provided with integral triangular-shaped side extensions or corner-flaps tapering from their upper to their lower ends and adapted to be folded inward beneath and confined by the other two walls, to close the corners of the box; substantially as described.

9. A collapsible paper box comprising a rectangular bottom, a smaller rectangular top formed of a single piece, trapezoidal-shaped end walls hinged to the opposite edges of the bottom, trapezoidal-shaped side walls hinged at their lower ends to opposite edges of the bottom and at their upper ends to opposite edges of the single-piece top and provided with integral triangular-shaped side extensions or corner-flaps tapering from their upper to their lower ends and adapted to be folded inward beneath and confined by the end walls, to close the corners of the box; substantially as described.

10. The herein-described collapsible box, composed of the bottom A, the trapezoidal-shaped end walls B C hinged thereto and pro-

vided with the end extensions *a a*, the top D, the trapezoidal-shaped side walls E F hinged at their upper edges to the opposite edges of the top D and at their lower edges to the opposite edges of the bottom A, and the extensions *b b* tapering from their upper ends to points at their lower ends and hinged to two opposite walls of the box and serving to close the corners of the box, substantially as set forth.

11. The herein-described collapsible box, composed of the bottom A, the trapezoidal-shaped end walls B C hinged thereto and provided with the extensions *a a*, the top D, and the trapezoidal-shaped side walls E F hinged at their upper edges to the opposite edges of the top D, and at their lower edges to the opposite edges of the bottom A, and provided at their opposite edges with the extensions *b b* tapering from their upper ends to points at their lower ends and adapted to be intumed and confined by the end walls B C substantially as set forth.

12. The herein-described collapsible box, composed of the bottom A, the trapezoidal-shaped end walls B C constituting integral end extensions of the bottom A and themselves provided with the end extensions *a a* and the strings *d*, the top D, the trapezoidal-shaped side walls E F formed integral with the top D and separate from the bottom A and end walls B C and provided at their lower edges with the intumed pasting-flaps *c c* pasted to the bottom A at its opposite edges, and the extensions *b b* formed integral with two opposite walls of the box and serving to close the corners thereof, substantially as set forth.

13. The herein-described collapsible box, composed of the bottom A, the trapezoidal-shaped end walls B C constituting integral end extensions of the bottom A and themselves provided with the end extensions *a a* and the strings *d*, the top D, and the trapezoidal-shaped side walls E F formed integral therewith and separate from the bottom A and end walls B C and provided at their opposite edges with the extensions *b b* and at their lower edges with the intumed pasting-flaps *c c* pasted to the bottom A at its opposite edges, substantially as set forth.

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