

(No Model.)

2 Sheets—Sheet 1.

L. D. BENNER.
BAG.

No. 545,443.

Patented Sept. 3, 1895.

Fig. 1.

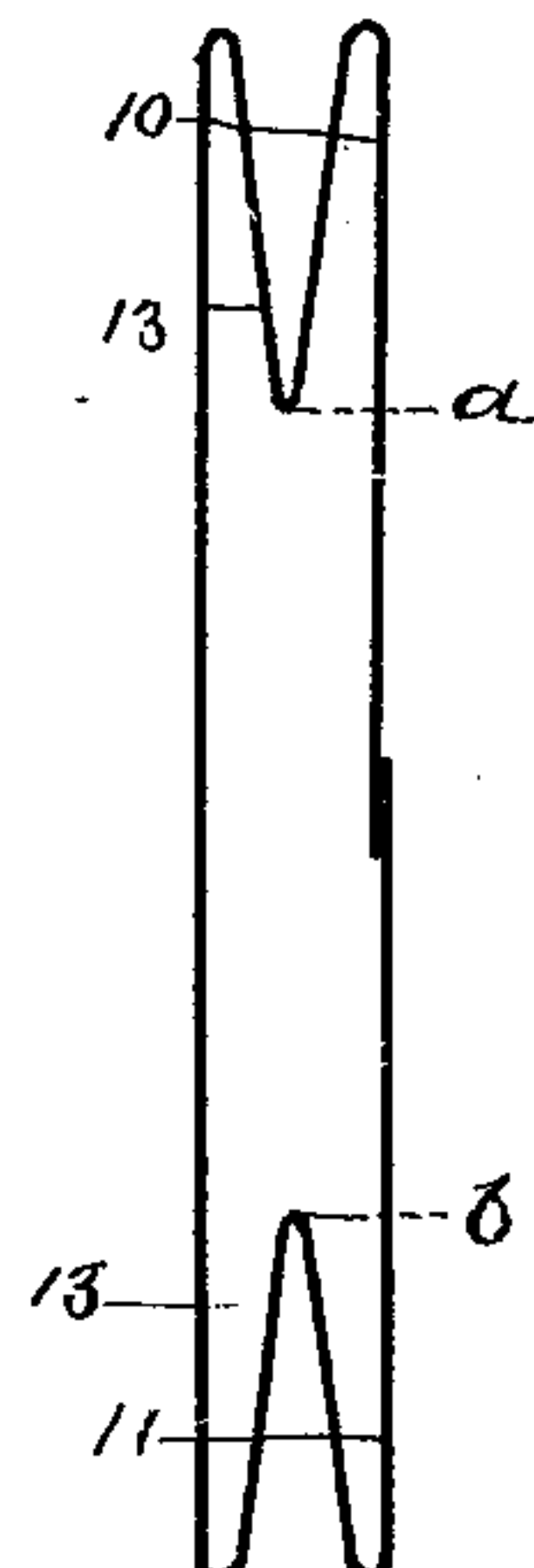
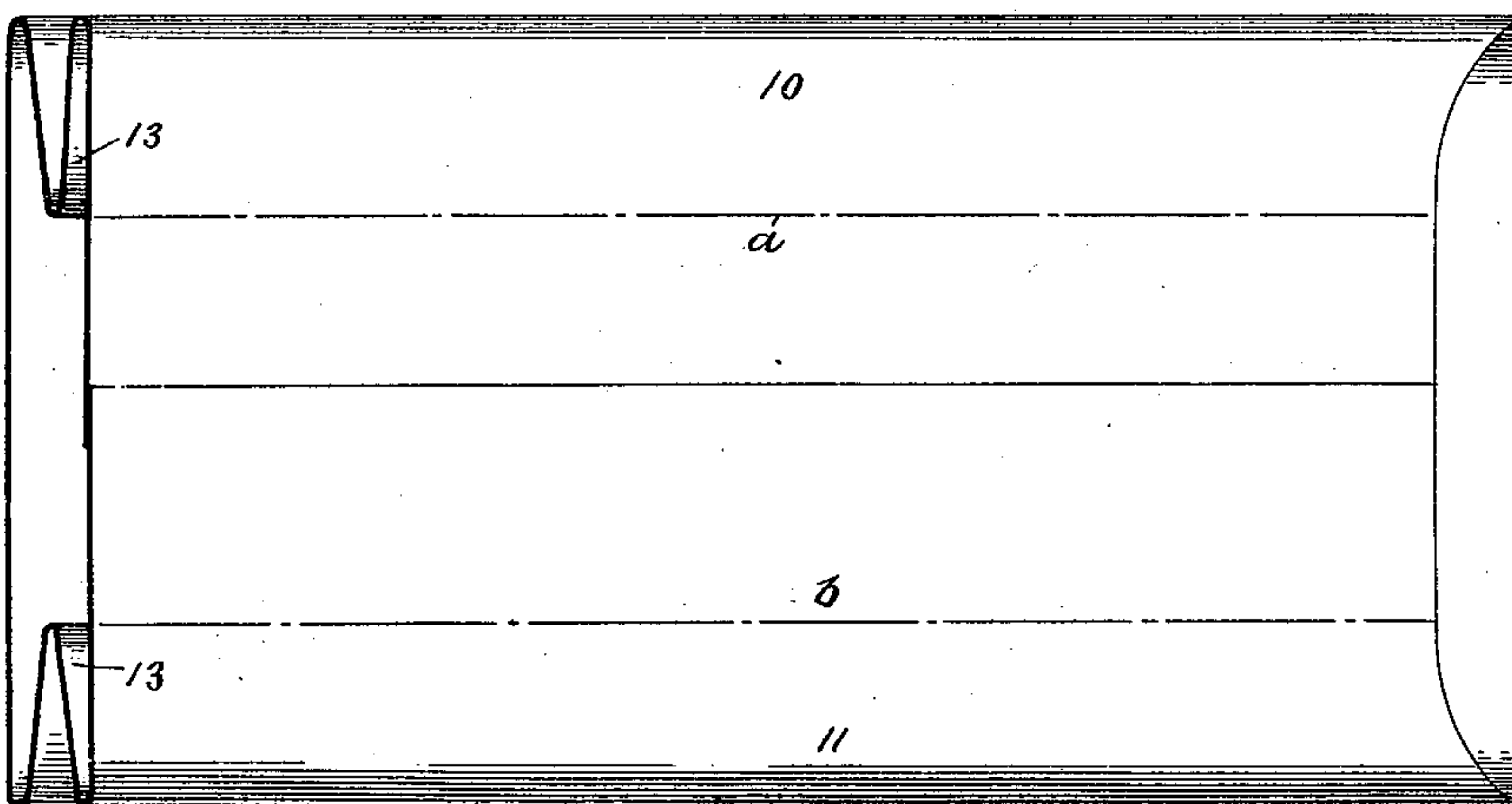


Fig. 2.

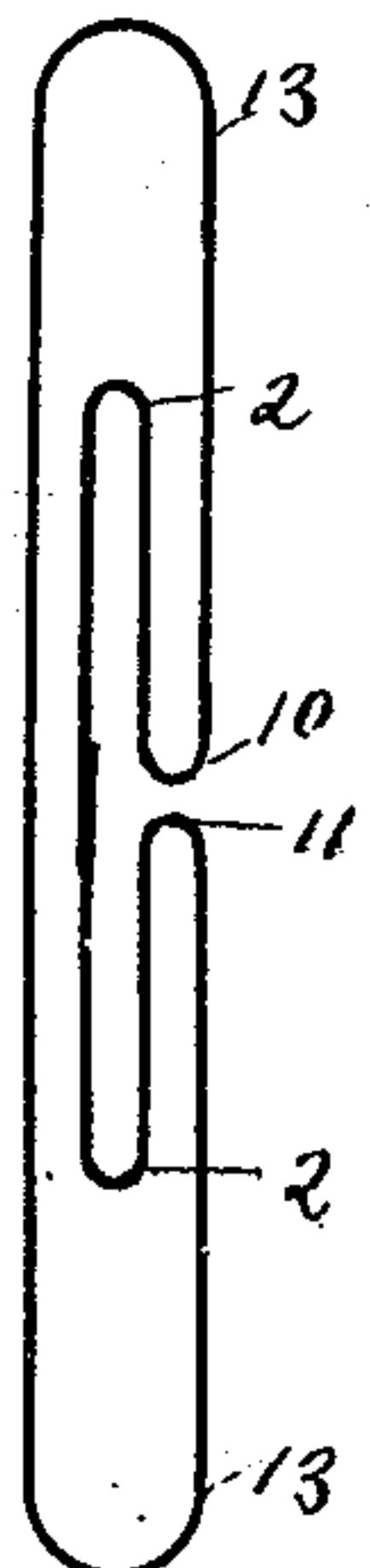
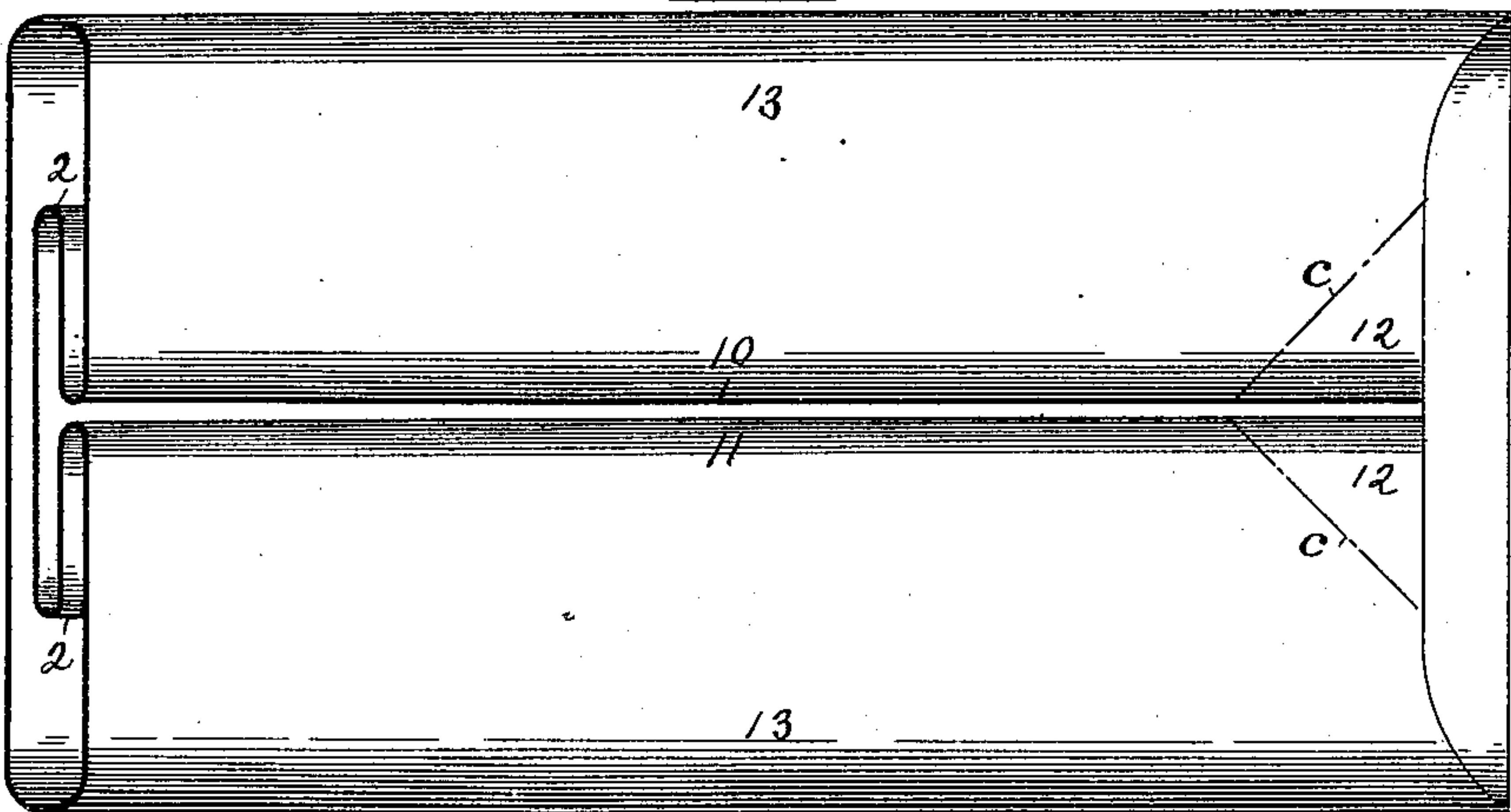
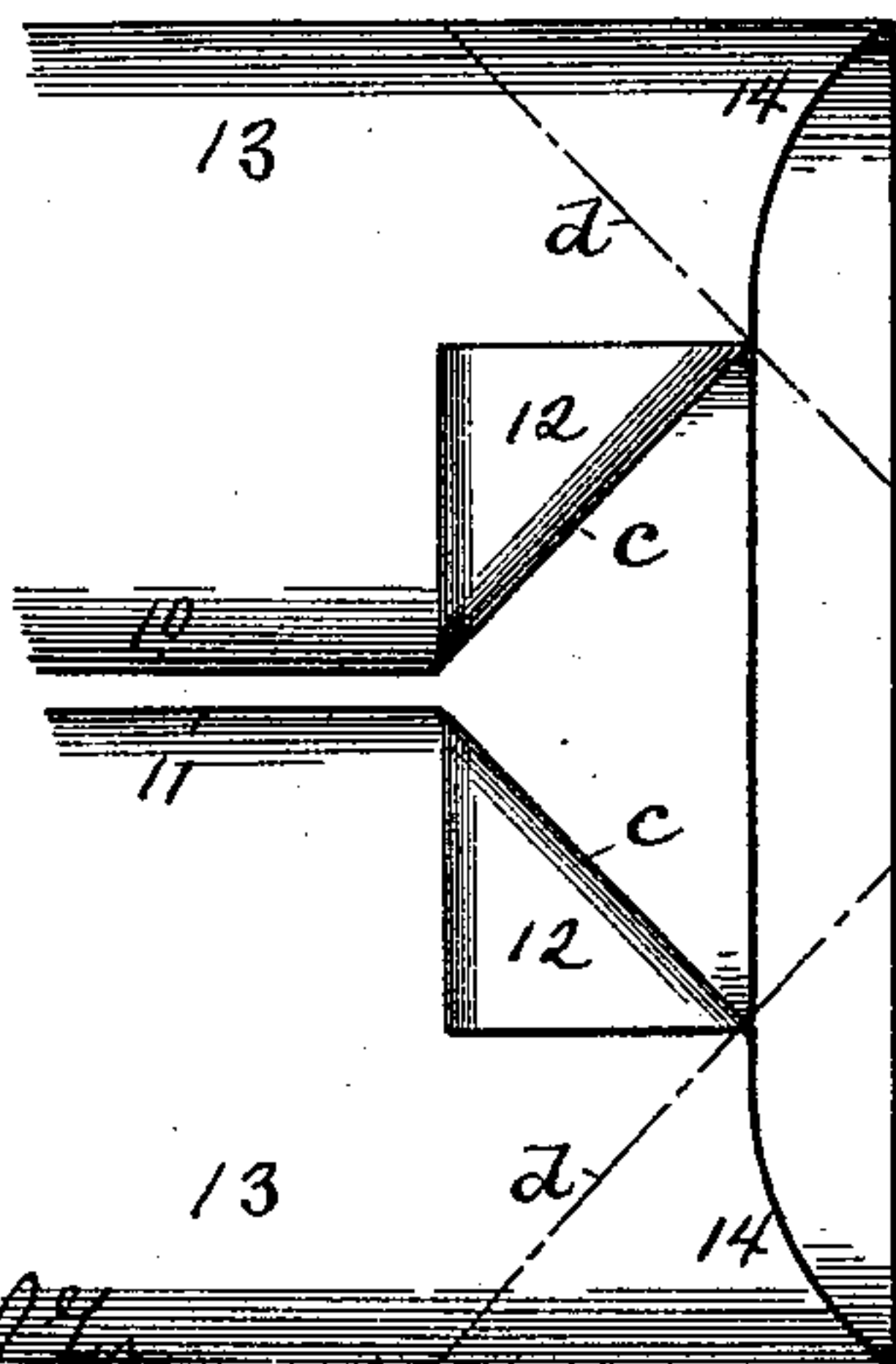
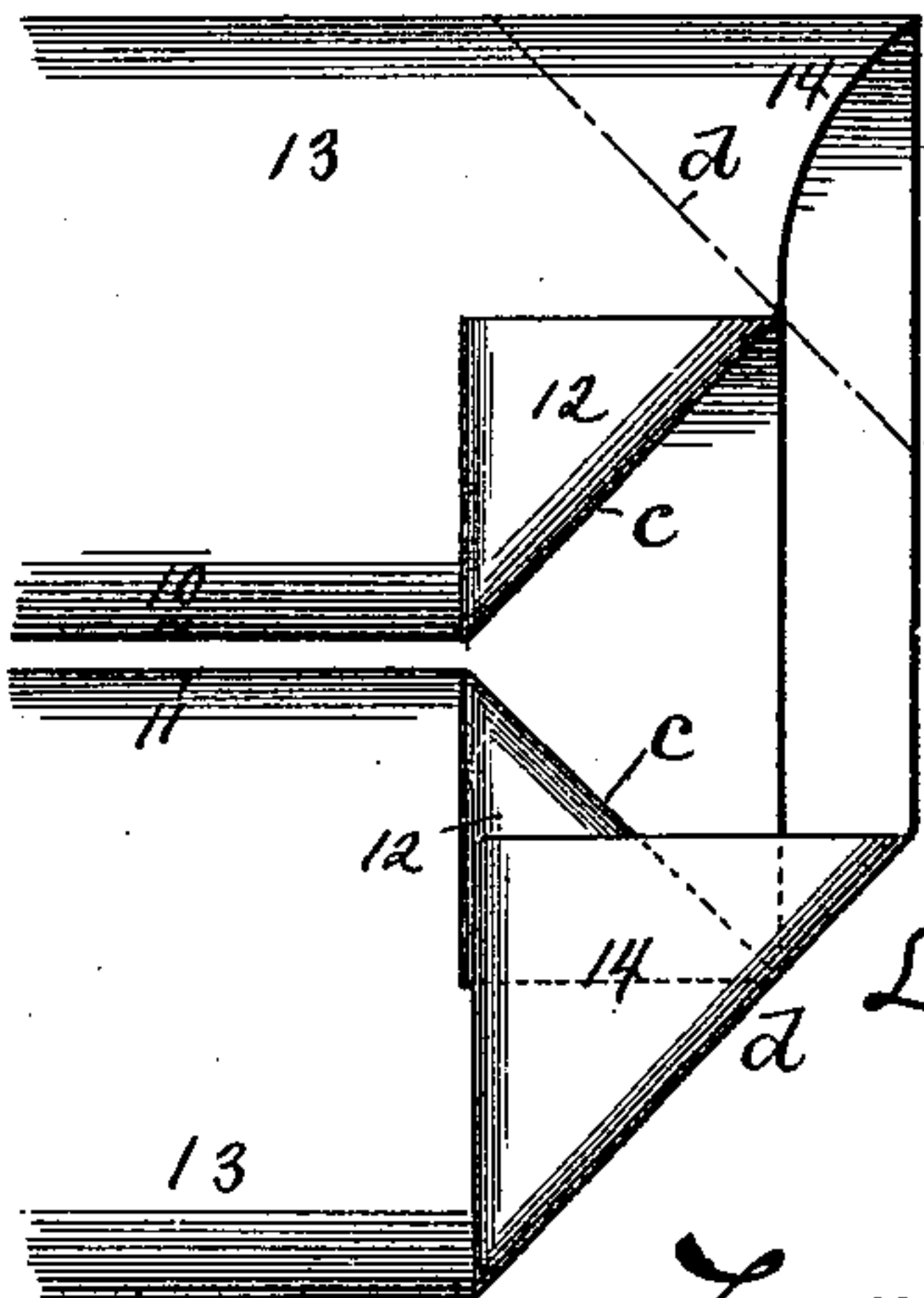


Fig. 3.



Attest:
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Fig. 4.



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attys

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Fig. 5.

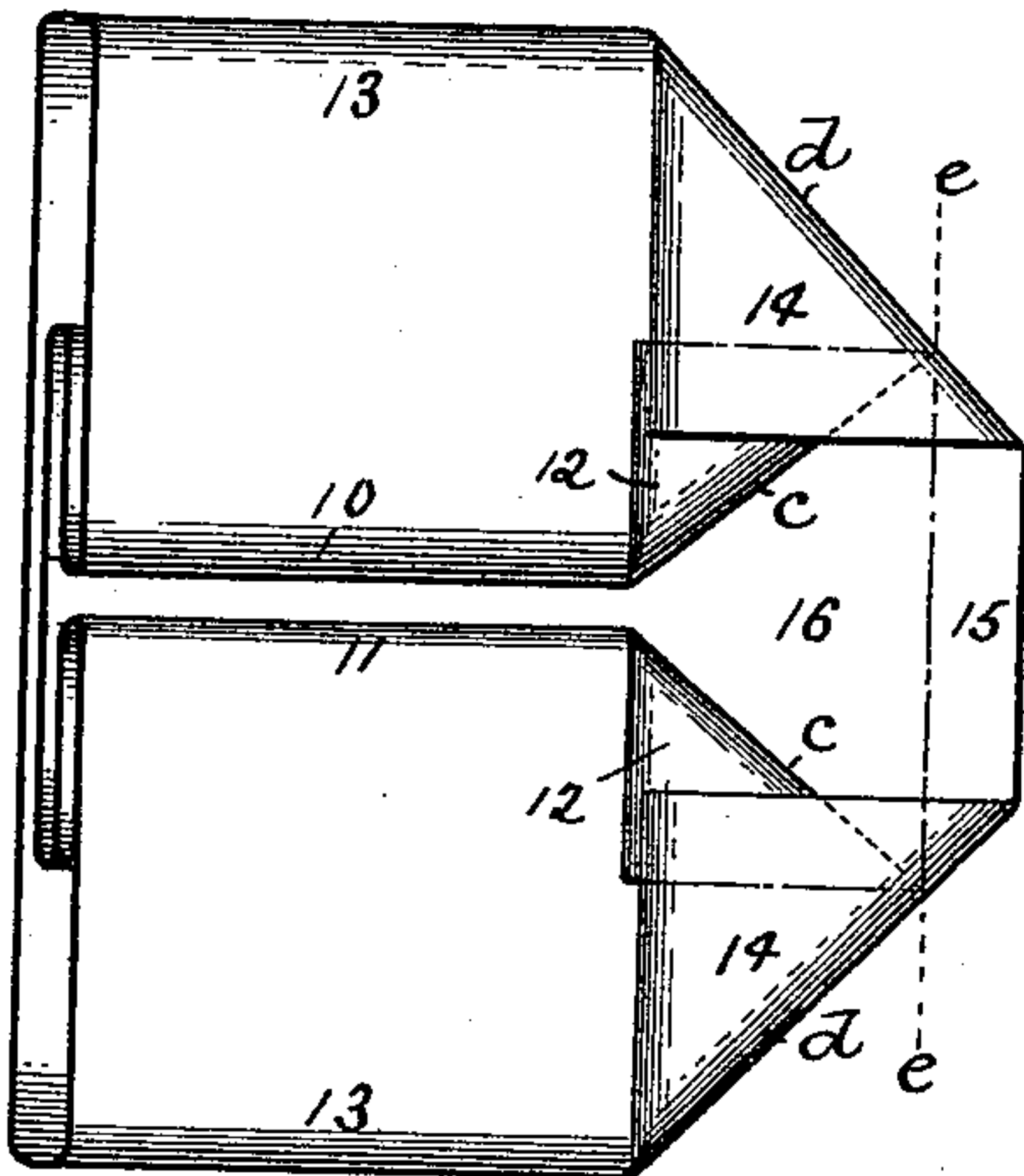


Fig. 6.

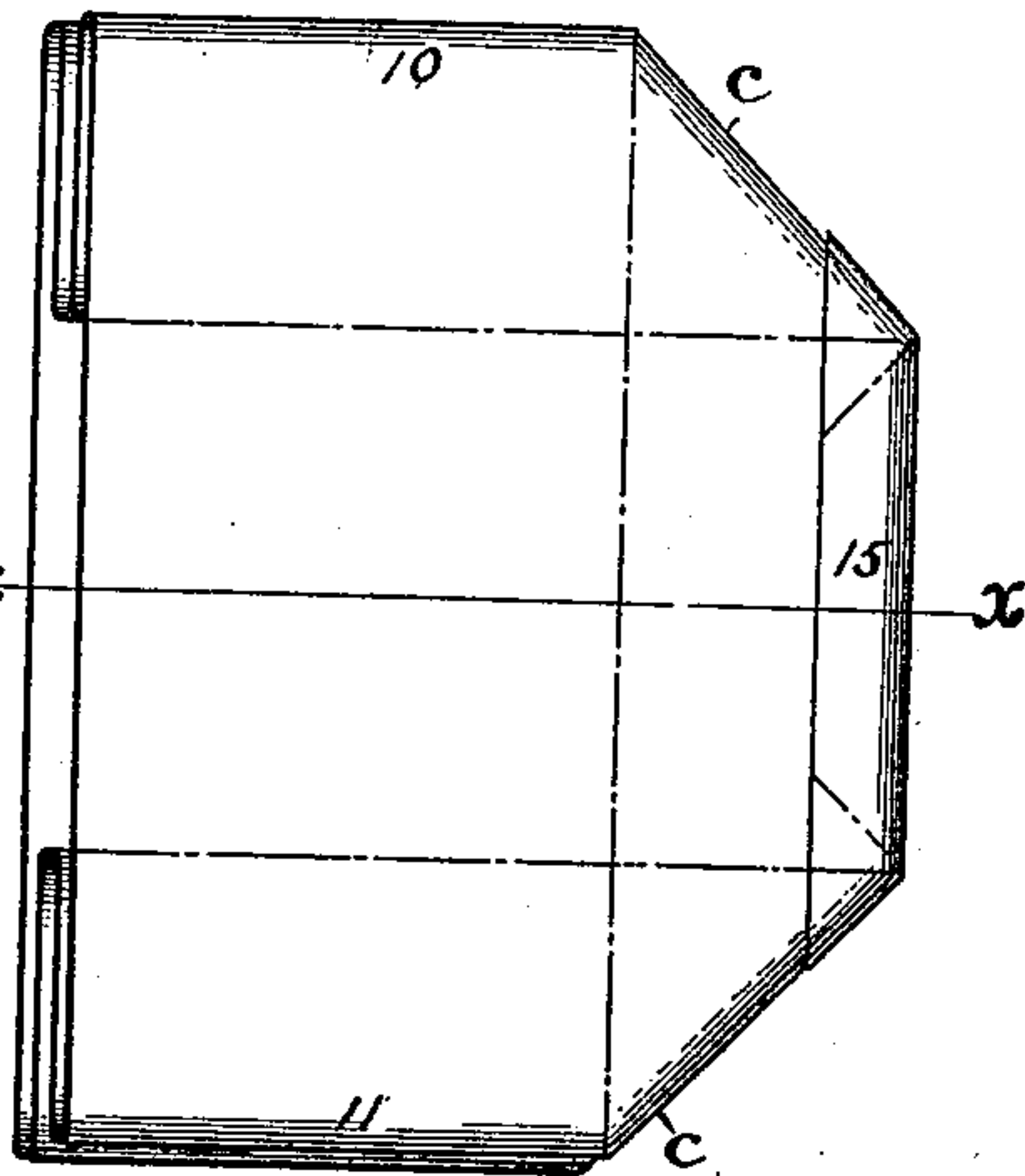


Fig. 7.

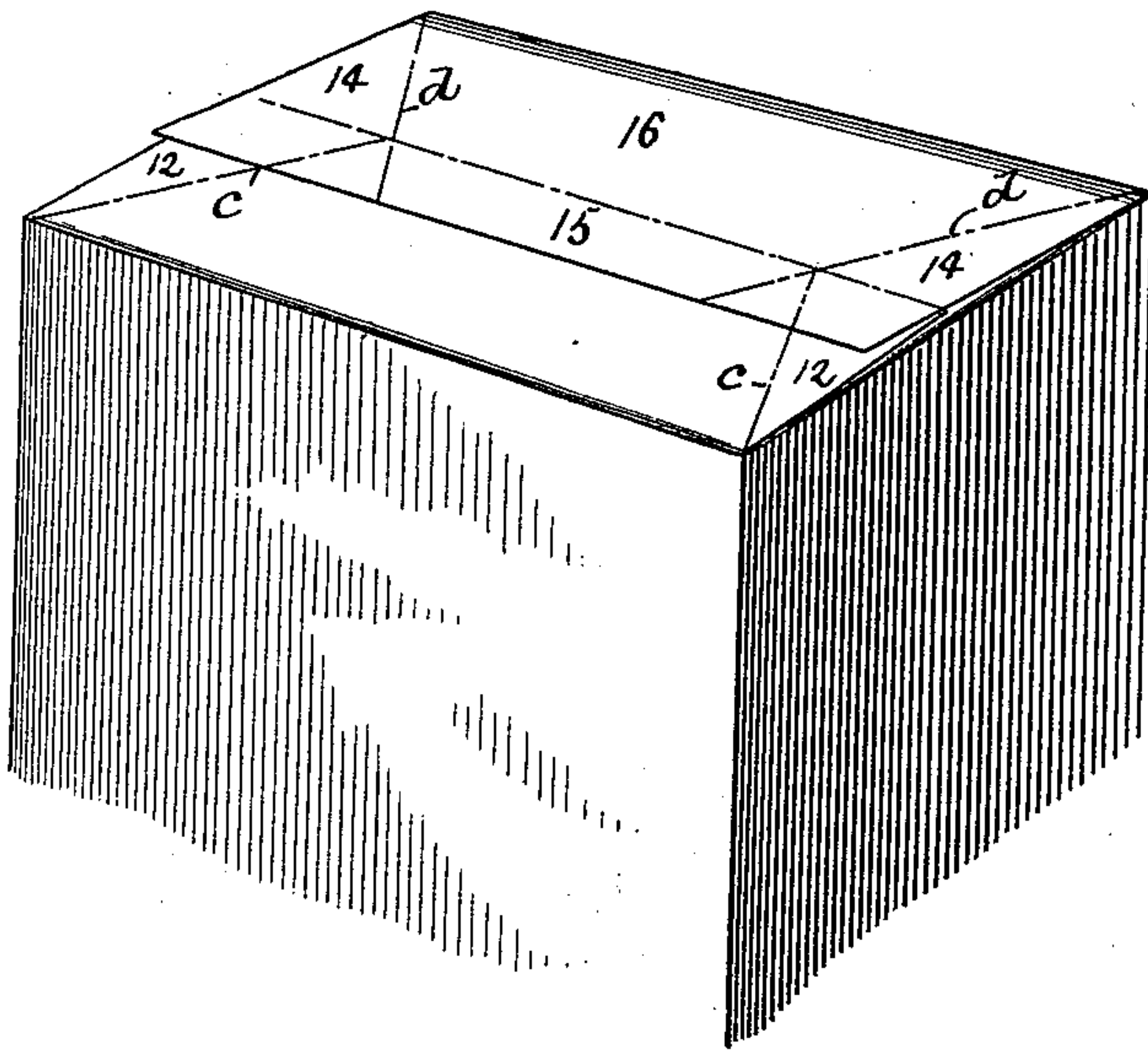


Fig. 7.

Witnesses

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15
16

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By Foster & Freeman

Attorney

UNITED STATES PATENT OFFICE.

LORENZO D. BENNER, OF PEORIA, ILLINOIS, ASSIGNOR TO THE UNION PAPER BAG MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

BAG.

SPECIFICATION forming part of Letters Patent No. 545,443, dated September 3, 1895.

Application filed June 23, 1887. Serial No. 242,333. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. BENNER, a citizen of the United States, residing at Peoria, Peoria county, Illinois, have invented certain new and useful Improvements in Bags, of which the following is a specification.

This invention relates generally to that class of bags known as "bellows-sided bags;" and it consists in a novel mode of forming the bottoms on that class of bags and in the bag so made.

In the drawings, Figure 1 is a plan and edge view of the ordinary bellows-sided-bag blank from which the bag is to be formed. Figs. 2 to 6, inclusive, illustrate by plan views the various steps taken in the formation of the bag-bottom. Fig. 7 is a longitudinal section taken on the line *xx* of Fig. 6, and Fig. 8 is a perspective view of the complete bag distended and looking at its bottom.

Many methods of closing the ends of bellows-sided tubes or forming the bottoms thereof have been proposed, all aiming to provide a simple and effective mode by which this may be effected.

One of the principal objects of the present invention is to form the bottom entirely on one side of the tube instead of forming parts of it on both sides of the tube, a mode that is exceedingly difficult to follow by automatic devices.

As a better understanding of the present invention will be had from a detailed description of the method employed in forming the bag-bottom, all preliminary description thereof will be omitted and such detailed description will now be given in connection with the accompanying drawings.

Bags of the class to which this invention appertains are commonly made from an endless web of paper or other suitable material that is folded on longitudinal lines by suitable means into bellows-sided tubular form, as shown in Fig. 1, in such manner that the edges of the web meet over the center of the tube and are united by a longitudinal line of paste, said tube being afterward severed transversely into bag-lengths, ready to be formed into bags by properly closing one of their ends. The invention of course contemplates the employment, in practice, of such an

endless web or sheets or blanks as the circumstances of manufacture may require.

Starting with a bag-blank formed in the manner shown in Fig. 1, the opposite edges 10 11 of one side of the blank are folded over on the longitudinal lines *a b*, respectively, so as to bring said edges over the center of the blank and adjacent to each other, so that the inward folded portions 13 are turned to the outside of the blank, as shown in Fig. 2. This will be the method adopted to effect this result when a tubular blank is formed, as in Fig. 1. It of course is obvious that the blank may be formed in the first instance in the form shown in Fig. 2. In this form the inward side folds of the bellows sides are removed from the sides of the blank and equivalent folds 2 formed over the central portion of the body of the blank. The ends of the portions 13 of the blank in this latter form will then be preferably creased on the diagonal lines *c*, so as to form triangular pieces 12, as in Fig. 2. These triangular pieces 12 are turned backward over on said lines *c* onto their respective adjacent portions of the portions 13 of the blank, as seen in Fig. 3. The blank is then preferably creased (it may have been done simultaneous with the creases *c*) upon the lines *d*, forming triangular corner end pieces 14. Each of these corner end pieces 14 are folded over on said creased lines *d* onto the body of the blank, as seen in Figs. 4 and 5, and partially overlying the triangular pieces 12, previously folded down. The inward turned-in portions 13 are then each turned back on the longitudinal lines *a b* to their outer positions—that is to say, so that their edges 10 11 are laid contiguous with the edges of the underlying or other portion of the bag-blank forming the bellows-folds. This operation creases each of the corner end pieces 14 on a line coincident with the lines *a b* and folds it upon itself. At the same time the closing flaps 15 will be drawn upward on the transverse line *e* and stretched by the action of the diagonal edge of the triangular portions 12 downward and laid flat upon the end of the bag-blank, as shown in Fig. 6, thus completing the formation of the bag-bottom. Of course suitable lines of paste will be applied to the under side of the trian-

gular pieces 12, so as to secure them to portions 13, to the under side of the triangular corner pieces 14, to secure them to the body of the blank and to the triangular pieces 12, and to the flap 15 to secure it over the end of the blank, as will be well understood.

From the foregoing it will be seen that all the folds necessary to the formation of the bag-bottom are all formed upon one side of the blank, thus rendering the making of this class of bags more economical and better adapted to being formed by automatic devices than others, wherein some of the folds and portions are carried to the under side of the blank as well as to the upper side.

The bag thus completed is ready for the market and for use and may be opened or distended in the usual manner, so as to partake, when opened, of the rectangular form shown in Fig. 8.

I claim—

1. The herein described method of forming the bottoms of bags from bellows folded tubes,

which consists in folding the opposite edges of the upper plies of one side of the blank inward on longitudinal lines, folding outward the triangular corners or pieces of said inwardly folded portions, then folding inward the triangular corner pieces so they will lie over the body of the blank, then folding the inturned portion of the tube back on the longitudinal lines to their outer positions, and completing the bottom by folding over the end flap, substantially as described.

2. The herein described bag comprising the bellows folded tube provided with the triangular folded pieces 12, the triangular pieces 14, overlapping the pieces 12, and the folded end flap 15, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LORENZO D. BENNER.

Witnesses:

LUCIUS G. FISHER,
ANDEN BICKNELL.