

No. 897,113.

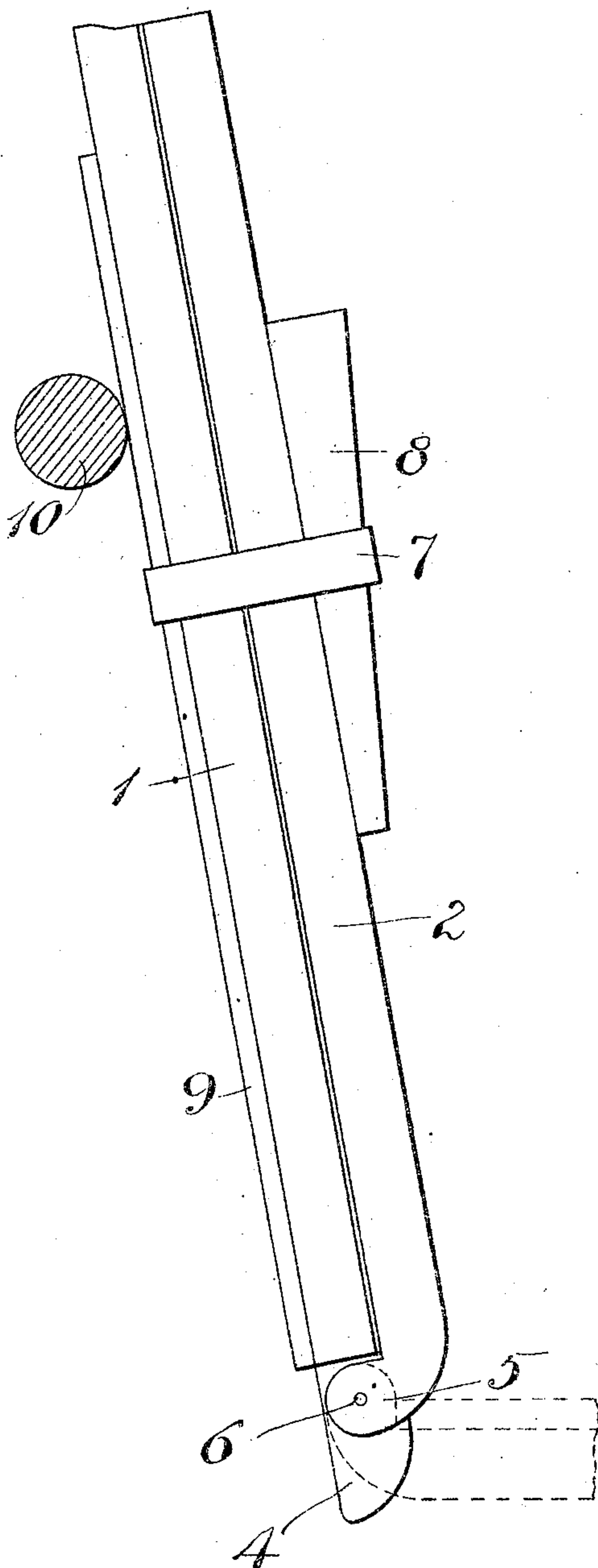
PATENTED AUG. 25, 1908.

C. H. LAWTON.  
MOLD.

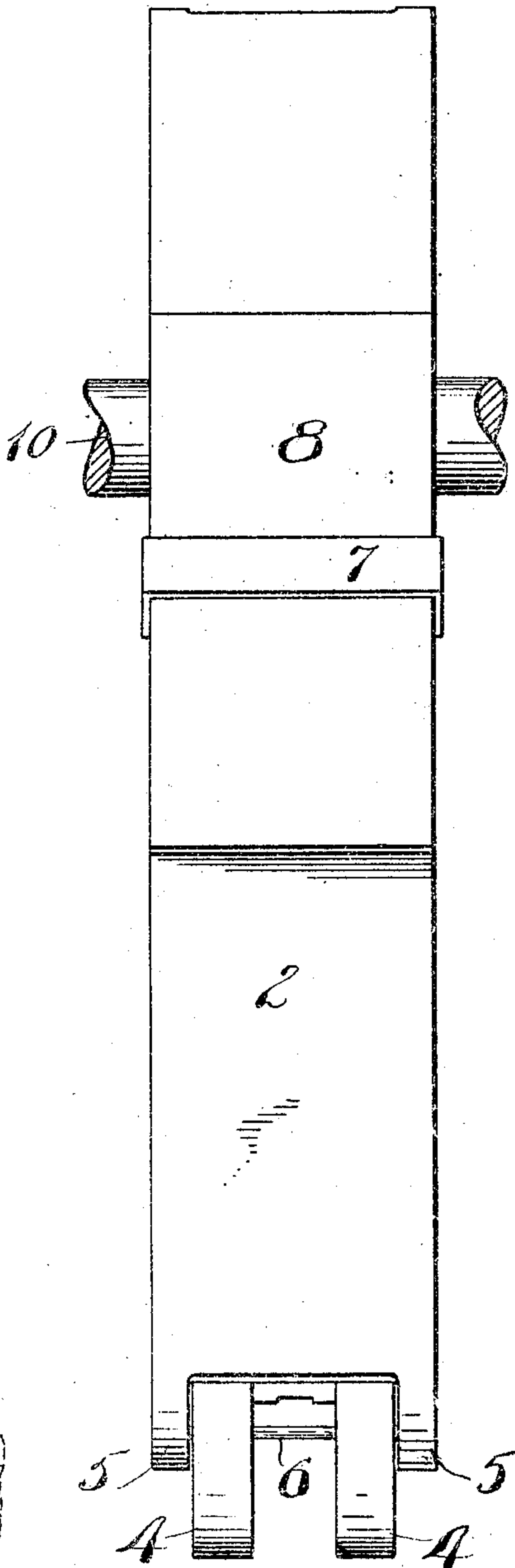
APPLICATION FILED NOV. 30, 1907.

2 SHEETS—SHEET 1.

*Fig 1.*



*Fig 2.*



Witnesses:  
*Fred M. Dannerfelter.*  
*Augusta Moore.*

Inventor  
*Charles H. Lawton.*  
By his Attorney's  
*Paulus Dannerfelter.*

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2 SHEETS—SHEET 2.

Fig 3.

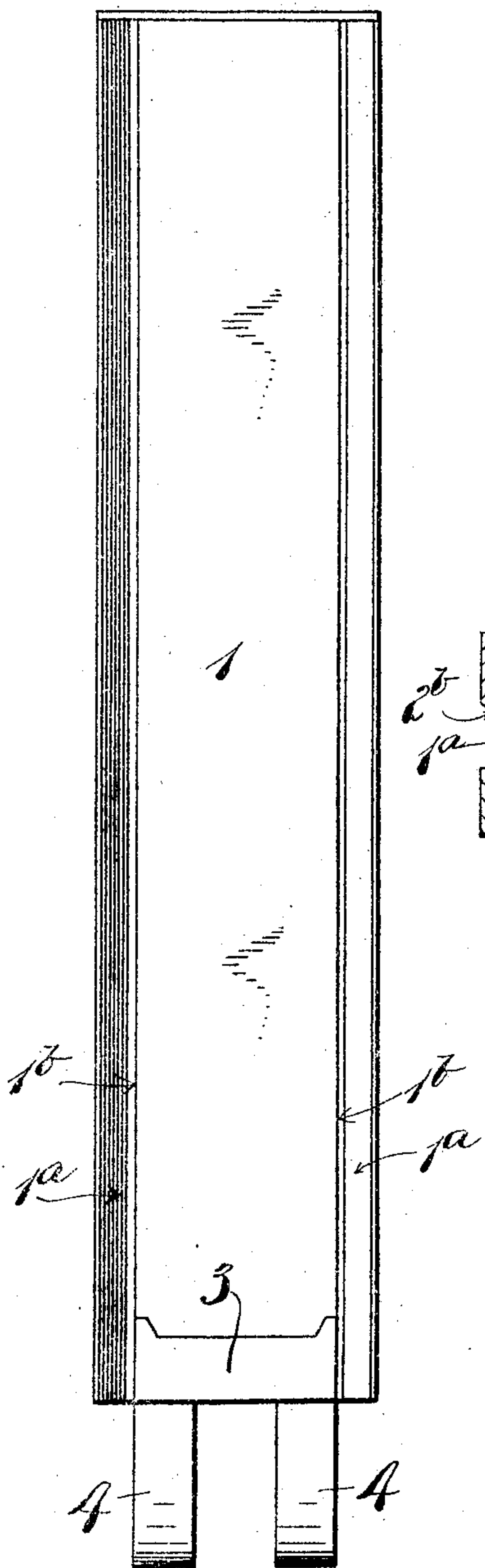


Fig 4.

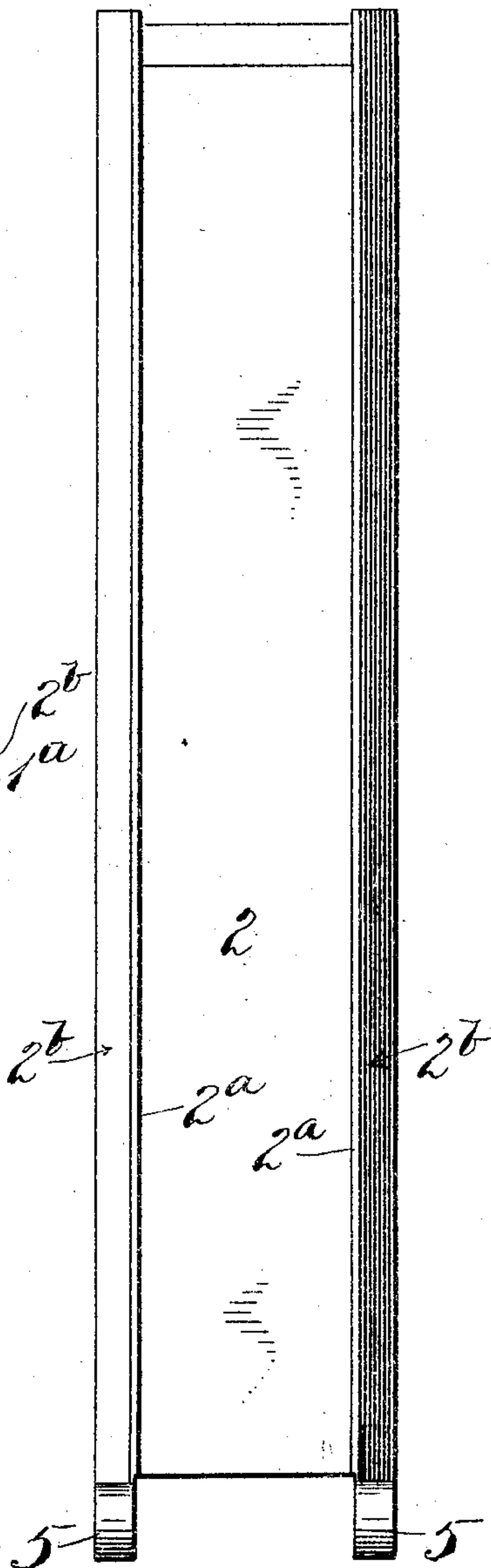
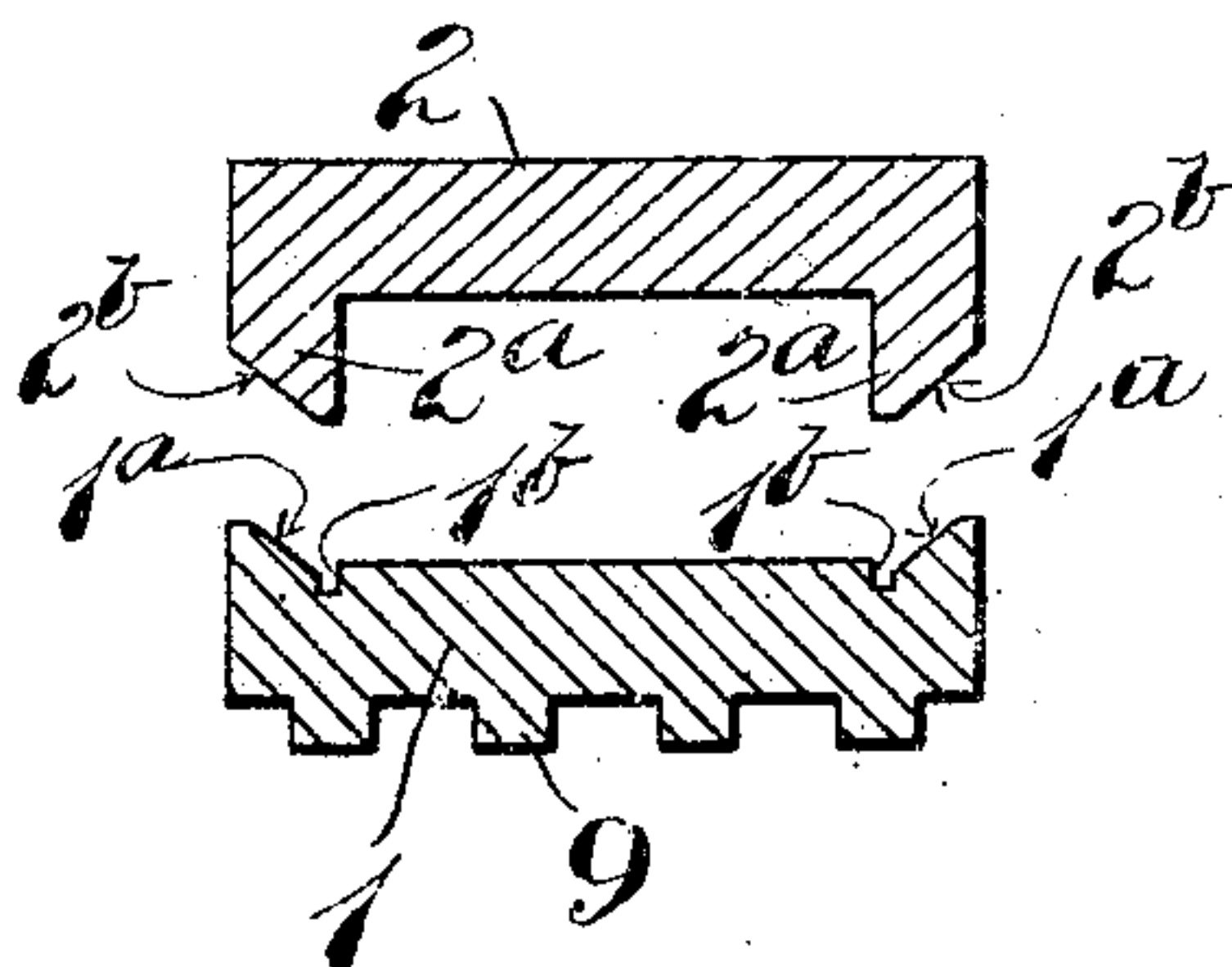


Fig 5.



Witnesses:  
*Fred M. Dammeyer.*  
*Langdon Moore.*

Inventor  
*Charles H Lawton.*  
By his Attorneys  
*Buttitt, Brown & Threlkeld*



# UNITED STATES PATENT OFFICE.

CHARLES H. LAWTON, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO AMERICAN BRASS COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

MOLD.

No 897,113.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed November 30, 1907. Serial No. 404,618.

*To all whom it may concern:*

Be it known that I, CHARLES H. LAWTON, a citizen of the United States, residing at Torrington, county of Litchfield, State of Connecticut, have invented certain new and useful Improvements in Molds, of which the following is a full, clear, and exact description.

This invention relates to improvements in molds, and particularly to a mold for casting ingots and the like.

The object of the invention is to provide a simple and effective construction whereby ingots may be produced in a two-part cast mold.

Heretofore in the casting of ingots and other articles in molds of this character, a fin is usually produced at the edge of the article. By my invention this is avoided. Furthermore, the construction is such as to facilitate easy handling.

In the drawings, Figure 1 is a side elevation of a complete mold; Fig. 2 is a front elevation of the same; Fig. 3 is a front elevation of one part removed; Fig. 4 is a corresponding view of the opposite part removed; Fig. 5 is a section through both parts.

The mold is formed essentially of two separate parts 1 and 2. Either part may be designated the cover, and the other part the back, but in this description I will refer to the part 1 as the back, and the part 2 as the cover. These parts 1 and 2 when assembled, or put together, form between them a space into which the molten metal is poured, said space giving to the cast article the desired outline. The cover 2 is provided with side flanges 2<sup>a</sup>, 2<sup>a</sup>, while the base 1 is provided with recesses to receive the edges of said flanges when the two parts of the mold are assembled ready to receive the molten metal. As will be seen, these flanges make a snug engagement with edges 1<sup>b</sup> 1<sup>b</sup> of the back, overlapping the same in such a manner as to prevent the molten metal from partially escaping at the sides so as to form the objectionable side fins.

In the preferred form of my invention, the recess into which the flanges 2<sup>a</sup> 2<sup>a</sup> project have inclined surfaces 1<sup>a</sup> 1<sup>a</sup>, and the edges 2<sup>b</sup> 2<sup>b</sup> of the flanges are suitably beveled so that when the two parts are brought together, these inclines coact to force the flanges 2<sup>a</sup> 2<sup>a</sup> tightly against the shoulders 1<sup>b</sup> 1<sup>b</sup>, closing in

so tightly as to provide, in effect, an integral mold and thereby preventing the formation of a rough fin. While these inclines are preferable, in the broadest sense they are not essential to the invention, since the fit of the side flanges of the part 2 with the shoulders 1<sup>b</sup> 1<sup>b</sup> might be such as to avoid the necessity of the same.

As shown, the part 1 is provided with a shoulder 3, which constitutes a closure for the lower end of the mold when the parts are assembled and set up. This also, to a certain extent, serves as a guide to aline and center the two members 1 and 2 as they are being closed. In performing the function of a guide the danger of bruising the closing-in edges is avoided.

4—4 are extensions or feet at the lower end of the part 1 and to these extensions it is preferable to hinge the part 2, as by the knuckles 5—5 and a pivot pin 6. The extensions 4 project below the knuckles 5—5 with the result that the operator is permitted to handle the mold very quickly to open or close the same. The position of the mold in use is substantially upright, and when the mold is put in position it leans against a rack, such as 10, the lower end being supported on the floor. Any suitable form of clamp may be applied to the mold to secure the parts 1 and 2 together, for example, a band 7 and a wedge 8. When the mold is set up ready for use this band engages the two parts, as shown, and the edge is driven into place, thereby securely clamping the two members together.

In the form shown, 9—9 are reinforcing ribs on the rear of the back, which may be provided to add strength. The side flanges on the cover 2 perform the function of reinforcing ribs to strengthen the same, thereby making it unnecessary to rib the back of the cover, although, of course, such ribbing may be provided if desired. In this form of mold I am enabled to cast the two members 1 and 2, and the same may be produced very economically since it is only necessary to machine the closing-in edges. For example, in the preferred form the inclines aforesaid would be smoothed up or machined so as to operate freely. It is also desirable to machine or smooth up the edges of the flanges where they engage the shoulders 1<sup>b</sup> 1<sup>b</sup>, so as to make a very tight joint. In operation it



is customary to clean and grease the interior surfaces of the mold with which the hot metal engages. By my construction this cleaning and greasing process is simplified and made easy, since ready access may be had to the said parts at any time. Furthermore, by having these parts connected by the pivoted joint, a complete set is always found, thereby avoiding the necessity of selecting two separate pieces that are properly adapted to one another. As soon as the metal has sufficiently cooled to harden, the clamp may be released and the part 2 swung open (see dotted lines Fig. 1), thereby releasing the ingots, which may be quickly withdrawn and the mold prepared for another operation. By hinging the parts, the danger of breaking is also avoided, and the operator can very readily handle the same in opening, since one end is held by the hinge. Another advantage of the hinged joint in connection with the interlocking parts is, that it performs, in a way, the function of a clamp guaranteeing the proper closing in of the lower end of the mold at all times. By this hinged arrangement too it is possible to dispense with more than one clamp, although in practice as many may be employed as desired. Heretofore the constructions have been such as to require the presence of a plurality of clamps.

By avoiding the formation of the fin a very substantial saving is effected not only in labor, but also in waste or scrap, since for the use of ingots, for example in rolling mills, it is necessary to first trim off and discard these objectionable fins before the ingot is in proper shape for the mill.

What I claim is,

1. In a mold, the combination of a cover having depending side flanges, a back having grooves to receive said flanges, one of the abutting surfaces between each flange and groove at the outer side of the flange being beveled and arranged to force the inner side wall of said flange laterally into intimate contact with the inner side wall of its groove, and means to clamp the parts together.

2. In a mold, the combination of a cover having depending side flanges, a back having grooves to receive said flanges, one of the abutting surfaces between each flange and groove at the outer side of the flange being beveled and arranged to force the inner side wall of said flange laterally into intimate contact with the inner side wall of its groove, means to clamp the parts together, and a hinge and closure at one end of said parts.

3. In a mold, the combination of a cover having depending side flanges, a back having grooves to receive said flanges, both of the abutting surfaces at the outer side of each flange and groove being correspondingly beveled and arranged to force the inner side wall

of the flange laterally into intimate contact with the inner side wall of each groove.

4. In a mold, the combination of a cover having depending side flanges, a back having grooves to receive said flanges, one of the abutting surfaces between each flange and groove at the outer side of said flange being beveled and arranged to force the inner side wall of the flange laterally into intimate contact with the inner side wall of its groove, means to clamp the parts together, hinge lugs and knuckles depending from the lower end of the cover and back, and a pivot pin passing through said lugs and knuckles.

5. A two-part hinged mold, sides on one part engaging in recesses on the other part, an end closure on the latter part, and a hinge member on said part extending below the hinge member on the other part.

6. A two-part hinged mold, sides on one part engaging in recesses in the other part, and an end closure on the latter part, the opposite end being open at all times, the said sides having beveled surfaces coacting with corresponding beveled surfaces on said recesses when the parts are brought together.

7. In a mold, a cover, depending flanges at each side thereof, a back having corresponding recesses to receive the flanges, a hinge at one end connecting the cover and the back, and a closure at the same end, said flanges beveled on the outer side coacting with corresponding beveled surfaces on said recesses when the parts are brought together to force said flanges laterally into intimate side engagement with that part of the mold between said flanges.

8. In a mold, a back, a cover adapted thereto, a side flange on one of said parts adapted to engage the opposite part, and means coacting with said flange when said cover and back are brought together to force said flange laterally into intimate closing contact with said opposite part.

9. In a mold, a back, a cover adapted thereto, two side flanges on one of said parts adapted to engage the opposite part, and means coacting with said flanges when said cover and back are brought together to force said flanges laterally into intimate closing contact with said opposite part.

10. In a mold, a back, a cover hinged thereto, means to clamp said parts together, side flanges carried by one of said parts and adapted to engage the opposite part, and means coacting with said flanges when the cover and back are clamped together to force said flanges laterally into intimate closing contact with said opposite part.

CHAS. H. LAWTON.

Witnesses:

ARTHUR H. QUIGLEY,  
E. H. YATES.