

3 Sheets—Sheet 1.

MACHINE FOR FORMING WRAPPERS FOR PACKAGES OF SMALL
MERCHANDISE.

Patented Jan. 16, 1883.

Fig. 1.

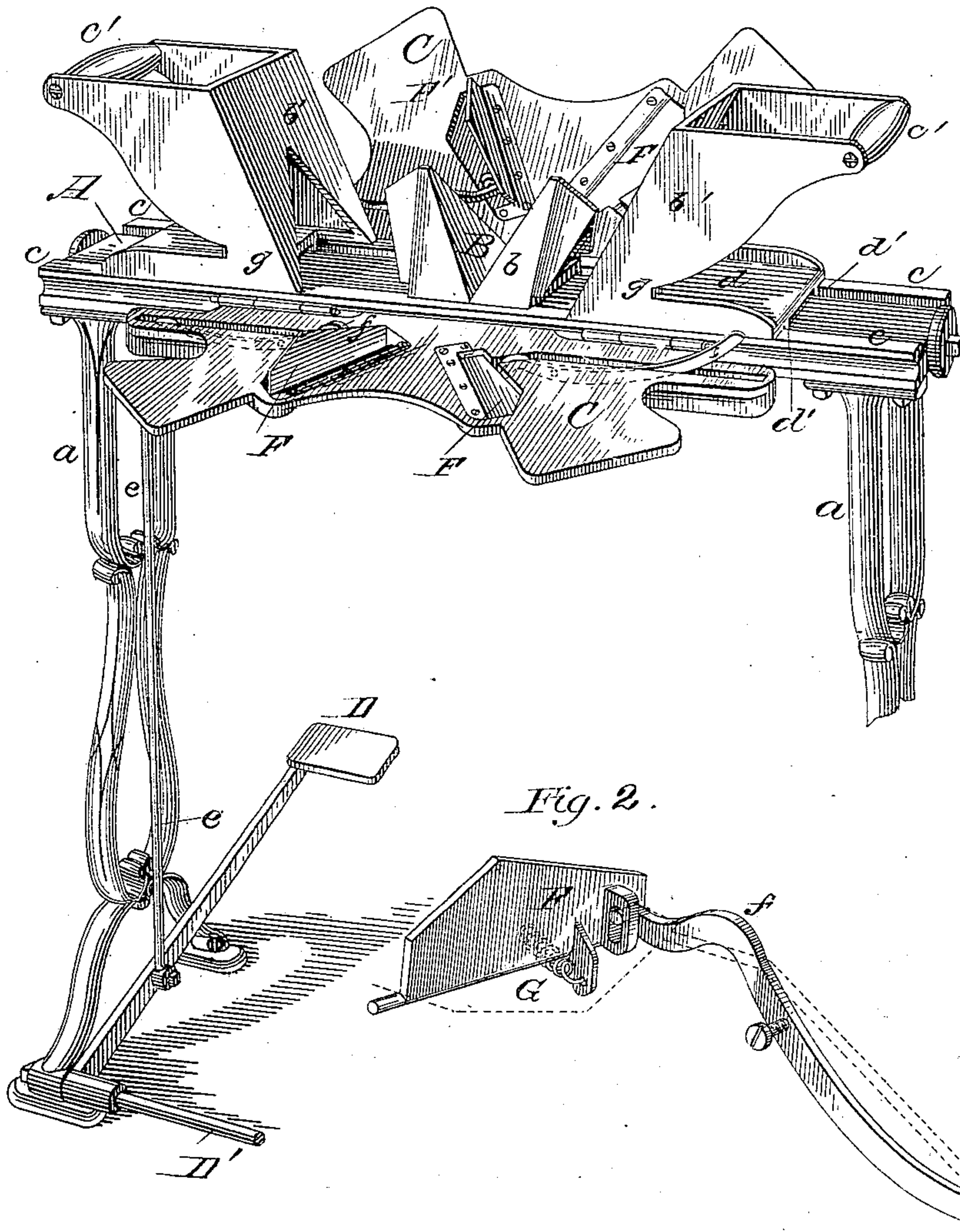


Fig. 2.

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(No Model.)

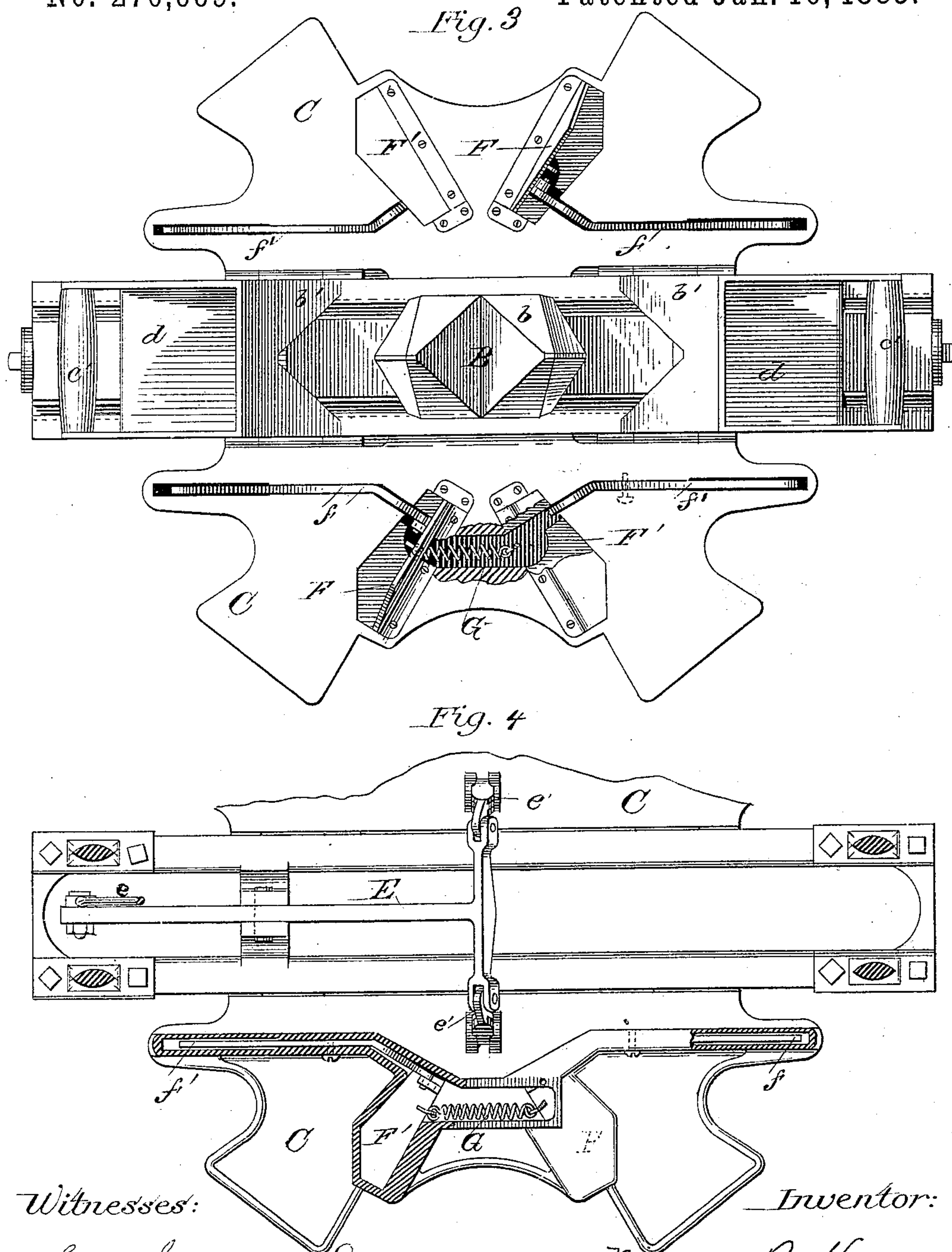
3 Sheets—Sheet 2.

W. B. HOWE.

MACHINE FOR FORMING WRAPPERS FOR PACKAGES OF SMALL
MERCHANDISE.

No. 270,669.

Patented Jan. 16, 1883.



Witnesses:

Frank S. Blanchard.

William C. Whiting.

Inventor:

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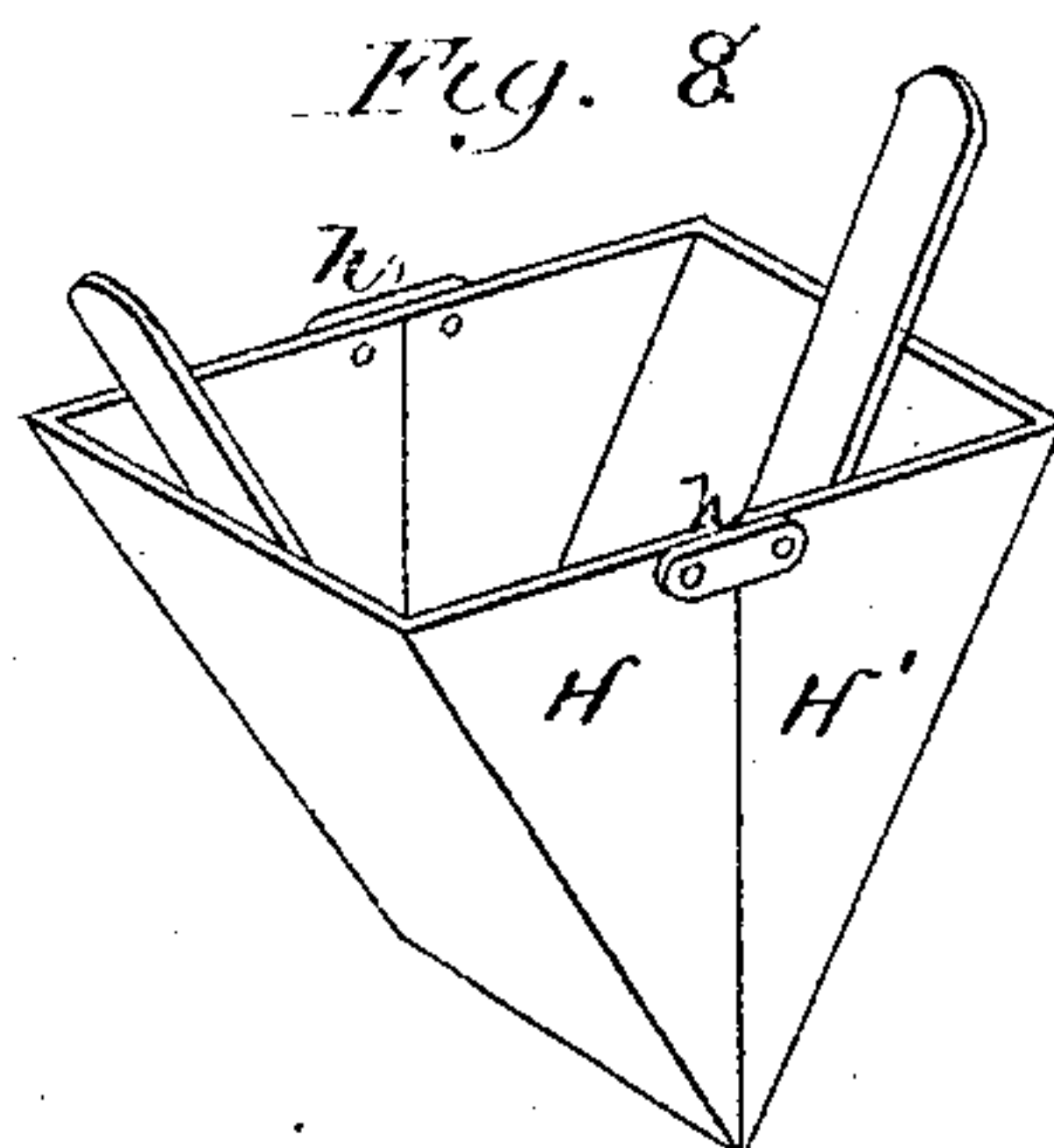
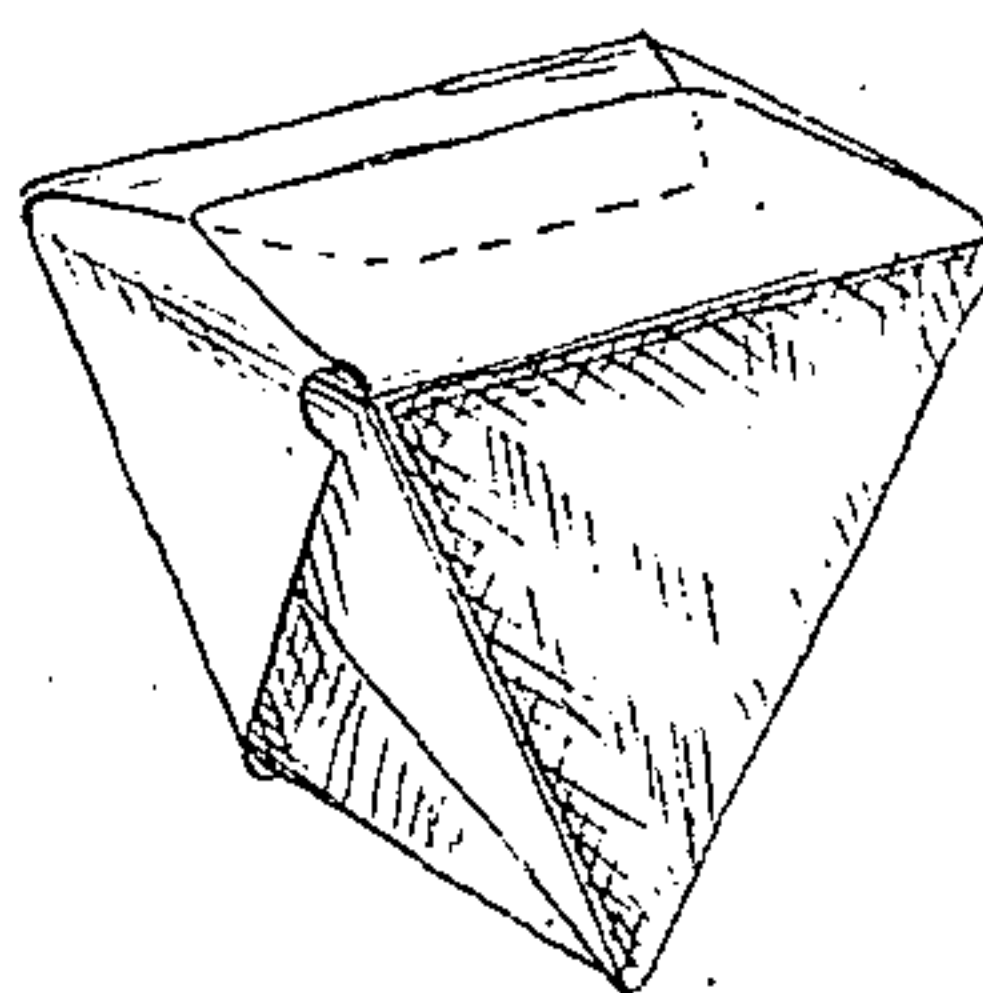
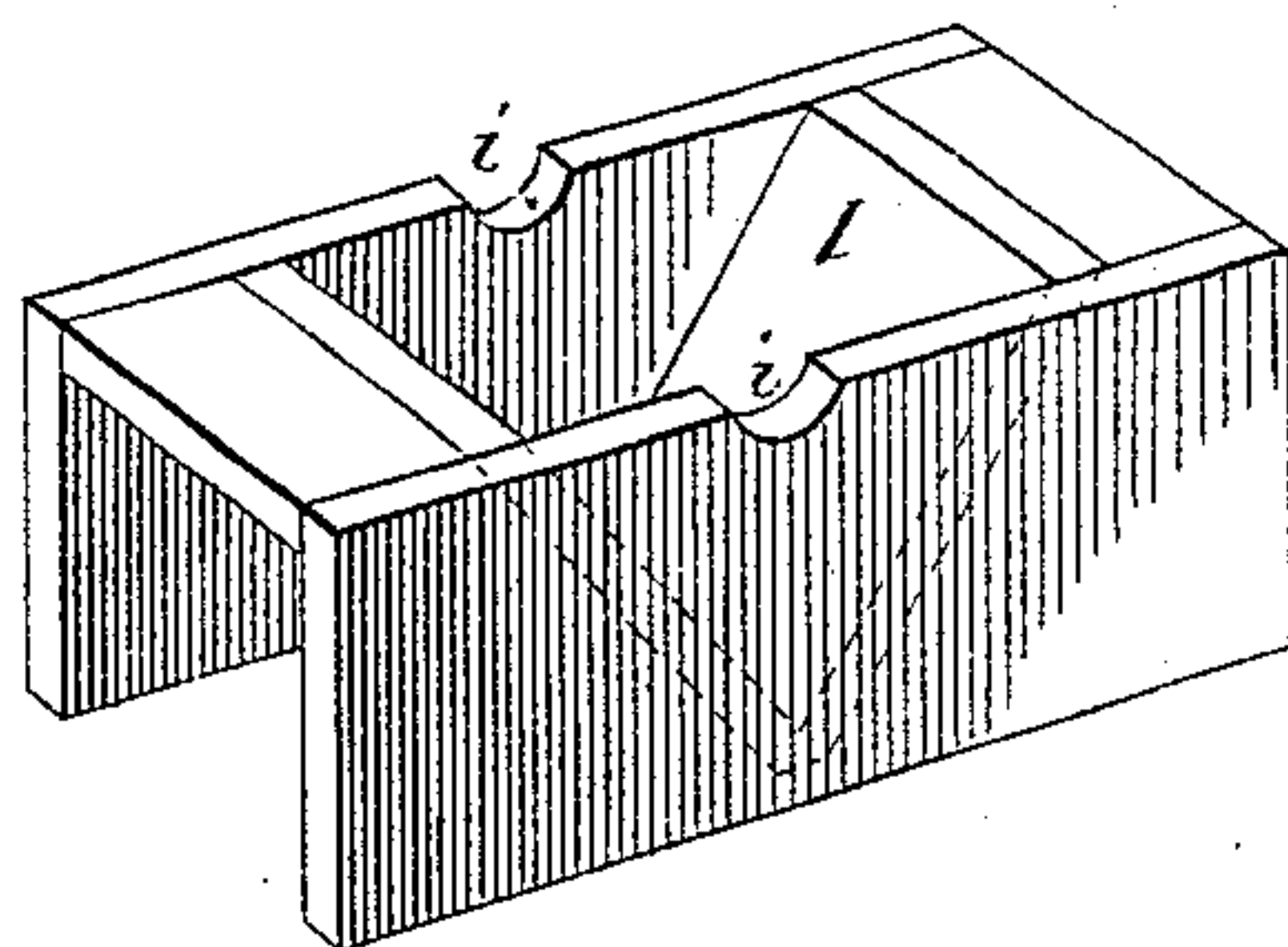
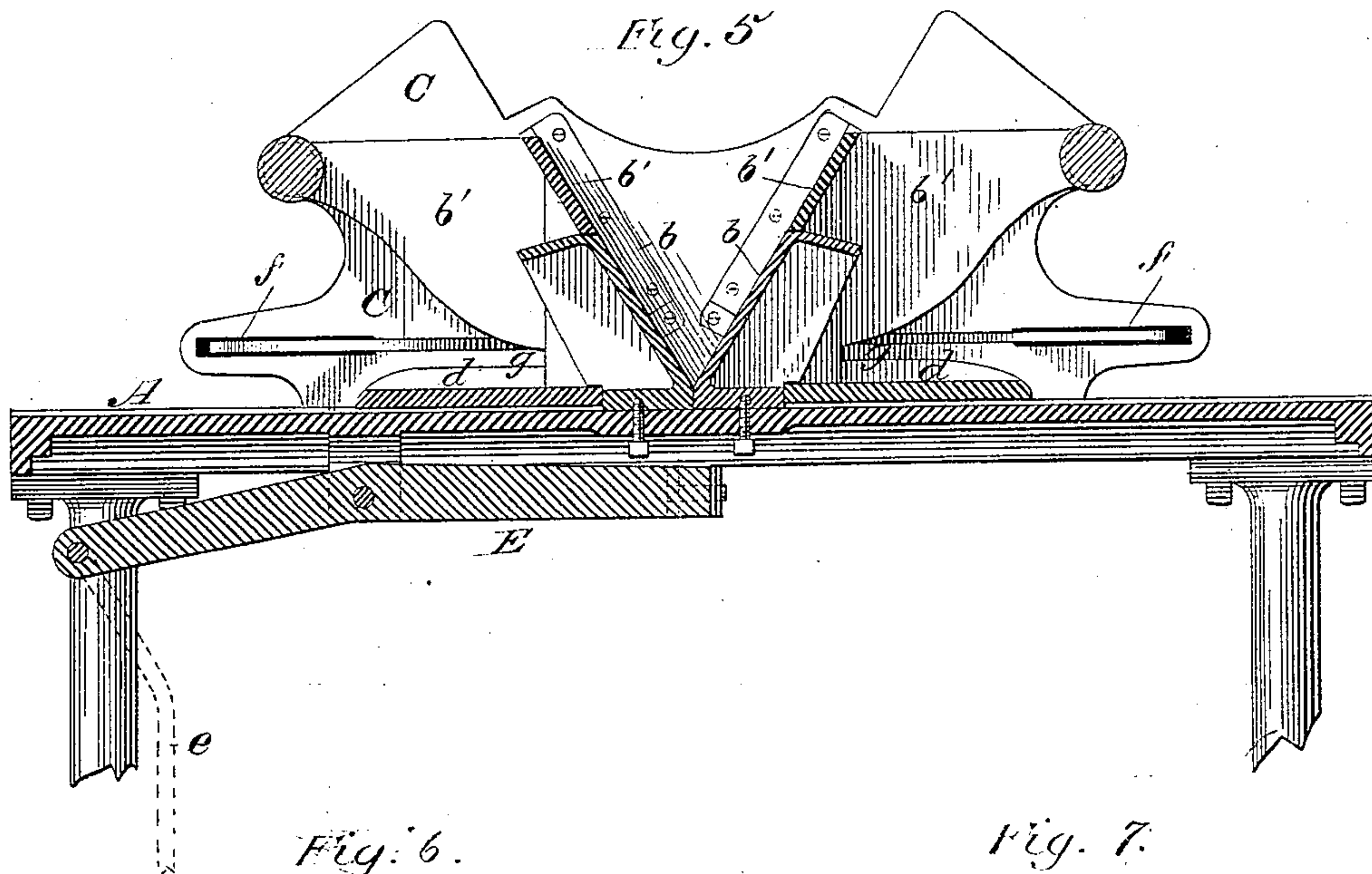
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UNITED STATES PATENT OFFICE.

WARREN B. HOWE, OF CHICAGO, ILLINOIS.

MACHINE FOR FORMING WRAPPERS FOR PACKAGES OF SMALL MERCHANDISE.

SPECIFICATION forming part of Letters Patent No. 270,669, dated January 16, 1883.

Application filed August 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, WARREN B. HOWE, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented a certain new and useful Machine for Forming Wrappers for Packages of Small Merchandise, of which the following is a specification.

My invention relates to machines for forming and folding wrappers of sheets of paper or other flexible material for or upon the contents of a package of small merchandise, and particularly candy, and is an improvement upon the device and means employed for which Letters Patent were granted to me August 3, 1880.

The objects of my invention are, first, to automatically fold against the sides of the die the end of the wrapper projecting from such sides; second, to automatically fold the flaps thus formed upon the inclined sides of the wrapper without removing the same from the die; and, finally, to automatically fold the corner-flaps upon the inclined sides of the wrapper, so that one of the respective pair of flaps will overlap the other. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a machine embodying my invention, with the movable parts of the die drawn back and the folding leaves and blades drawn to a position to best show their construction; Fig. 2, a perspective in detail of a folding-blade and its lever; Fig. 3, a plan view of the top of my machine with the folding-leaves in a horizontal position and the removable parts of the die drawn back, with parts broken away to show the spring connecting one set of folding-blades; Fig. 4, a bottom plan view of the same with the casing of the levers and folding-blades broken away; Fig. 5, a longitudinal section taken through the transverse center of the machine, with the several parts in position to fold the wrapper against the sides of the die. Fig. 6 is a perspective of a receptacle for holding the wrappers when removed from the die; Fig. 7, a perspective of the wrapper when completely folded to inclose the contents; and Fig. 8 a perspective of a combined male die and filling-scoop employed in operating my machine.

Similar letters of reference indicate the same parts in the several figures of the drawings.

A represents a bed-plate supported upon suitable legs, *a a*, at a convenient height for the operator.

Mounted upon the bed-plate, and about the center of length of the same, is a V-shaped female die, B, having open ends upon the sides of the bed-plate, and consisting of a part, *b*, rigid upon the bed-plate and forming the bottom of the die, and movable parts *b' b'* upon each side of the part *b*. This three-part die has its bottom part, *b*, V-shaped in cross-section, but the opposing sides of the part *b* are in outline the shape of an inverted V. The movable parts *b' b'* are correspondingly recessed to receive the rigid part *b*, so that each of the opposing inclined faces of the die will be continuous when the die is put together and in its operative position for shaping the flexible wrapper before folding the same. Movable parts *b' b'* of the die are designed to have a longitudinal movement upon the bed-plate, the purpose of which will presently be explained, and are guided in this movement upon parallel tracks *c c*, extending the length of the bed-plate, and upon the outside of the rigid part *b* of the die, suitable grasps, *c' c'*, affording means for moving the parts *b' b'*, and a plate, *d*, with bars *d' d'*, serving to guide these parts in their movement.

Hinged upon each side of the table are leaves C C, which I term "folding-leaves" for the reason that they fold the projecting ends of the wrapper, as will now be explained, against the sides of the die.

To fold a sheet of paper to form a wrapper, one of suitable size is placed in the female die B and conformed thereto by means of a male die, afterward to be described, or by filling in with sticks of candy, laying them parallel to each other and with their ends projecting from the sides of the die, as will be the case in the course of the usual operation, the die, however, being of a width corresponding with the length of the sticks, so that when the ends of the sticks are trued by hand, or, as in the present case, by the leaves, the ends will be flush with the outer sides of the die. When the wrapper is thus fixed in its position in the female die the folding-leaves are

raised to a vertical position against the sides of the die, and, folding the wrapper against the same, form a flap upon each of the four corners of the package, and at the same time true the ends of the sticks.

The leaves C C are operated (to swing them to a vertical position) by means of a foot-treadle, D, pivoted upon a rod, D', connecting the legs of the bed-plate, and connected with the leaves by means of a vertical rod, e, and a T-shaped lever, E, pivoted upon the under side of the bed-plate, and attached to the leaves by means of toggle-joints e' e', the weight of the leaves being sufficient to cause them to fall back to a horizontal position when the foot of the operator is removed from the treadle.

In my patent referred to, after forming the flaps by pressing the projecting ends of the wrapper against the sides of the die by hand, the wrapper, with its contents, whether a male die or candy, is raised partially out of the female die and the flaps folded by hand against the inclined sides of the wrapper, one of the two flaps on each side overlapping the other toward their upper extremities. My present invention is designed to accomplish this fold by mechanical means without lifting the wrapper or package; and to this end the folding-leaves are each recessed to receive two pivoted folding blades or wings, F F' and F' F', inclining, when swung outwardly from and at a right angle to the folding-leaves, at the same angle as the opposing faces of the die. Pivoted to lugs upon the backs of these folding-blades are levers f f' and f' f', pivoted about their center of length in suitable recesses in the folding-leaves, and having their free ends curving inwardly toward the die, and adapted to engage with beveled end walls, g g g g, of slots near the base of and in side plates of the movable parts of the die. Levers f f' are, as to the die, on diagonally opposite corners, and are shorter, or else more abruptly curved, to bring them into operation when the movable parts are drawn back, and thus cause the blades F F' to fold their respective flaps before the levers f' f' operate the blades F' F', and thereby cause the flaps to overlap each other. Each pair of folding-blades in their respective leaves are connected by springs G G to automatically return them to place in the leaves when their levers are released from the beveled lugs, either by dropping the leaves to a horizontal position or advancing the movable parts of the die toward each other until the levers are free.

In forming packages for stick-candy, licorice, and other cylindrical merchandise having a length corresponding with the width of the die, the wrapper is placed in the die and the candy, &c., filled in, taking the place of and answering the purpose of a male die; and the end of the wrapper closed upon the contents after folding, as above described; but when a supply of wrappers are to be folded for future use for small merchandise—such as assorted candy, coffee, spices, rice, &c.—a male die is

employed, which may be made solid, but preferably hollow, and adapted to be used as a filler or scoop. To this end a wedge-shaped hollow die (see Fig. 8) is formed in two parts, H H', by dividing it on a vertical line passing through its center of width between the inclined sides, said parts having hinges h h, which parts H H', when pressed together when raising the hollow die from the folded wrapper will release its contents, which will fall into the wrapper without sufficient force to injure it, as would happen with fine candy or other frail merchandise if poured from an ordinary scoop.

When folding wrappers to be afterward filled the male die is removed, and the wrappers as fast as folded are nested in a V-shaped receptacle, I, (see Fig. 6,) having closed sides, notched at i i for convenience in afterward taking hold of and removing the accumulated wrappers, or for removing a filled wrapper when the receptacle is employed to hold the same until the ends of the wrapper are folded over to close them, as set forth in my patent referred to.

The ultimate result to be attained by my invention is to form wrappers or packages of wedge shape for adapting them to be packed in cylindrical receptacles; but of course I do not wish to limit myself to the exact construction shown, for the shape of the die and the parts performing the folding operation may be varied both as to construction and shape—as, for instance, the form of the folding-blades, the manner of dividing the die, and the means for operating the blades and leaves may be varied without departing from the spirit of my invention. So, also, to form a truncated wedge-shaped package or one of pyramidal, truncated cone, polygonal, or other similar shapes, when the folding of the sheet of paper would cause flaps to be formed at the angles or corners, the same invention would apply, and would require no more than mechanical skill to change my machine accordingly.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A female die consisting of a fixed part V-shaped in cross-section and two removable parts conforming thereto, substantially as described.

2. The combination, with a female die open upon its sides, of leaves hinged to the base-plate, and means, substantially as described, for operating said leaves.

3. The combination, with the female die having sliding parts, of the hinged leaves, substantially as described.

4. The combination, with the divided female die, of pivoted folding-blades, and means, substantially as described, for supporting said blades.

5. The combination, with the female die having sliding parts, of folding-leaves and pivoted blades, substantially as described.

6. The hinged leaves, in combination with

folding-blades pivoted upon the face of and at points between the ends of said leaves, substantially as described.

5 7. The combination, with the female die, of the hinged leaves operating against the open sides of said die, and jointed together, and of the treadle mechanism for operating the same, substantially as described.

10 8. The die B, consisting of the rigid part and the recessed movable parts, in combination with the parallel guide-tracks, the hinged and simultaneously-operating folding-leaves, substantially as described.

9. The combination, with the female die having movable parts, of the hinged folding-leaves, 15 the folding-blades pivoted to said leaves, and levers pivoted to the folding-blades and adapted to be operated by the movable parts of the die, substantially as described.

10. The combination, with the female die, of 20 the hollow male die, divided and hinged, all substantially as described.

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