

H. S. MUNSON.  
PAPER BOX.

No. 288,255.

Patented Nov. 13, 1883.

Fig. 1.

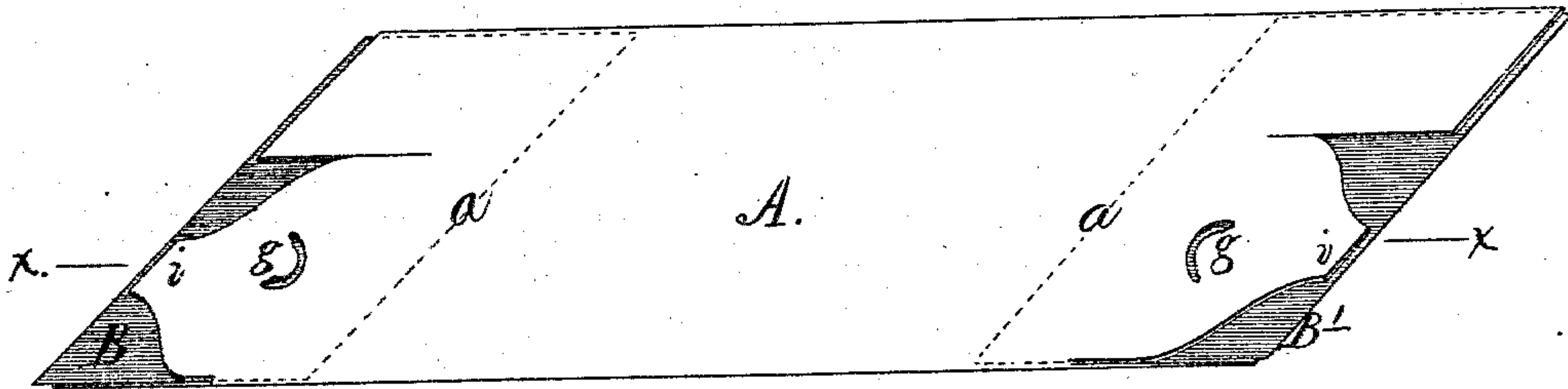


Fig. 2.

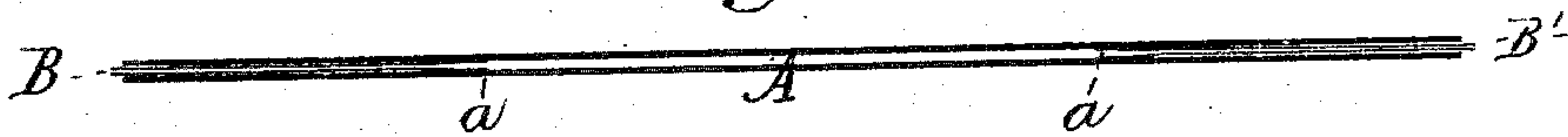


Fig. 3.

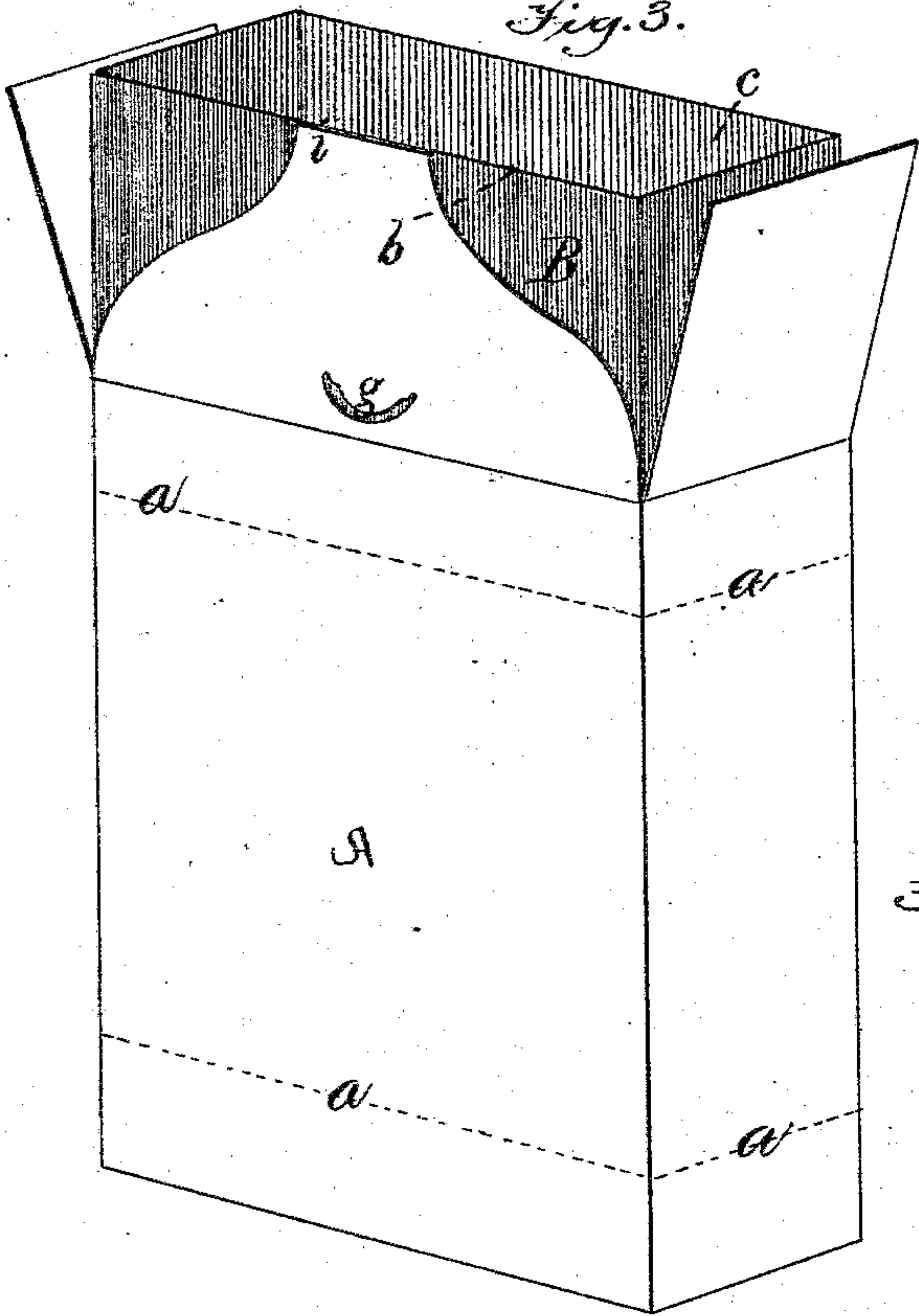


Fig. 4.

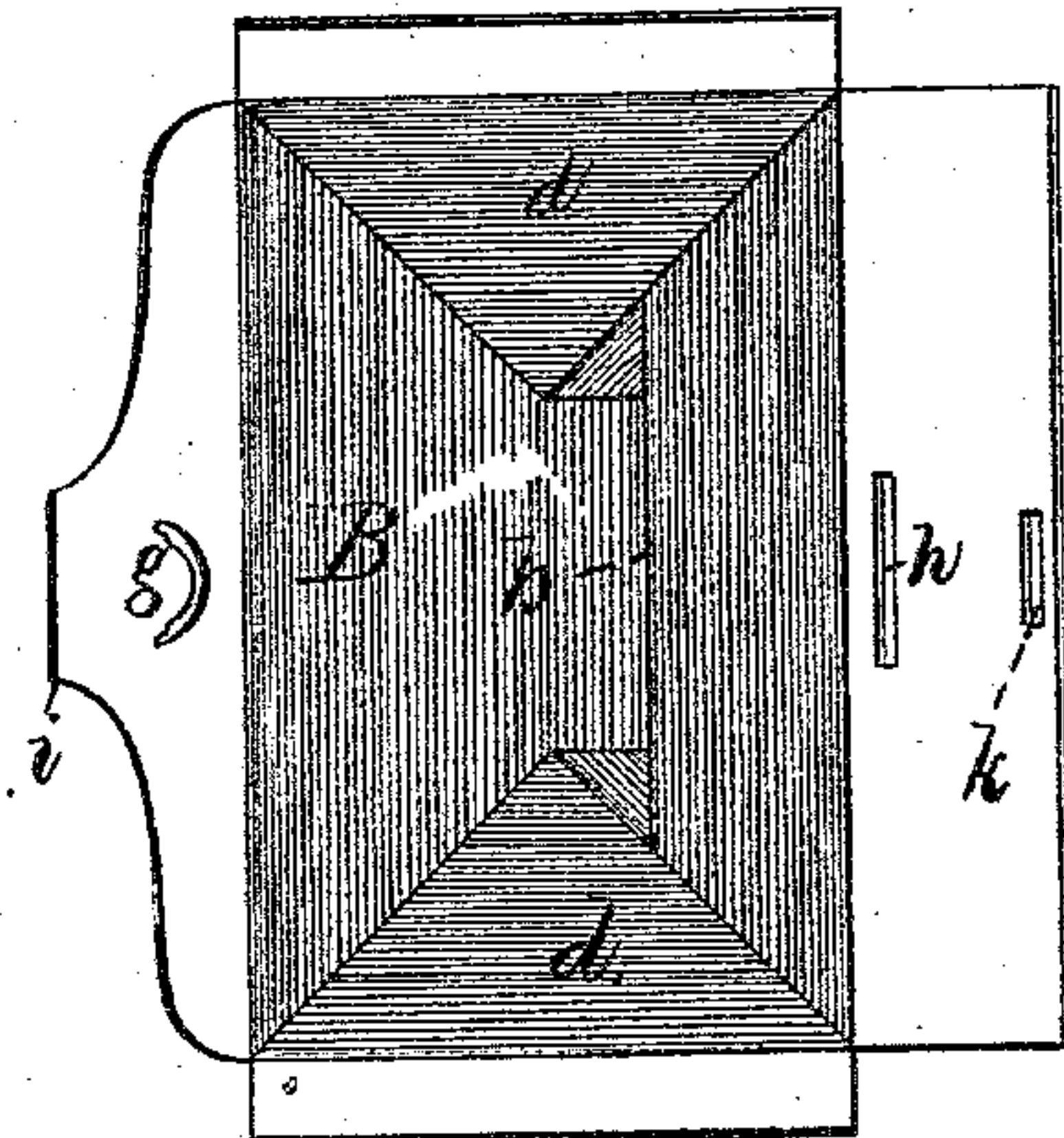


Fig. 5.

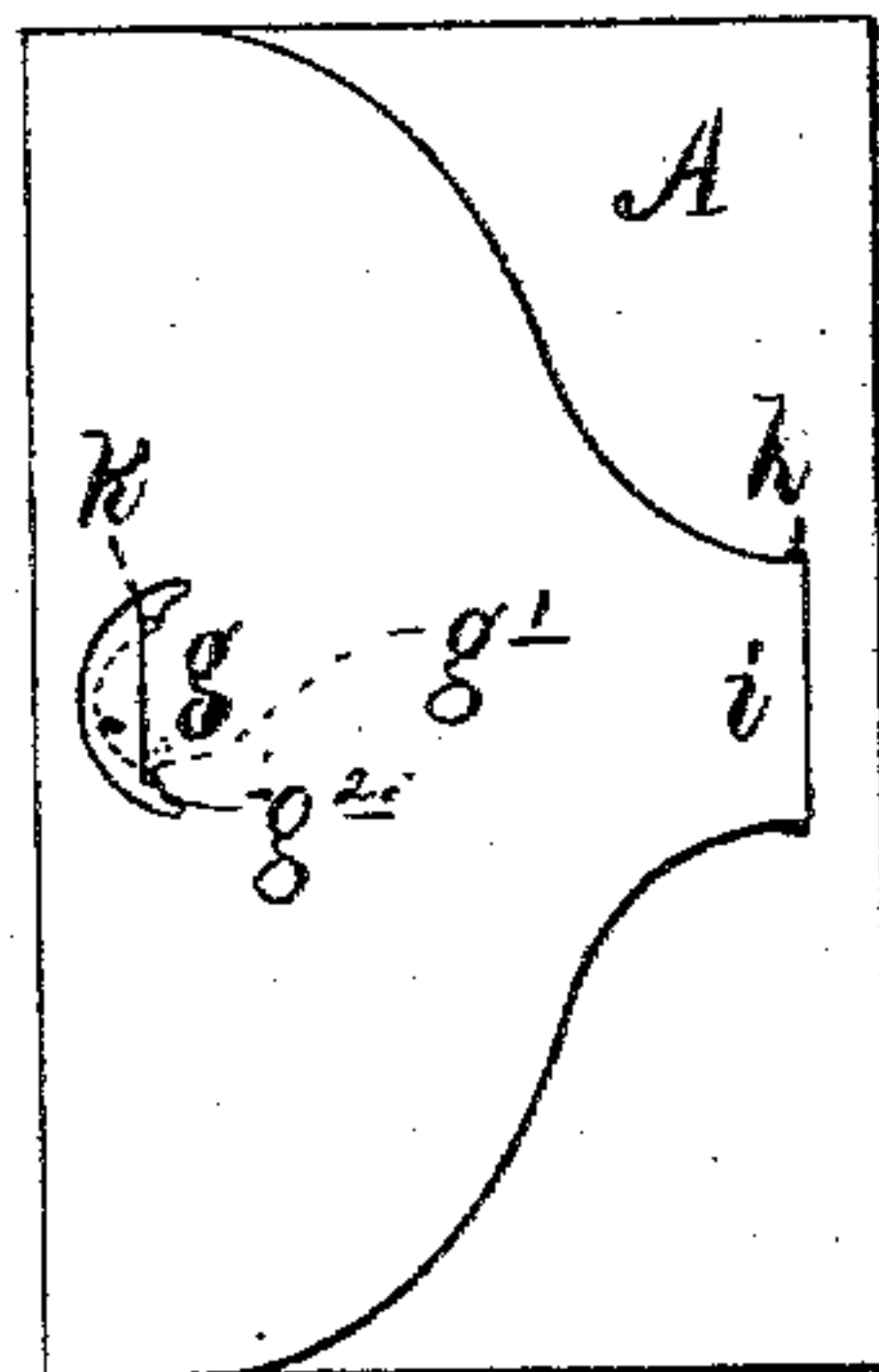
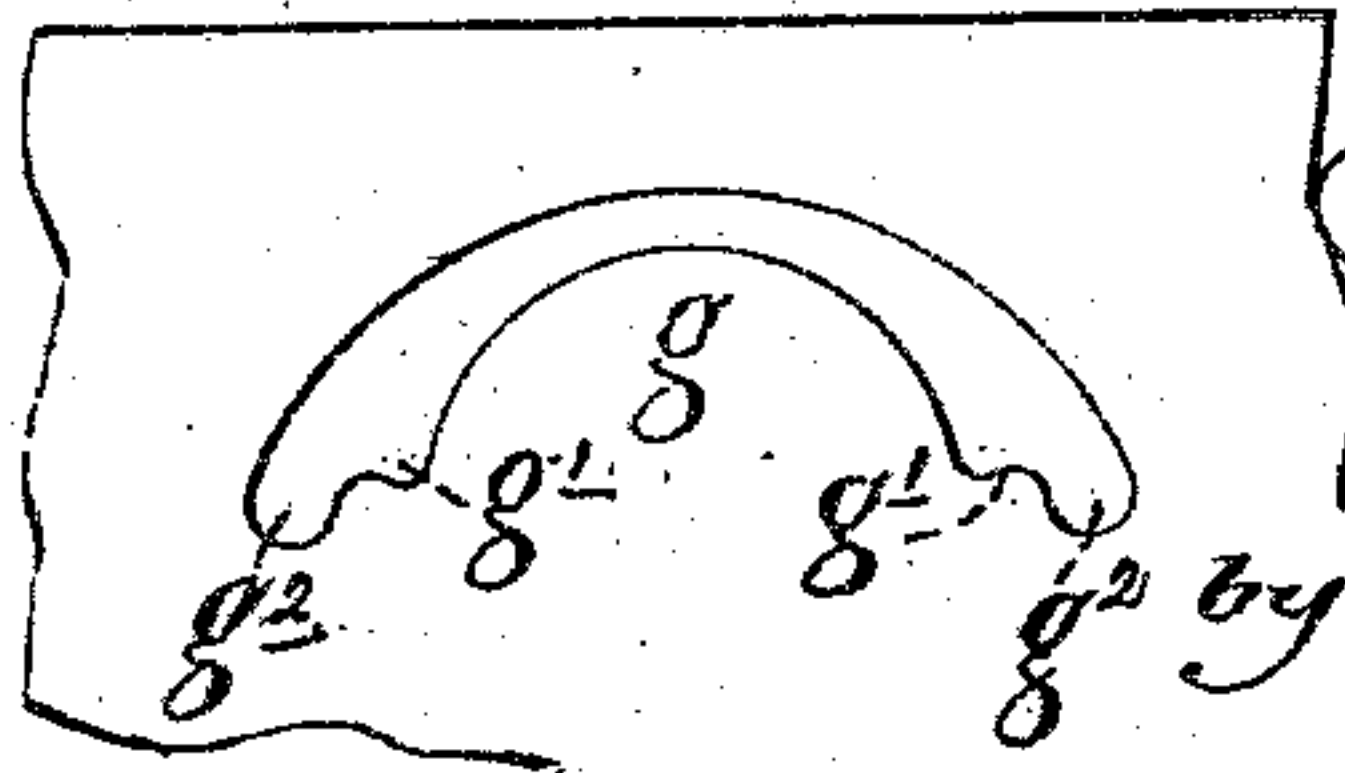


Fig. 6.



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2 Sheets—Sheet 2.

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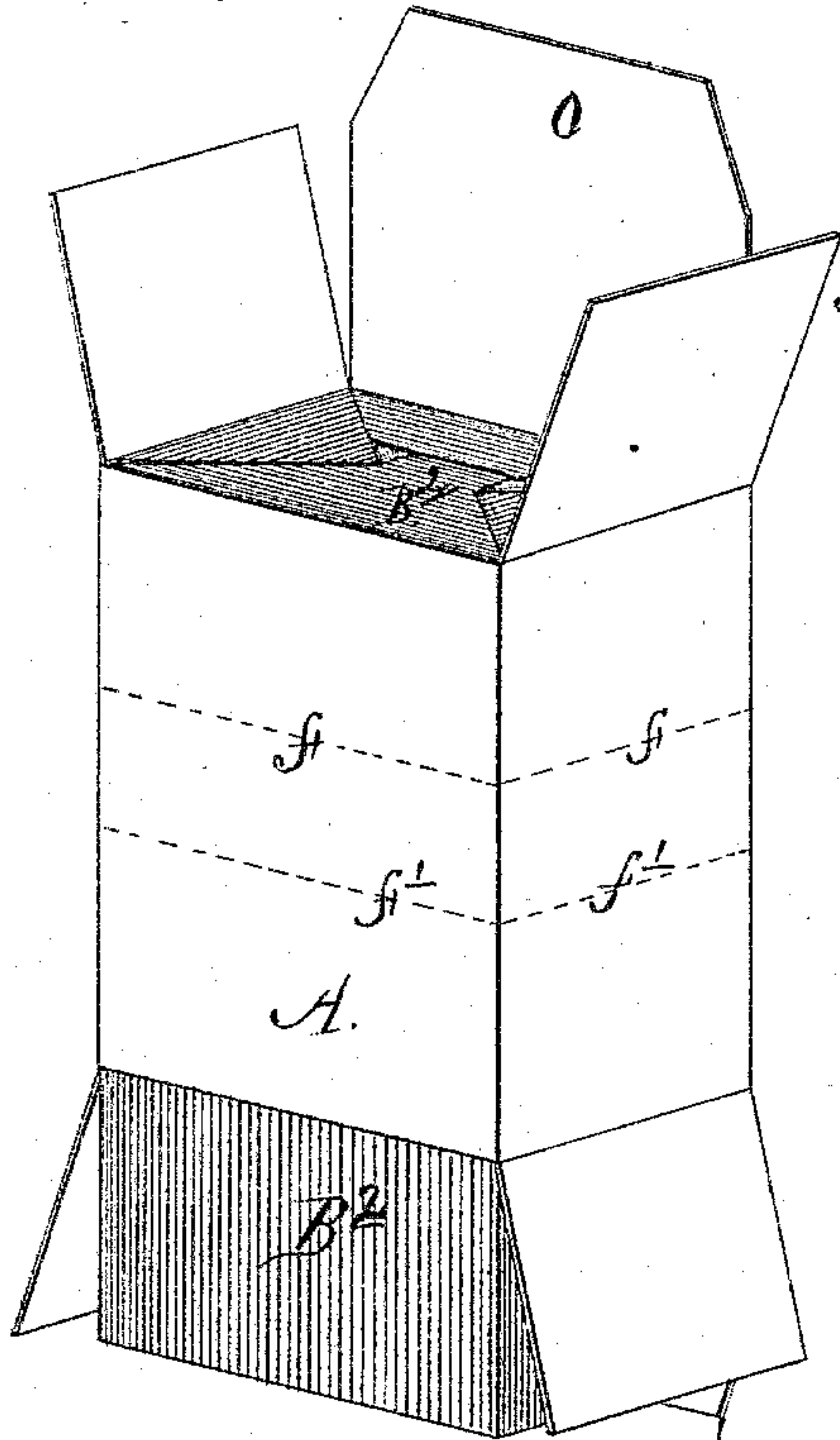


Fig. 7.

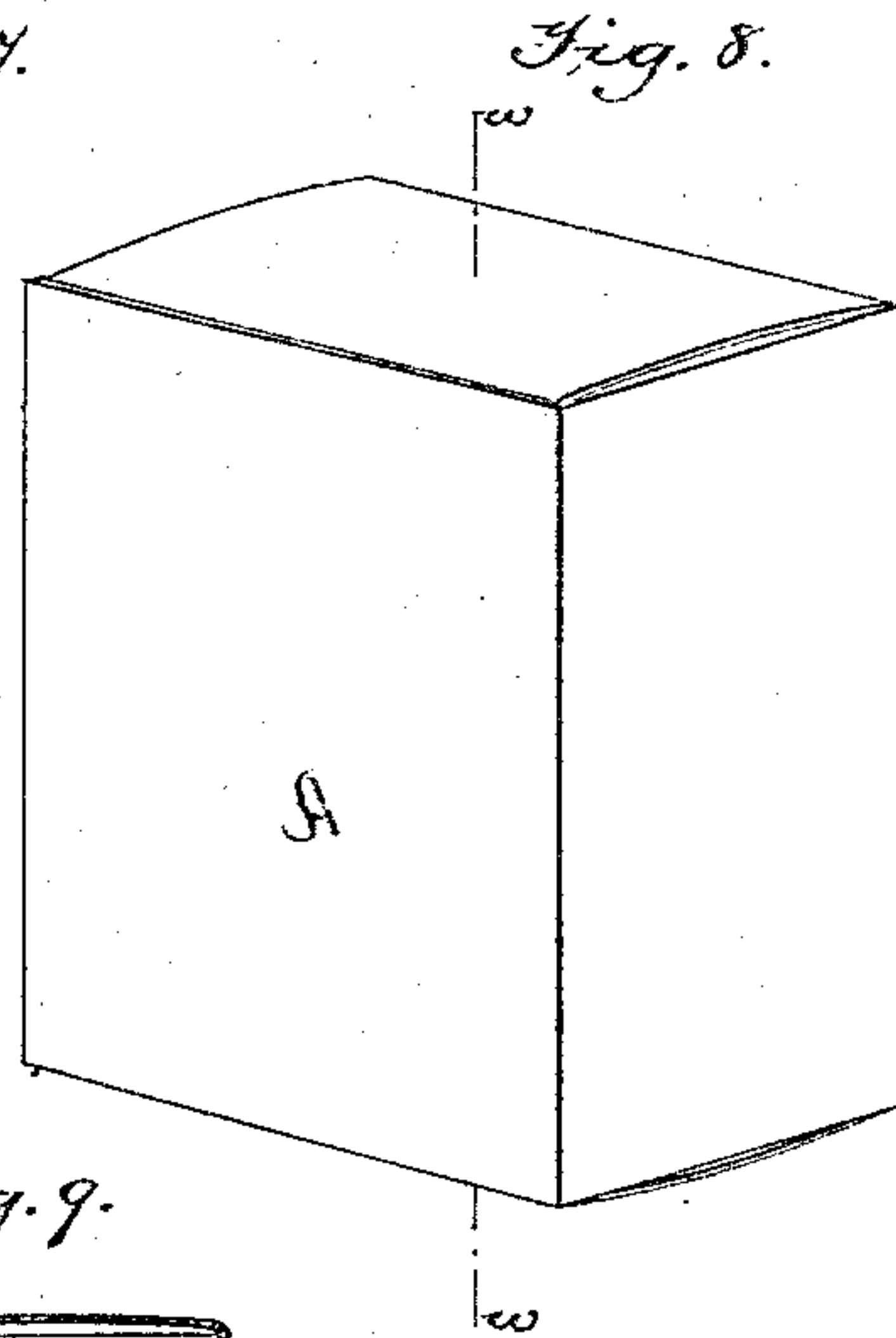


Fig. 8.

Fig. 9.

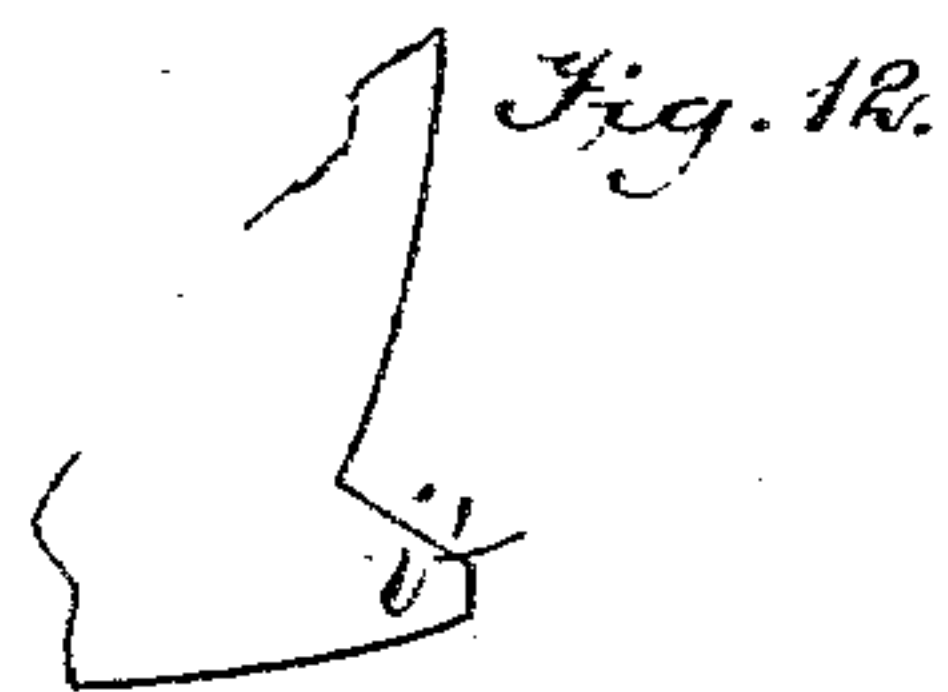
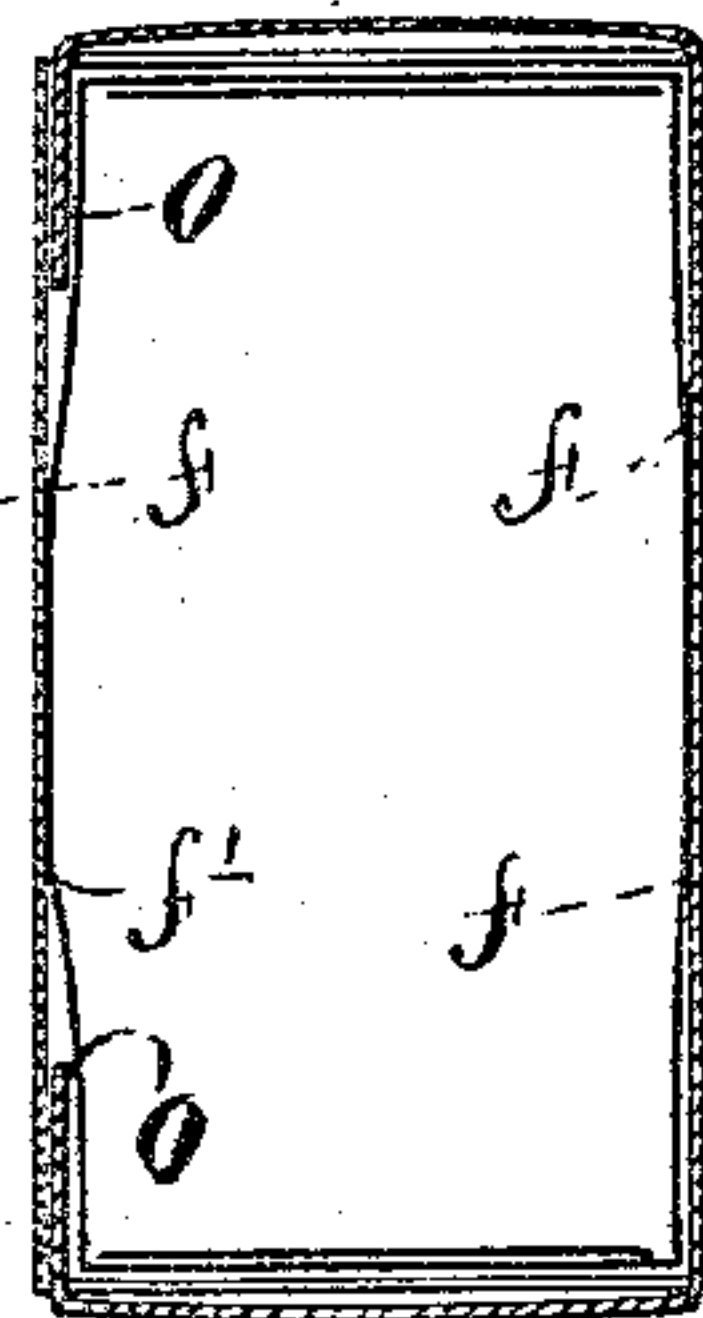


Fig. 10.

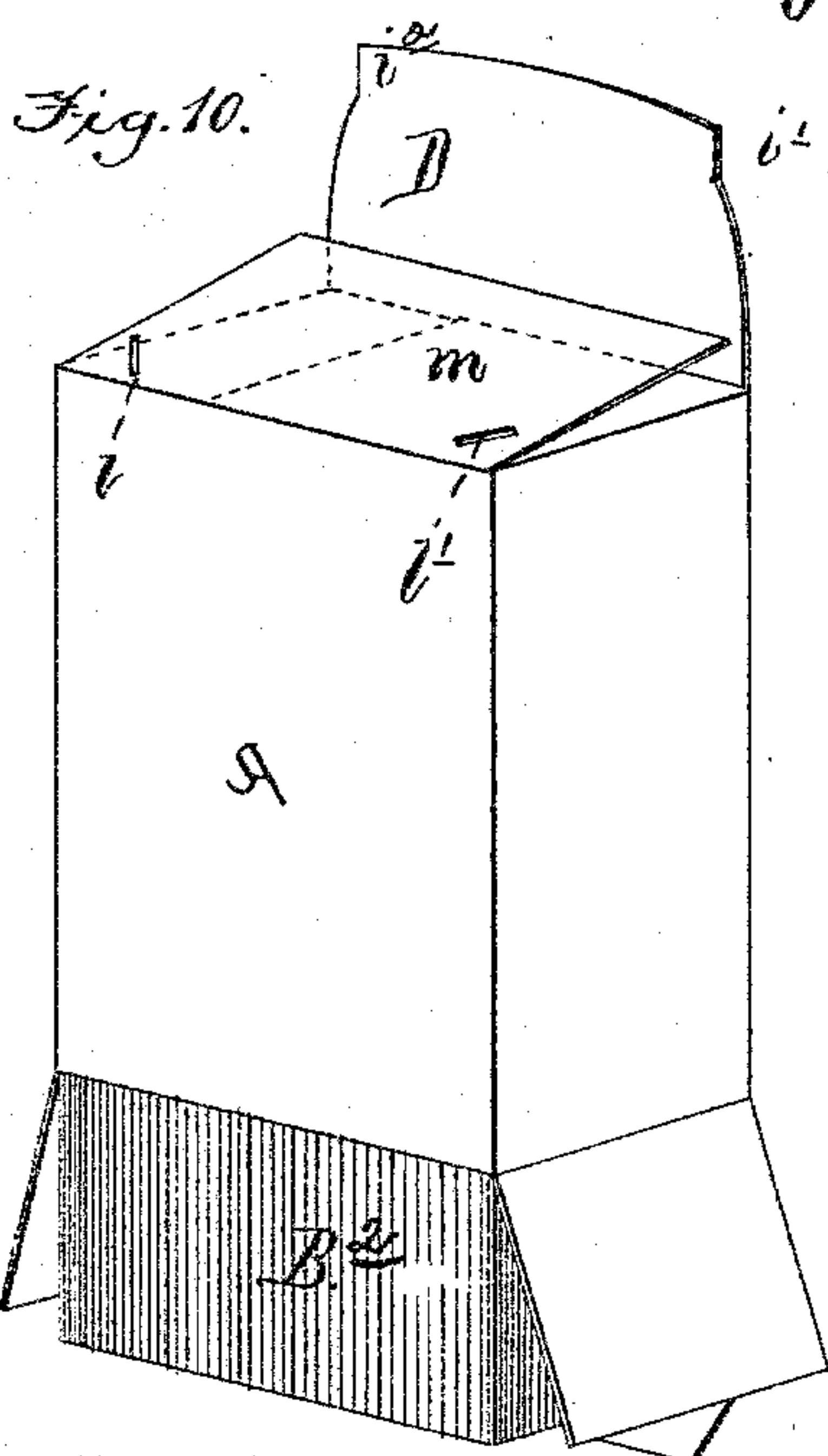
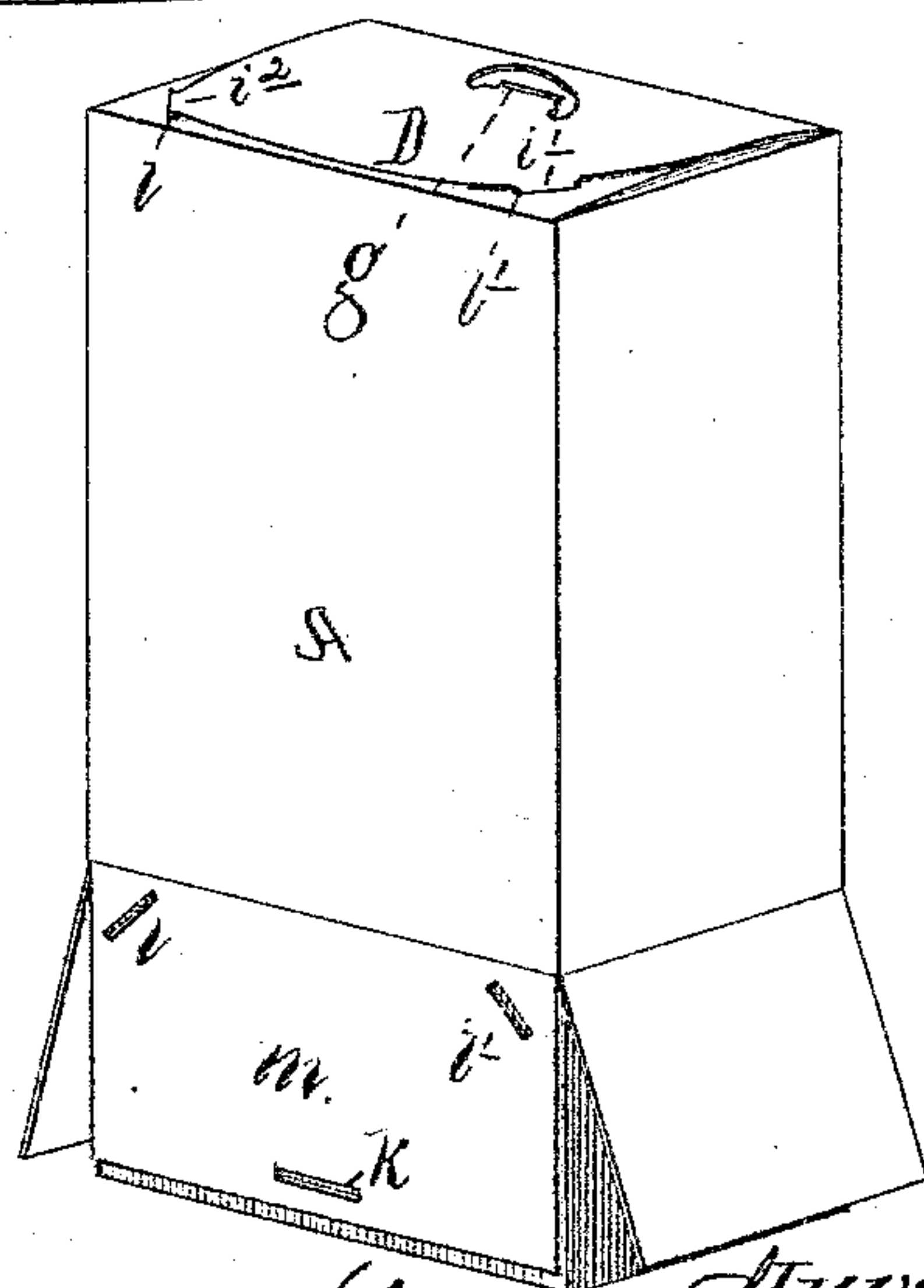


Fig. 10.

Fig. 11.



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# UNITED STATES PATENT OFFICE.

HARVEY S. MUNSON, OF NEW HAVEN, CONNECTICUT.

## PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 288,255, dated November 13, 1883.

Application filed October 3, 1877.

*To all whom it may concern:*

Be it known that I, HARVEY S. MUNSON, of the city and county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Paper Boxes, of which the following is a specification.

The drawings illustrating these improvements show, in Figure 1, a "knockdown" box provided with an auxiliary wrapper or lining, said box being in its collapsed condition; in Fig. 2, a sectional view on line *x* of Fig. 1; in Fig. 3, a perspective view of said box "set up" for use and having one end closed and the other open; in Fig. 4, a top view of the same, but with the auxiliary wrapper folded; in Fig. 5, a similar view, but with the box fully closed and locked; in Fig. 6, an enlarged view of one of the locking-tongues; in Fig. 7, a perspective view of a box having an auxiliary lining and provided with a simple form of end-closing devices; in Fig. 8, the same box when closed at both ends; in Fig. 9, a vertical section of the same box; in Fig. 10, a knockdown box having the auxiliary wrapper, but provided at its upper end with an improved form of locking means for securing its end flaps, and at its opposite end with a closing means like that shown in Fig. 7; in Fig. 11, a knockdown box having an improved means for closing and locking its ends, said box also containing the auxiliary lining. In Fig. 12, an enlarged view of the structure of one locking-tongue.

While, for the purpose of illustrating the general application of the interior wrapper or lining to knock-down boxes many structures of means for closing and securing the end flaps are shown, only the structure of the end-closing means shown in Fig. 10 is claimed herein, for the reason that all the other novel locking means shown are embraced in a division of this application filed April 9, 1883. These inventions relate particularly to that form of paper boxes commercially known as "knockdown boxes," which are provided with peculiarly-shaped ends that are closed and fastened by various forms of tucks or locks. Said inventions are, however, applicable to all classes of boxes that open and close at the ends.

One object of these improvements is the

production of a paper box that shall be adapted to the packing of powders and finely-comminuted substances, such as are now required to be packed in a practically dust-tight package in order that the contents may not sift out or otherwise escape during handling or transport. This desideratum is fully accomplished by one branch of the invention, which consists in introducing within the body of the box an auxiliary wrapper or lining which, after being infolded at the ends, securely holds the contents of the box, the infolded ends of the wrapper or lining being retained in place by the end-closing flaps of the box, which are the means of finally closing the box.

Another object attained by these improvements is the production of a knockdown box, the end-closing flaps whereof are provided with means for securing them, that leave the outermost flap practically smooth and unbroken throughout its surface-area, thus providing the boxes with ends adapted to receive a printed inscription, which fastening, also requiring a right line or forward movement in contradistinction to a binding action in securing its fastening-tongues, leaves the flat condition of the last flap unimpaired. These objects are attained by another branch of the invention, which consists in a knockdown box having four end-closing flaps, two of which are provided, one with slots or pockets inclined with respect to the corners of the box, and the other (or outermost) with corners adapted to enter said slots or pockets by a right-line movement.

In carrying out the first branch of these improvements as applied to knockdown-boxes any of the materials now used or suited to their structure may be used. For the auxiliary wrapper or lining a thin strong paper, capable of folding readily, is preferred. The character and quality of the same may, however, be varied according to circumstances. The process of cutting out and creasing the blanks may be that commonly practiced in the cutting and creasing of material, and the structure and system of securing the end flaps may be any one of those herein shown, or common to this art, or equivalent to them.

For the purpose of fully understanding this



branch of the invention, a description will now be given of its practical embodiment.

The body of the box A may be rectangular or polygonal, and have the capacity of being 5 folded flat or be rigid.

The interior wrapping or lining, B B', is cut to the proper width and length, and pasted or otherwise secured to the interior of the box so as to project from either or both ends thereof. 10 It is preferably in the form of two pieces, B B', the base or line of attachment of each piece to the sides of the box being at the lines *a*, while the free ends project about the same as the flaps that form the ends of the box, as 15 shown in Figs. 1, 3, 7, and 10. This wrapper or lining will be attached to the interior walls of the box at any selected period during the process of manufacturing the box, and when applied to a knockdown-box it should 20 be done when the blank composing it is spread flat, with which box said lining will readily fold flat, as in Fig. 1.

When the box is "set up" into tubular form to receive its contents, the wrapper at one end 25 of the box is infolded upon itself, as in Fig. 4. The end flaps of the box are then folded in succession thereon and fastened. The box is then set upon this closed end and filled. The wrapper at the open end is then infolded 30 and the end flaps closed and secured. If a single-sheet wrapper is used, as in Fig. 7, it will be long enough to project at each end, and will be attached to the interior of the box, as between the lines *f* and *f'* in said figure.

Various forms of infolding the projecting ends of the wrapper will suggest themselves; but a preferred mode is shown in Figs. 4 and 7—that is, the two edges *b c* are first brought together and a parallel fold made, say, about one- 40 fourth of an inch in width. This fold is then turned upon itself the same width, which brings the two sides in a folded condition horizontally across the box end. The laterally-projecting and partially-folded ends *d* are then folded over 45 inwardly and take the positions shown in Fig. 4 after the folding flaps of the box proper are closed and secured. Any other system of folds may be used that will effectually close all openings without departure from this branch of the invention. Where such means is a tucking 50 flap, as in Fig. 7, in which case the front member of the closing-flaps must be omitted, the wrapper will preferably be secured so as to leave a clear space between its attachment 55 and the lines *f* or *f'* in Fig. 7; into which space the back flap, O, may be inserted.

The end-closing flaps of the box herein shown are closed and secured as follows: In 60 Figs. 1 to 6 the flap attached to what may be called the "back" of the box is provided with two slots or pockets, *h k*, and what may be called the "front flap" has one edge fashioned into a central tongue, *i*, and near its folding point is provided with an incision that forms 65 a tongue, *g*, which incision is preferably cut with rounded or curved points *g' g''*, which give

it the required strength to resist any tendency to tear. The side flaps having been turned inwardly the back flap is laid upon them, and the front flap, bent inwardly, has its tongue 70 *g* first inserted in the slot or pocket *k*, and then its tongue *i* inserted into the pocket *h*, the parts then lying flat in the positions shown in Fig. 5. In the form shown in Fig. 11 the 75 "front flap," so called, has in addition to the central back tongue, *g*, a duplex set of front tongues at the corners, this being shown here simply in illustration of the inventions here claimed.

In closing the ends of knock-down boxes 80 one important feature is the preservation of an unbroken surface at the ends of the box for the purpose of receiving an inscription printed thereon, and another is that the last closing-flap forming such exterior surface shall 85 not be bent in securing it in place, so as to present raised portions that may be caught in handling, and thus destroy the fastening of the end. One form long since adopted to satisfy these requirements is that shown in Fig. 90 7; but the tuck-fastening thereby provided is objectionable, because it is liable to easy detachment, for the reason that the last closing-flap bows or bends upward, and because of the weakness resulting from removing the front 95 flap. The form shown upon Sheet 1 wholly lacks these requisites, and, while affording great security, permits peculiar locking means because of the cut-away sides of its last closing-flap. 100

A structure embodying the second branch of the present invention and fulfilling the stated requirements is illustrated in Fig. 10. The tubular body of the box is provided (at the top end, which illustrates the invention) 105 with four closing-flaps, the side flaps being infolded and the front and back flaps folded in succession thereon, as described with reference to Figs. 1 to 5. In order, however, to preserve the greatest area of uninterrupted 110 surface for the last closing-flap D, that a complete printing-space on the end of the box may be provided, said flap is provided simply with squared corners *i' i''*, that operate as fastening-tongues, and the closing-flap *m* is provided near its hinge or union with the box- 115 body with slots or pockets *l' l*, that are so inclined with respect to said hinge or the front and sides of the box that the tongues *i' i''* may enter them by a right line or forward movement, which may be performed by so slight a bending of the flap D as to avoid giving it any set, which will result in its bending upward or bowing out when the fastening is accomplished. Thus the surface of the flap D is almost en- 125 tirely preserved for printing. The more important feature of the structure, however—that of securing a fastening that will avoid the bowing outward of the flap D—is accomplished by the peculiar fastening power obtained by 130 forcing the corner tongues, *i'* and *i*, under the hinge portion of the flap *m* and between it



and the underlying side flaps where the binding power or leverage of the flap *m* is greatest, and whence results such powerful impingement upon the tongues as to secure them and prevent any backward movement of the flap D, which alone produces the bulging or bowing of said flap that presents a projecting surface, as the exposed edges between the front corners, and from each to a back corner, with which forcible contact is liable to derange the fastening.

Having now fully described my improvements, what I claim is—

1. A paper box having a tubular body provided with flaps for closing one or both of its

ends, and provided with a lining attached to the inside of its body, that may be folded to close one or both of its ends independently of its folding flaps, substantially as described.

2. A paper box the body whereof is provided at one or both ends with closing-flaps, one flap being provided with angular slots or pockets, as *l l'*, and the opposite flap with corners adapted to enter and engage or be held in said pockets to close and secure the end of the box, substantially as described.

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