

(Model.)

L. D. BENNER.

PAPER BAG.

No. 397,217.

Patented Feb. 5, 1889.

Fig. 1.

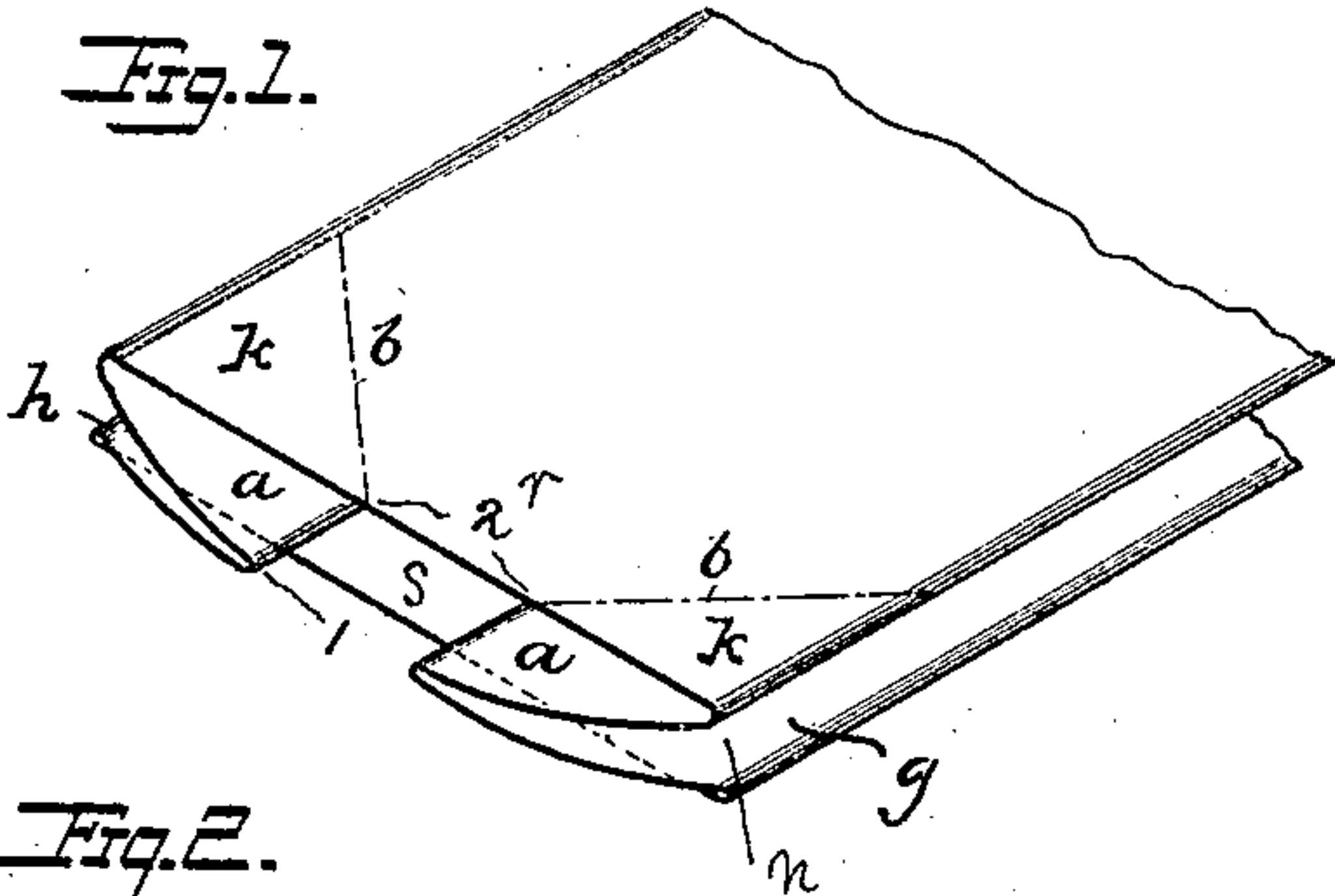


Fig. 4.

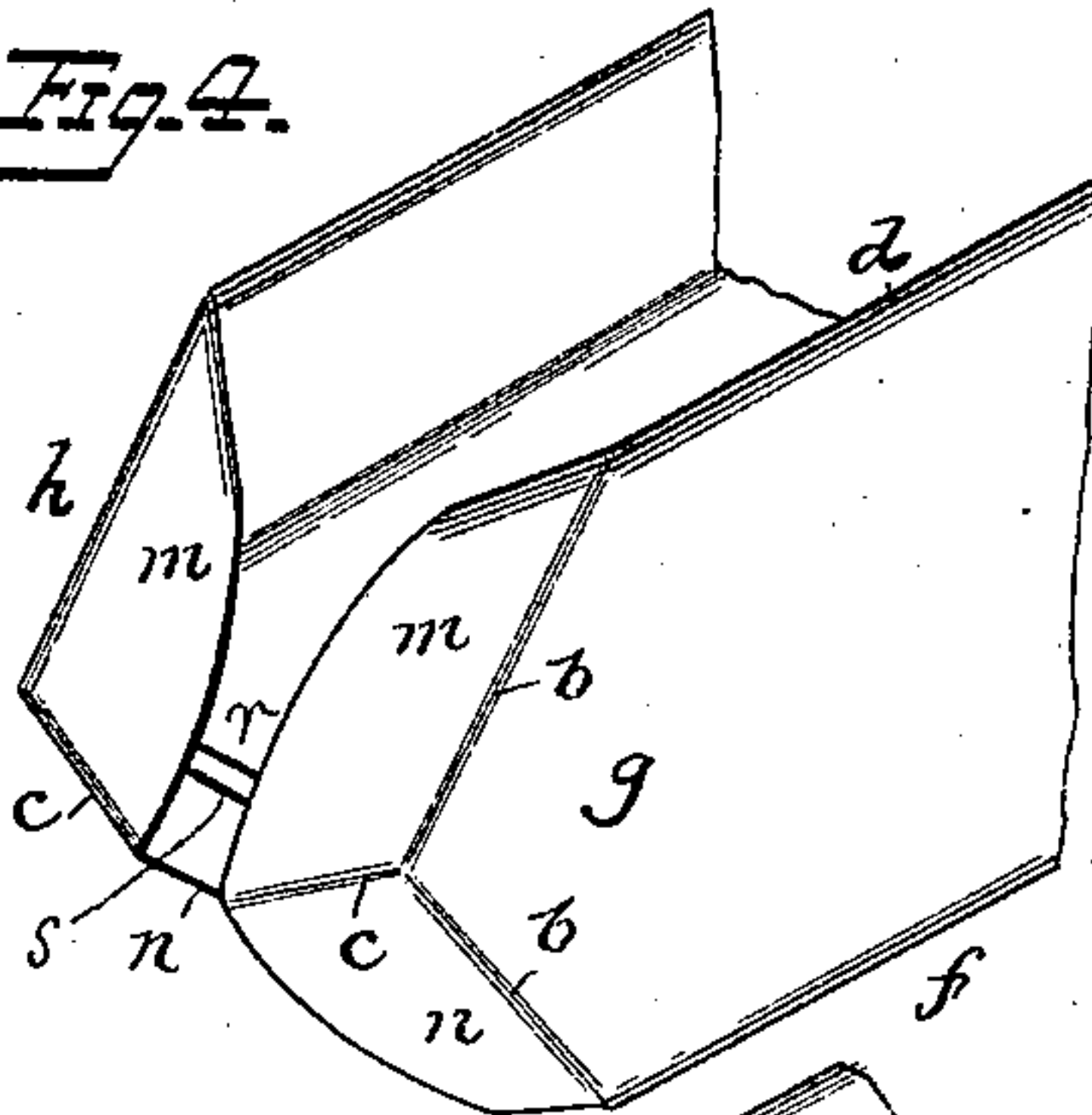


Fig. 2.

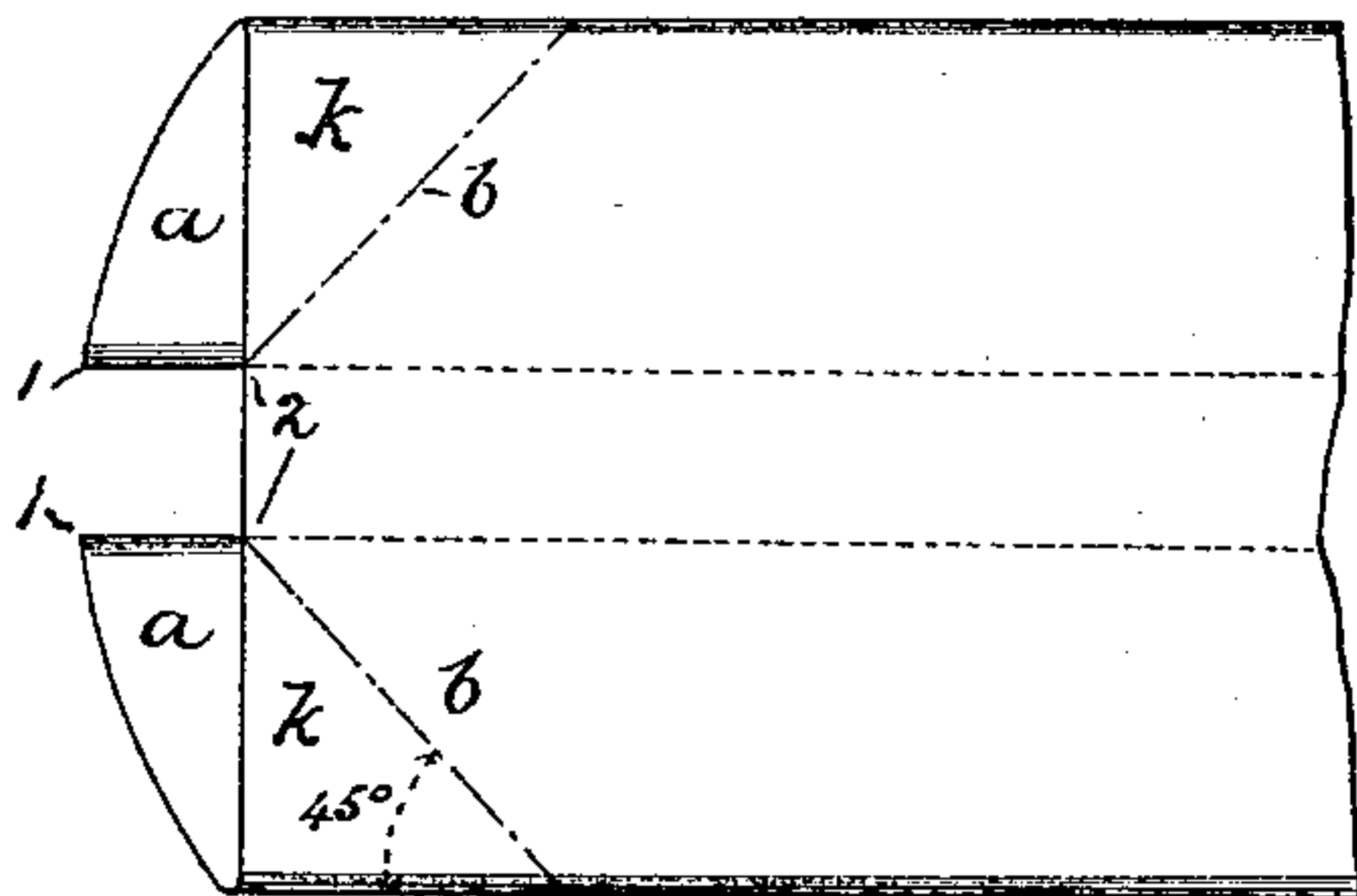


Fig. 5.

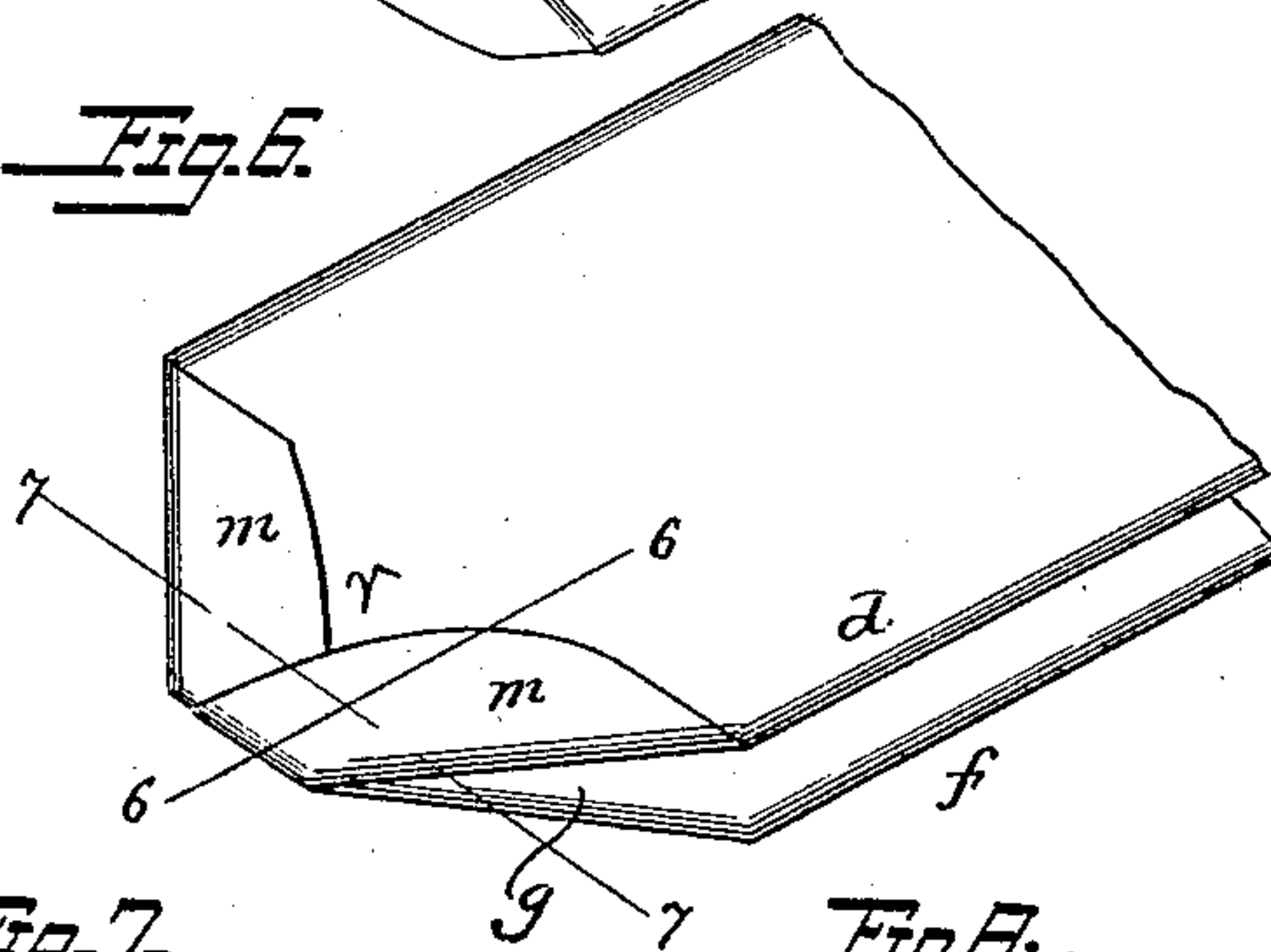


Fig. 3.

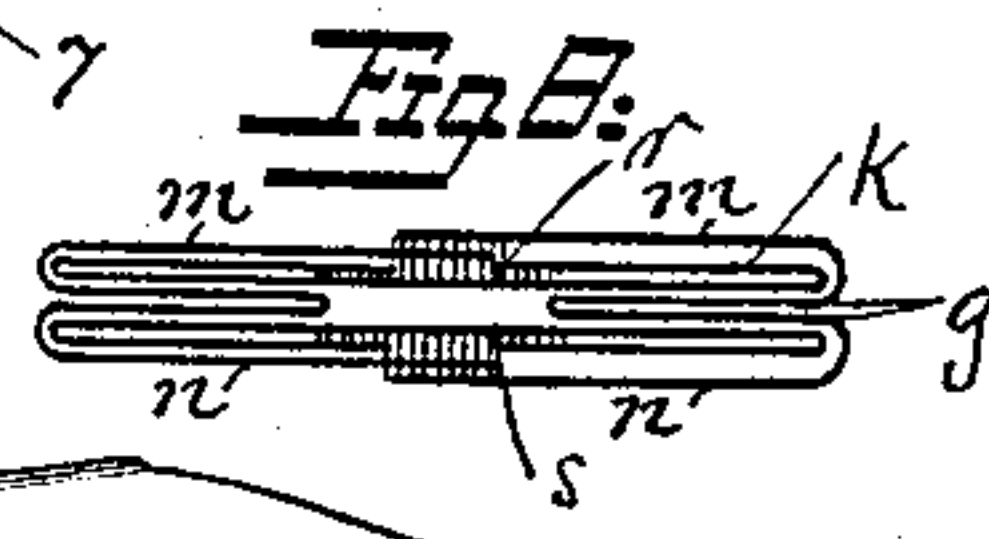
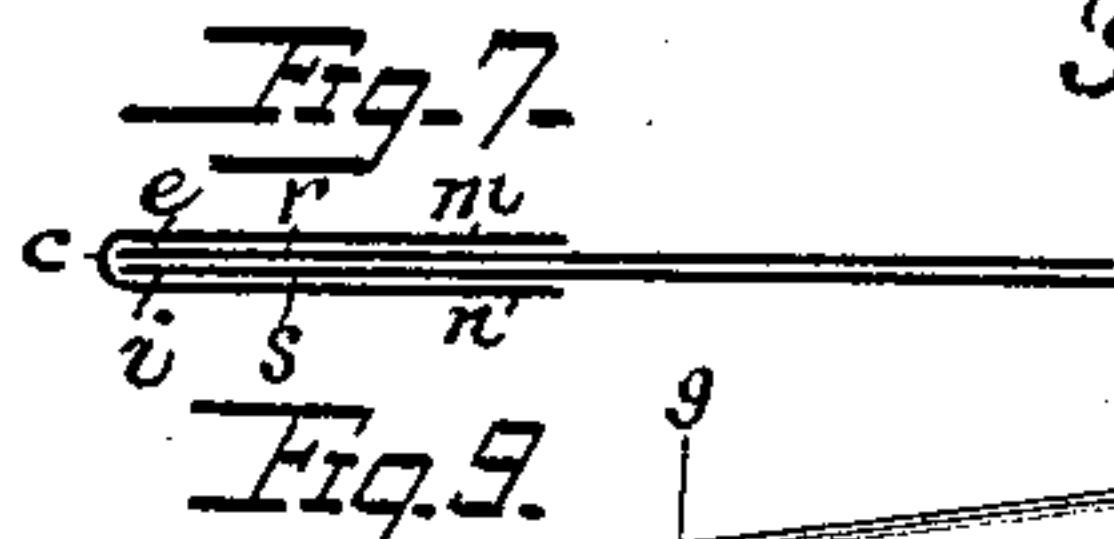
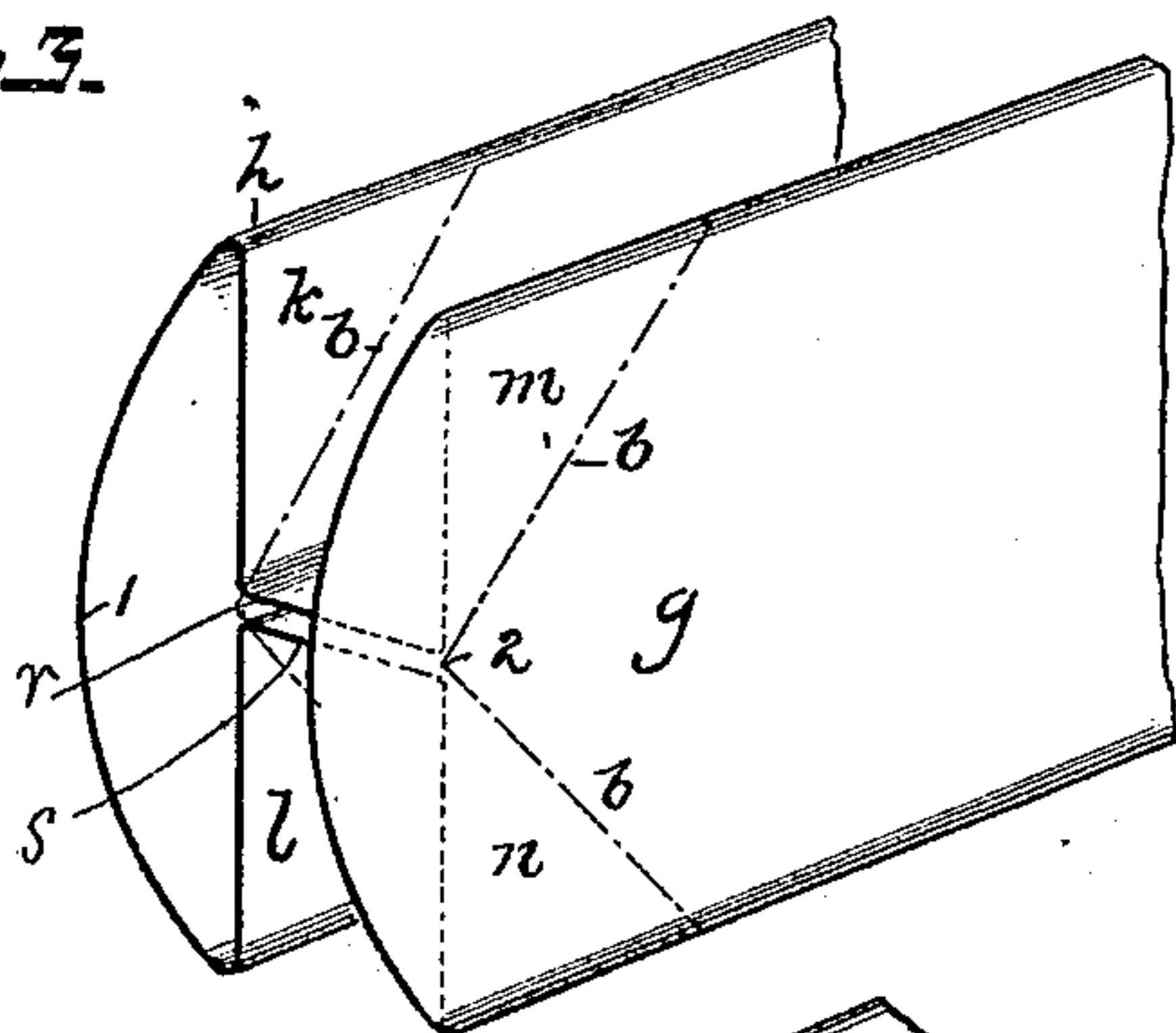


Fig. 9.

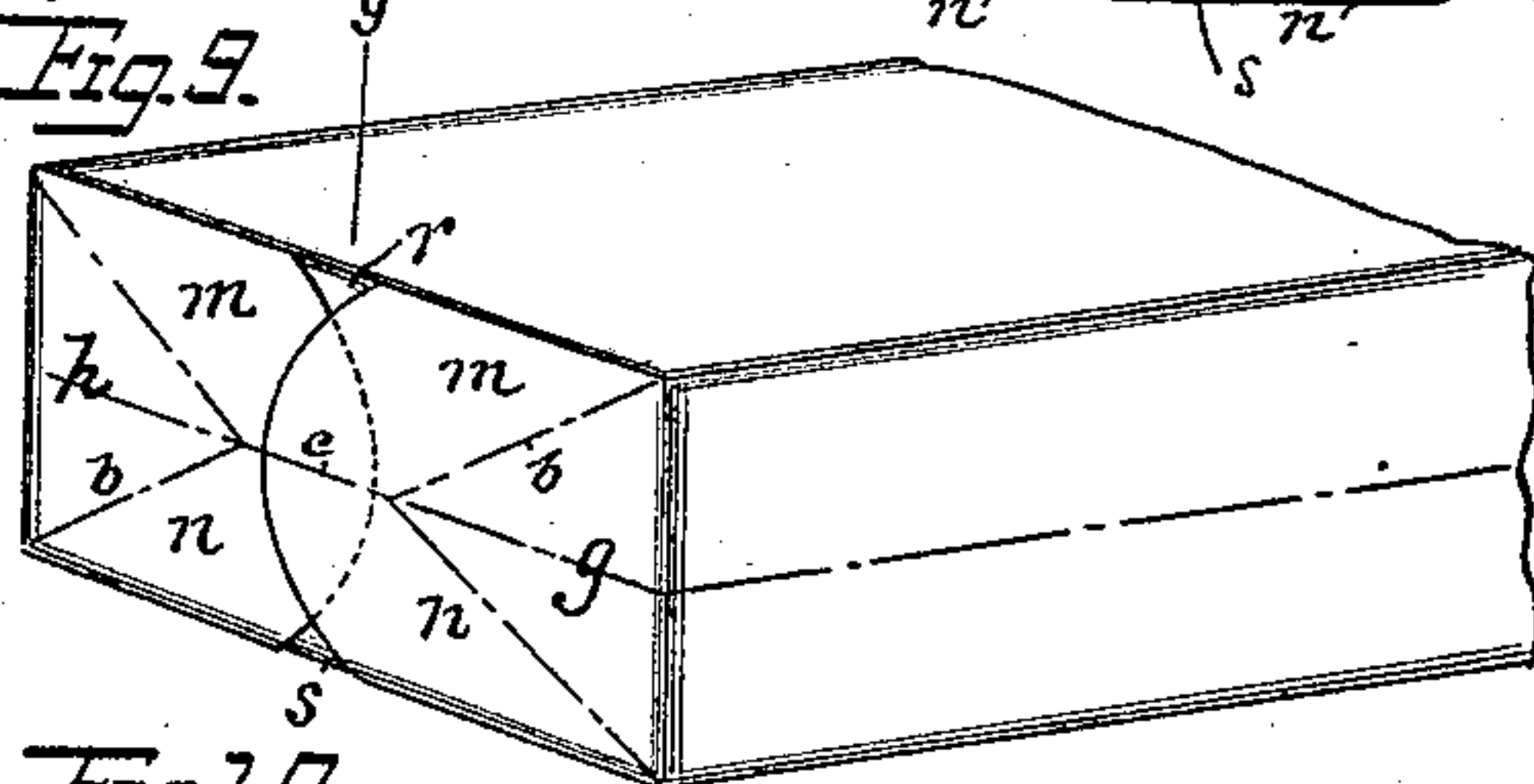


Fig. 10.

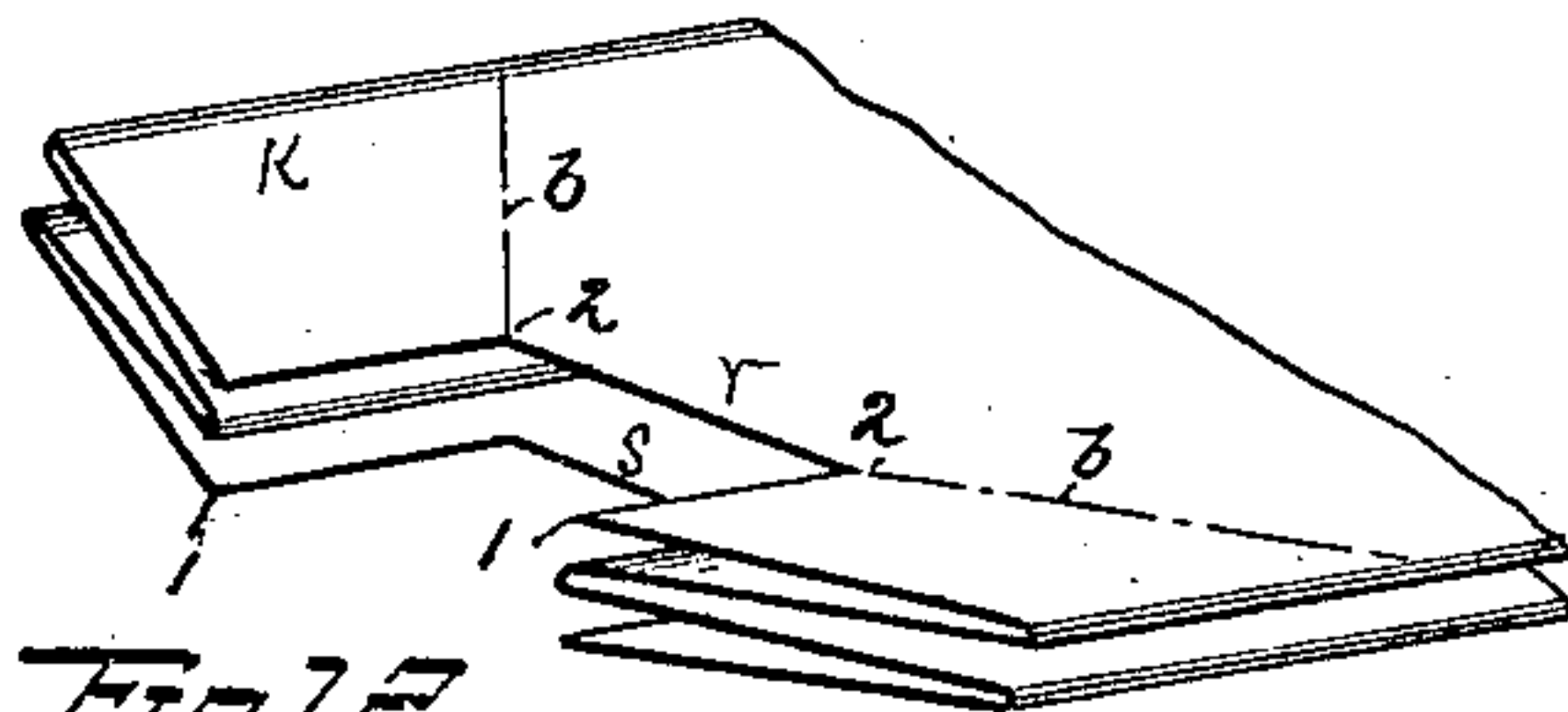


Fig. 5.

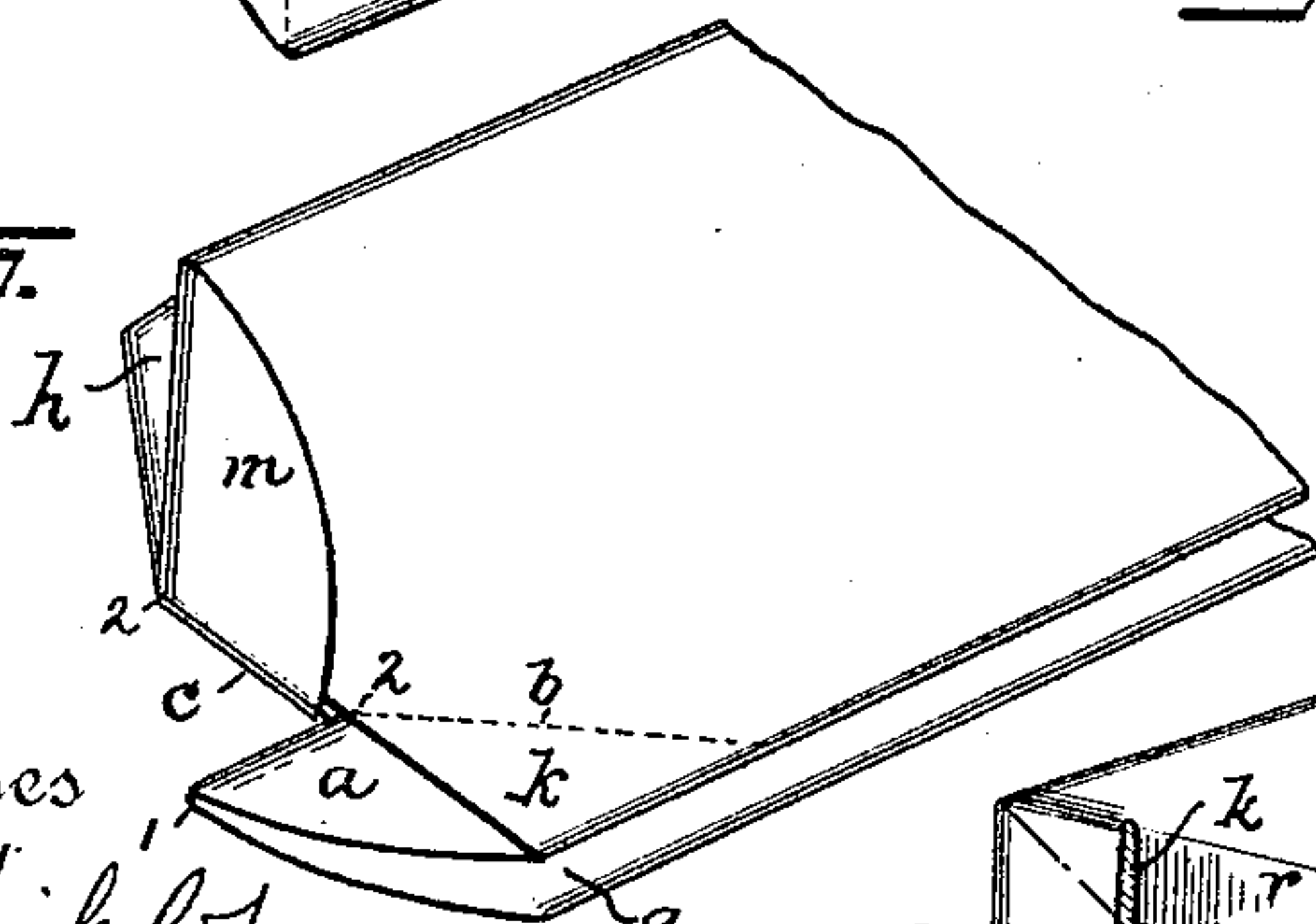


Fig. 12.

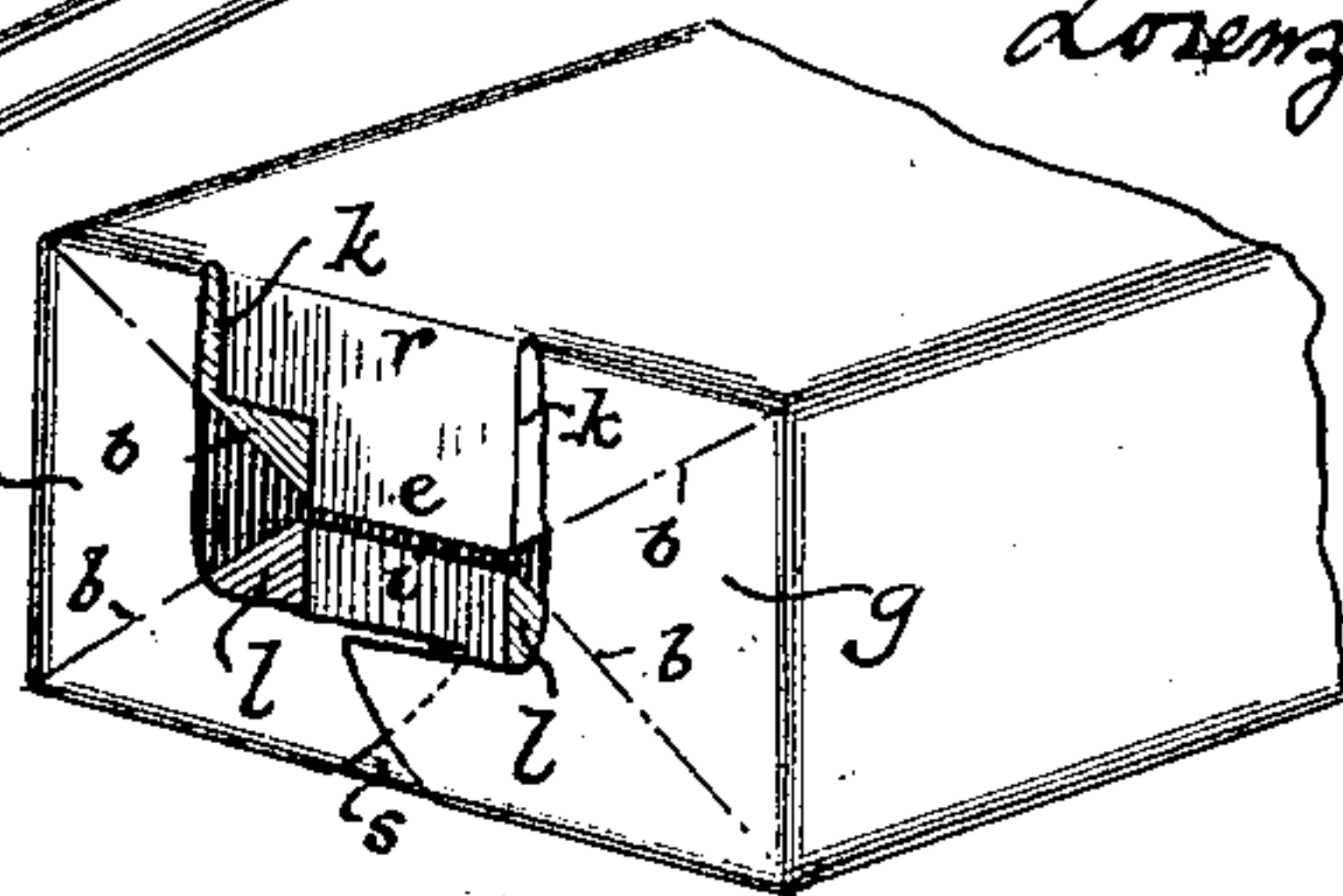
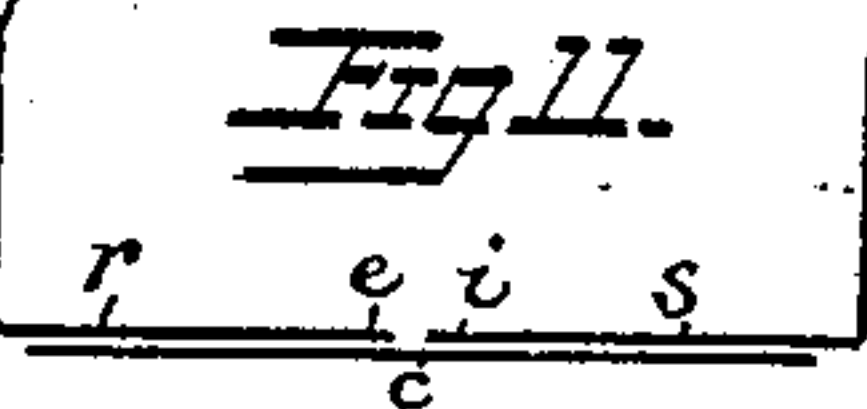


Fig. 11.



Witnesses

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UNITED STATES PATENT OFFICE.

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PAPER BAG.

SPECIFICATION forming part of Letters Patent No. 397,217, dated February 5, 1889.

Application filed March 10, 1888. Serial No. 266,798. (Model.)

To all whom it may concern:

Be it known that I, LORENZO D. BENNER, a citizen of the United States, residing at Peoria, Illinois, have invented certain new and
5 useful Improvements in Paper Bags, fully set forth in the following specification and represented in the accompanying drawings.

This invention relates to that class of paper bags commonly designated "bellows-sided"
10 or "square" bags—that is to say, those bags in which the body portion when in its flat condition is partially formed by folding inwardly the opposite side portions of the material which, when the bags are distended, open
15 out and form two of their sides and impart a square shape thereto.

The invention particularly relates to an improved form of bottom for such bags; and it consists in the bag having the bottom herein-
20 after set forth.

In the drawings, Figure 1 is a perspective view of a bellows-sided bag-length adapted to the formation of the improved bag-bottom. Fig. 2 is a plan view of an end portion of the
25 same, illustrating certain extensions of the material with which the bag-length is preferably provided. Figs. 3 to 5, inclusive, illustrate perspective views of a mode in which the improved bottom may be formed. Fig. 6
30 is a similar view, the bag being completed. Figs. 7 and 8 are sectional details taken, respectively, on the lines 6 6 and 7 7 of Fig. 6. Fig. 9 is a perspective view of the bag distended and looking at its bottom. Fig. 10 is
35 a modified form of the bag-length hereinafter described. Fig. 11 is a vertical section taken on the line 9 9 of Fig. 9. Fig. 12 is a view similar to Fig. 9, portions of the folds being broken away to show the underlying portions.

The manner in which a bellows-sided tube is formed and bag-lengths severed therefrom preliminary to the formation of the bag-bot-
40 toms is now too well known to need particularizing here, and it will suffice to say that any of the well-known methods heretofore employed in the formation of such a tube and bag-lengths may be practiced in making the present improved bag, and that the improved
45 bag may also be made from blanks of the desired size folded up into bellows-sided form or into H shape, as will be apparent.

One mode of making the improved bag and devices for accomplishing said mode are set forth in United States Letters Patent dated May 15, 1888, No. 382,682, to which reference
55 may be had.

In forming the improved bag the bag-length will in its preferred form be provided with extending portions *a*, Figs. 1 and 2, formed by cutting the material composing the bellows
60 sides on lines varying from the transverse line upon which the remainder of the material is cut. These extending portions serve to expose the material composing the bellows sides and enable paste to be readily applied
65 thereto, to insure the proper and effectual sealing of the plies forming the bottom of the bag, and to provide a proper extension of the material for enveloping the end of the bag-body, as will hereinafter appear. This par-
70 ticular form of extending end portions, however, is not essential, as the same effect may be produced by cutting the end of the bag-length in the manner shown in Fig. 10, the difference being that a little more material
75 will be folded over onto the body of the bag when its bottom is completed.

The manner found by me most suited in practice to the forming of the bottom folds is to distend the bellows sides of the bag-length
80 in opposite directions at right angles to the remaining portion of the bag-length, and thus expose or open out the ends *g h* of said sides, or, in other words, to fold it into H shape in transverse section, as shown in Fig. 3, and as
85 particularly set forth in my said application. When in this form, or when in its flat condition, as in Figs. 1, 2, and 10, the body of the bag-length may be provided with diagonally-
90 arranged creased lines *b*, by which the lines upon which the bottom-forming portions thereof will fold are defined. This preliminary creasing, however, is not essential, as automatic devices may be employed, which
95 would render such creases unnecessary. To a more ready understanding of the manner in which the bottom folds are formed, it will be assumed for the purposes of this description that such creases will be first imparted
100 to the bag-length.

The distance from 1 to 2, Figs. 1, 2, 3, and 10, will correspond to the length of material form-

ing the enveloping fold *c*, Figs. 5 and 7, which ultimately lies over the open end of the bag-length, and hence in practice the diagonal lines *b* on each side of the bag-length should commence at the point 2, so that the said fold *c* will lie snugly against the edges of the adjacent plies *e i* at the open end of the bag-length, as in Fig. 7, and thus permit their edges to abut when the completed bag is distended, as seen in Fig. 11. (The diagonal creased lines *b*, it may be stated, should extend approximately at an angle of about forty-five degrees from the longitudinal side of the bag-length, as indicated in Fig. 2.)

The opposite sides *g h* each provide portions *m n*, formed by the end of the bag-length and the creased lines *b*, and, separated by the fold-line *c*, form the portions which properly close the end of the bag-length. In the mode taken for illustration the ends of said portions *m n* of each side are turned toward the center of the blank end on said creased lines *b*, as in Fig. 4, in the act of bringing the fold-lines *c* against the open end thereof. As these portions are brought in contact with said open end, one will slightly overlap the other, as indicated in the completed bag, Figs. 6 and 9. When this is done, the portions *m* and *n* may be brought down to lie flat upon the underlying portions, as in Figs. 6 and 7, by directing the longitudinal sides of the bag-length from their vertical position shown in Fig. 4 to the flat position shown in Fig. 6. This will effectually cause the fold *c* to lie adjacent to the end of the bag-length, and bring the entire extent of said portions *m* and *n* down snugly upon the underlying portions of the bag-length, and by suitable lines of paste applied to their under surfaces be caused to adhere thereto and to each other at their overlapping points, and complete the formation of the bag.

Thus it will be seen that the opposite underlying portions *r s* of two sides of the bag have their portions *k l* turned back thereover on the diagonal lines *b*, and that the portions of the remaining opposite sides are turned over upon said underlying portions *r s*, and overlap each other in the center of the bag-bottom.

It is not necessary that the bottom-forming portions *m n* upon both sides should be simultaneously folded over, as the portions upon one side of the bag-length might be first folded over onto the body of the bag-length, as in Fig. 5, and the other side afterward manipulated and folded in like manner. Neither is it essential that the bag-length be first formed in the bellows-sided flat form, as shown in

Figs. 1 and 2, as it may be formed directly into the **H** shape shown in Fig. 3.

The bag thus formed provides an exceedingly merchantable article, obviating the necessity of any hand manipulation of its bottom in order to properly distend it in the act of opening the bag.

The diagonal creases extending across the material of the bellows sides, now universally recognized as important to the effective opening of the bag, are in the improved bag necessarily formed by the folds closing the bag-bottom.

Specific forms of bag-bottom having the same general characteristics as those herein set forth and claimed are shown and claimed in my pending applications, filed May 20, 1887, Serial No. 238,876, and February 3, 1888, Serial No. 262,890. The claims herein made are intended to cover, broadly, a bag-bottom formed by turning the opposite portions of the material lying within the bellows sides over toward the center of the bag-bottom, so as to overlap each other upon the body of the bag.

What I claim is—

1. The herein-described square bag, having a bottom formed of the opposite side portions, *g h*, extending from the bellows sides toward the center of the bag-bottom, so as to overlap each other and the opposite portions *r s* of the other sides of the bag, substantially as described.

2. The herein-described square bag, having a bottom formed of the opposite side portions, *g h*, extending from the bellows sides toward the center of the bag-bottom, so as to overlap each other and the opposite portions *r s* of the other sides of the body of the bag, said opposite side portions having diagonal fold-lines *b*, substantially as described.

3. A bellows-sided bag having a bottom formed of opposite side portions, *g h*, extending from the bellows sides toward the center of the bag-bottom and overlapping each other, and the opposite portions *r s* of the other side of the bag-body extending therefrom toward the center of the bag-bottom, the portions *k l* of the portions *r s* being folded back thereupon on diagonal lines extending from the sides of the bag, 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:

PETER F. HARMON,
GEO. H. PULLMAN.