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MOLD FOR CASTING TYPE.

No. 354,060. Patented Dec. 7, 1886.

Fig 1.

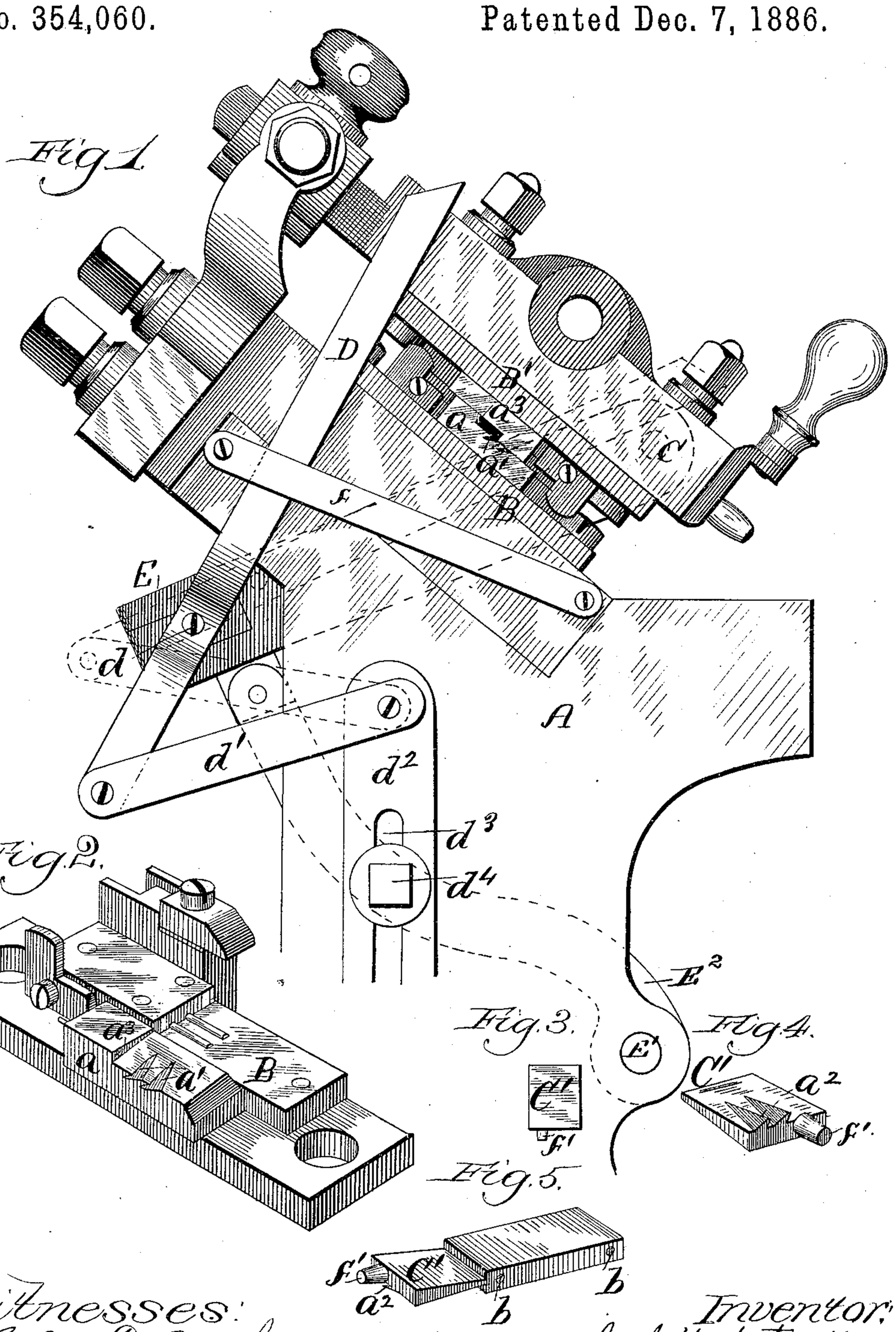

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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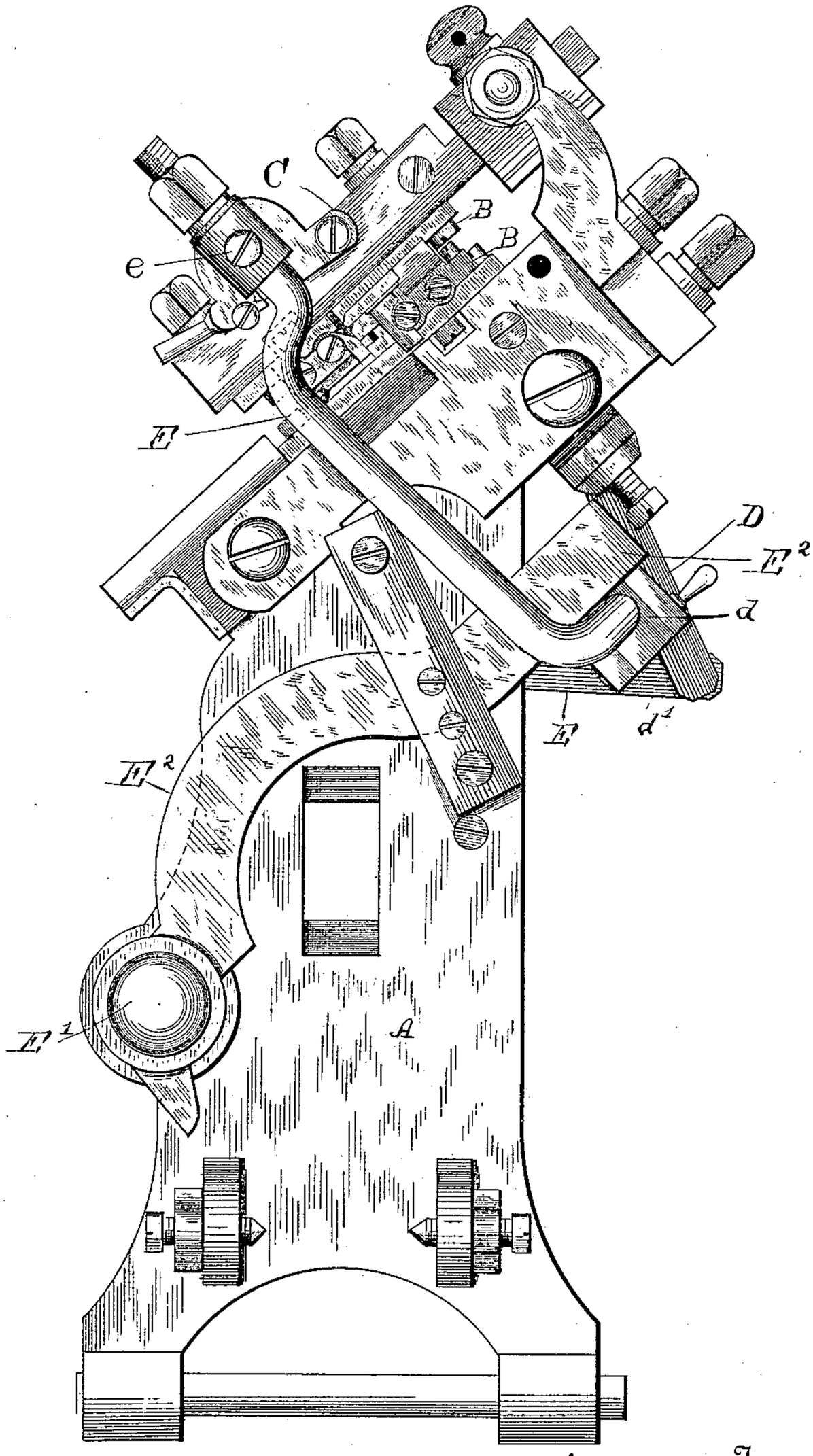
Fig. 6.



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MOLD FOR CASTING TYPE.

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Fig. 7.

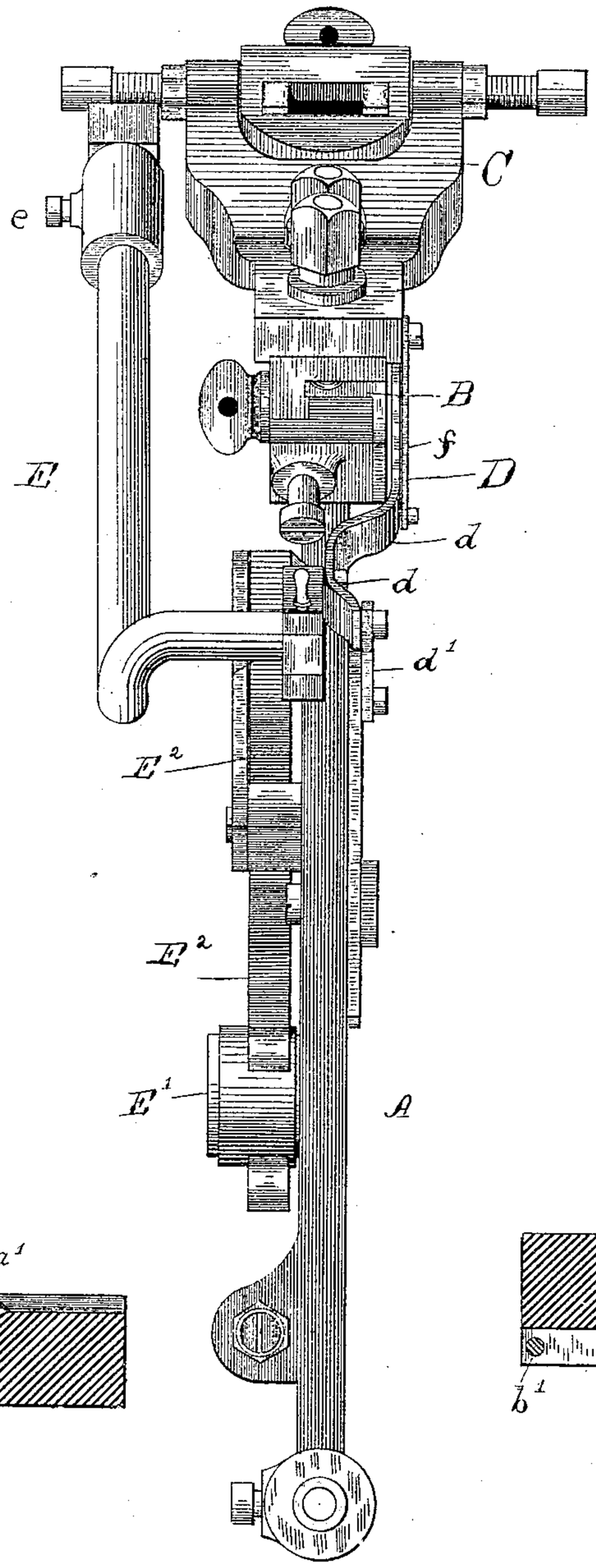


Fig. 10.

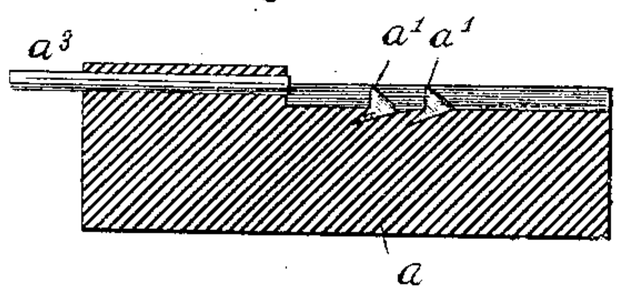
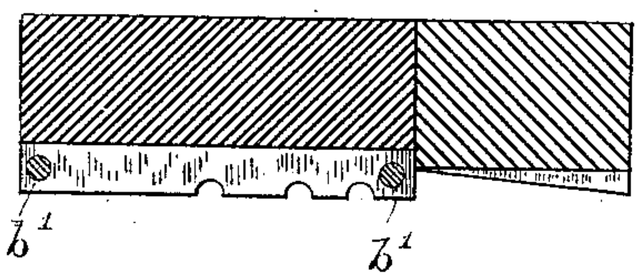


Fig. 9.



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(No Model.) 4 Sheets—Sheet 4

C. HOCHSTADT, P. WENZEL & H. HEINEBACH.

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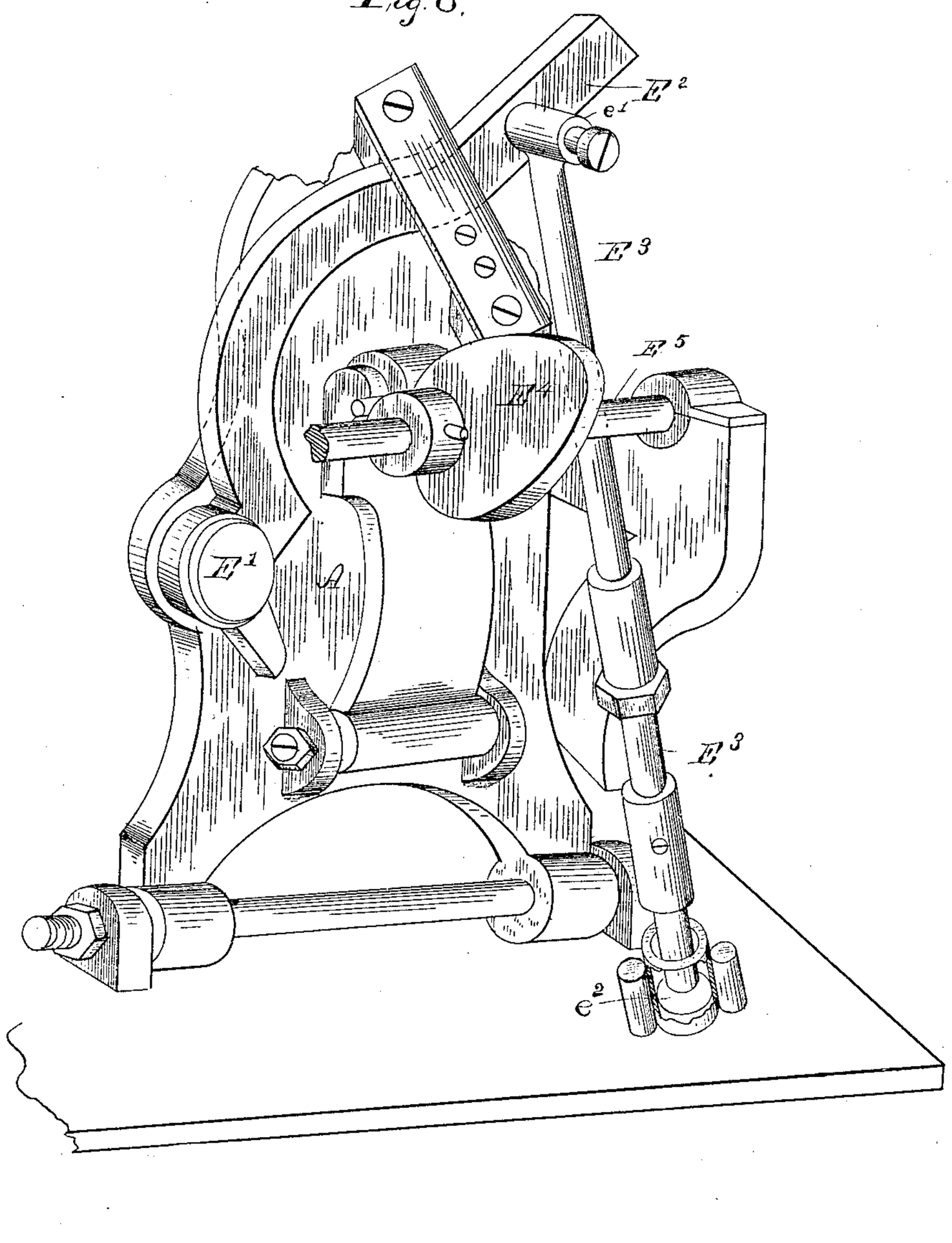
Fig. 8.



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UNITED STATES PATENT OFFICE.

CARL HOCHSTADT, PHILIPP WENZEL, AND HERMAN HEINEBACH, OF CHICAGO, ILLINOIS.

MOLD FOR CASTING TYPE.

SPECIFICATION forming part of Letters Patent No. 354,060, dated December 7, 1886.

Application filed May 5, 1885. Serial No. 164,492. (No model.)

To all whom it may concern:

Be it known that we, CARL HOCHSTADT, PHILIPP WENZEL, and HERMAN HEINEBACH, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Molds for Casting Type, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in type-casting machines; and it consists of means for retaining the jet or sprue in the mold until the type is broken away, and also of means for ejecting said jet or waste metal after the type has been separated from the same, as will be hereinafter more fully set forth, and pointed out in the claims.

Figure 1 is an elevation showing the back part of a type-casting machine embodying our improved features. Fig. 2 is a view in perspective of the lower stationary half of the mold detached from its supporting-base. Fig. 3 is a top view of the jet or sprue. Fig. 4 shows the under side of the same, and Fig. 5 shows the relative form of the type-body and jet just after they are cast and before they are broken apart; Fig. 6, an elevation on the side opposite to that shown in Fig. 1; Fig. 7, a rear elevation showing the jaws open; Fig. 8, a detail in perspective, showing the means for moving the arm E^2 to operate the moving part of the mold; Fig. 9, a transverse section of the upper mold, to show the type-retaining pins b'; and Fig. 10, a section of the lower mold, showing the jet-detaining pin a^3 and the recesses a'.

Referring to the drawings, A represents the apron of the machine; B, the lower stationary half of the mold, and B′ the upper half adjustably secured to the under side of the movable jaw C, which is adapted to open upward on its pivot each time that a type is cast, for the purpose of allowing the same to drop out.

The ingate-plate a of the lower half of the mold is provided on its face with one or more notches, a', which are cut inward from the edge and at an oblique angle relative to the face of the mold, as shown in Figs. 1 and 2. These notches are of the greatest depth at the outer edge, gradually growing more shallow as they progress inward, and finally vanish near the middle of the ingate-plate, as shown in Fig. 2. In the process of casting, these notches or grooves become filled with the molten metal and form the wedge-like projections a^2 on the under side of the jet or sprue C′, as shown in Fig. 4. The notch or notches a' thus serve to retain the waste piece of metal in the place where it is formed until dislodged by the means to be hereinafter described. The notches being cut in at an oblique angle relative to the plane in which the type is raised by the upper half of the mold, effectually prevents the jet from moving during the act of breaking away the type from the same.

The type is made to momentarily adhere to the upper part of the mold by means of a number of pins, as set forth in another application which we now have pending. These pins are similar to the pins a^3. (Shown in the ingate-plate a, Fig. 2.) These pins are adapted to be driven in or out, so as to secure a greater or less hold in the type-body, in accordance with the width of the type being cast. b represents the recesses or marks left on the edge of the type by the inner ends of the pins b' being slightly embedded during the process of casting, for the purpose of breaking the same from the surplus metal. Of course a notch, groove, recess, or burr on the mold might produce the same result.

The pin a^3 (shown in Fig. 2) is one of the means which may be employed for retaining the jet in place until after the type has been broken away; but this requires to be adjusted—that is, driven in or out—in accordance with the width of the type being cast. This pin may of course be used in connection with the notches, but ordinarily the notches will entirely dispense with the use of the same.

The notches a' require no adjustment, and one or more are exposed as the upper mold-block is set for type of different widths. As shown in Fig. 1, one of the notches is exposed, which will give a sufficient holding-ground for type of the width of the ingate-opening. The next outward longitudinal adjustment of the upper mold-block, to cast the next larger size of type, will uncover a second notch, and so on, thus automatically increasing or diminishing the holding-ground as required.

It is of course obvious that different-shaped

notches or grooves may be located in different parts of the ingate plate or mold, or a burred or roughened surface might be made to answer the purpose. We do not, therefore, strictly confine ourselves to the precise feature herein set forth, but may vary the same without departing from the spirit of our invention.

The upper end of the moving piece E is attached to the movable jaw *c* at *e*, as indicated in dotted lines, Fig. 1, and shown in full lines, Fig. 6. The lower end is attached at *d* to the rocking arm E^2, pivoted to the frame A at E'. This arm E^2 is operated by connecting-rod E^3, the upper end, *e'*, being pivoted to said arm and the lower end to the stationary base of the machine by a ball-and-socket joint, e^2, all as shown in Fig. 8. The apron A is operated by the cam E^4 on the power-shaft E^5. When the apron is in the position shown in Fig. 8, the jaw C is open, as shown in Fig. 7. If the cam be moved to the position opposite to that shown in Fig. 7, the apron will be moved forward and the rod E^3 will draw the arm E^2 down and close the jaws.

For casting the smaller size of type a notch may be placed in the corner of the ingate-plate directly under the place occupied by the pin a^3.

The reciprocating traveling arm D is located at the back side of the machine, and is pivoted at *d* to the moving piece E, so that when the latter is moved the arm D will move with it. The lower end of this arm is pivoted to the fulcrum-link *d'*, the opposite end of which is pivoted to the vertically-adjustable slide d^2, provided with the slot d^3, and is secured to the apron A by means of the clamping-screw d^4. By this means the throw of the arm D may be varied. Ordinarily, however, when the arm is set in the proper position it needs no other adjustment, so the adjusting mechanism shown is more of a convenience than a necessity, as the arm can have a direct attachment to a moving part of the machine for the purpose of actuating the same, and the link *d'* and the slide d^2 be dispensed with. The guard *f* prevents the arm D from having a lateral movement. The arm is shown in its normal position, the dotted lines indicating the opposite position, and may be attached to any part of the machine capable of imparting the required motion.

The function of the arm D is to strike and eject the jet from the mold just after the mold has opened far enough to break the type from the jet or waste, the edge of the arm coming in contact with the teat *f'* on the jet and dislodging it from the position in which it is cast when the same drops out of the mold. By this arrangement the type and waste matter are automatically separated in the process of casting, thus dispensing with the necessity of having to do this work by hand-labor.

We do not claim, in a type-casting machine, the combination of the fixed member of the mold, the vibrating member of the mold, and an arm actuating the vibrating member, and a jet-discharging arm or wiper located in the rear of the fixed member and actuated by the arm which actuates the vibrating member of the mold, nor the combination of a fixed mold-section, a vibratory mold-section, an arm which actuates the vibratory mold-section, and a wiper-arm actuated by connections with the arm which actuates the vibratory mold-section, nor the combination of a vibratory mold-section, a fixed mold-section having recesses to form detents in the jet, an arm for moving the vibratory mold-section, and an arm and link for removing the jet from the mold; nor do we claim in this application the broad idea of a stationary mold having a jet-retainer, combined with a vibratory or other mold-section having a type-detainer, nor a jet-discharging arm or wiper, which may or may not receive motion from a moving part of the machine, in combination with said parts, as they form the subject-matter of claims 1, 2, 3, 4, and 6 in our application No. 127,165.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a type-casting mold, the combination of the upper or vibrating member having a type-retaining device and the lower or stationary member having a recess or recesses to form detents upon the jets, substantially as described.

2. In a type-casting machine, the combination, with a fixed mold-section provided with recesses, of an arm actuated by a moving part of the machine and moving close to the jet end of the mold, substantially as described.

3. In combination, substantially as set forth, the mold having in one member a type-detainer and in the other or companion member a jet-detainer, and a wiper or jet-discharging arm actuated by a moving part of the machine independently of the mold and moved past the jet end of the jet-detaining member as the mold opens.

4. In a type-casting machine, the combination, with the lower or stationary member of the mold, provided with recess or recesses to form detents to detain the jet therein, of an arm actuated by a moving part of the machine and located and adapted to move close to and parallel with the jet end of the mold to engage the jet and release the detents from the mold, substantially as described.

5. In a type-casting machine, the combination, with a jet-ejecting arm adapted to move in connection with said machine, of an adjusting-slide, a fulcrum-link connecting said arm and slide, and means for adjustably securing said slide, whereby the throw or travel of said arm may be varied, substantially as set forth.

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