

(No Model.)

T. McGRANE.

APPARATUS FOR CASTING HORSESHOES.

No. 315,314.

Patented Apr. 7, 1885.

Fig. 1

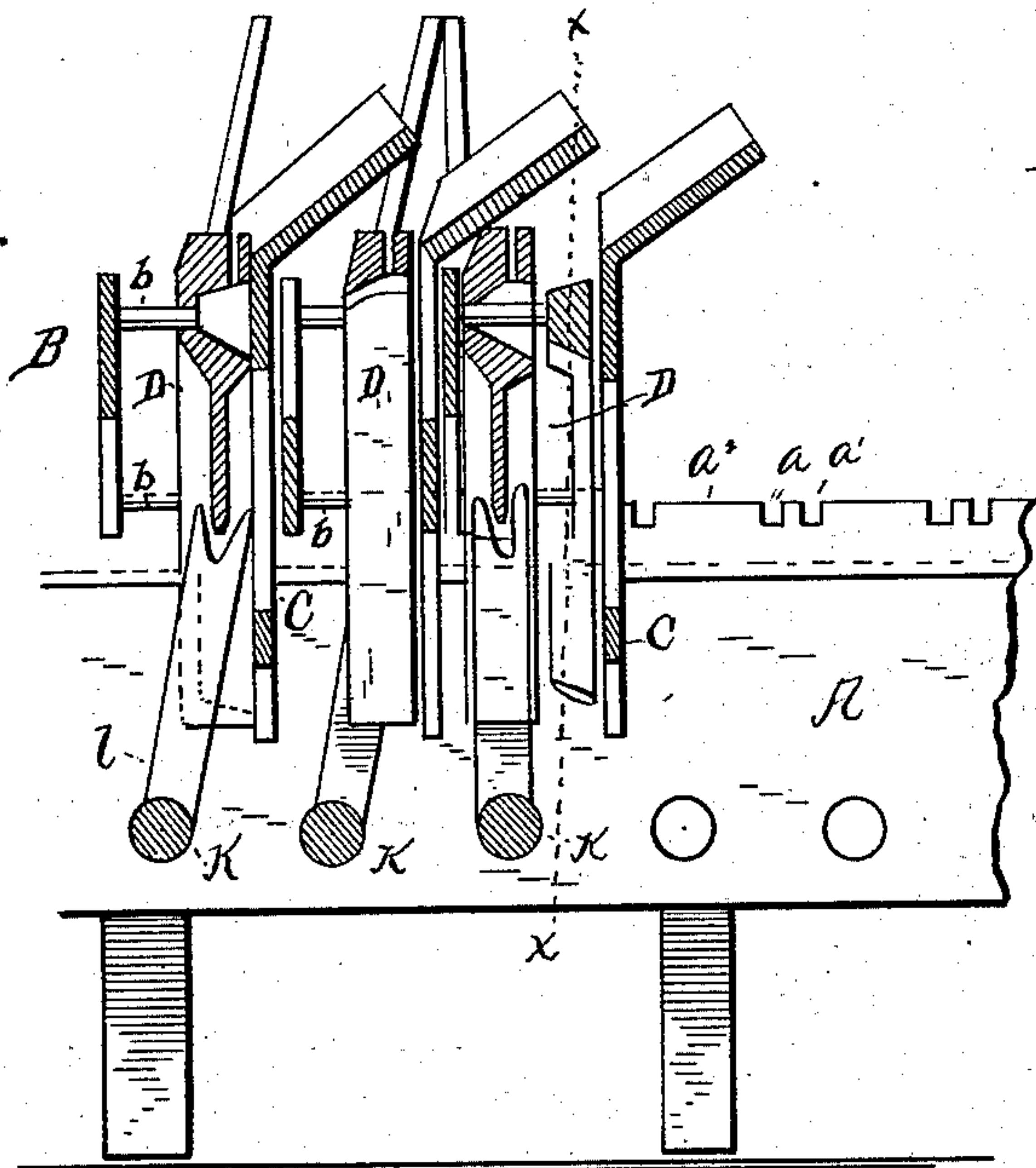


Fig. 2

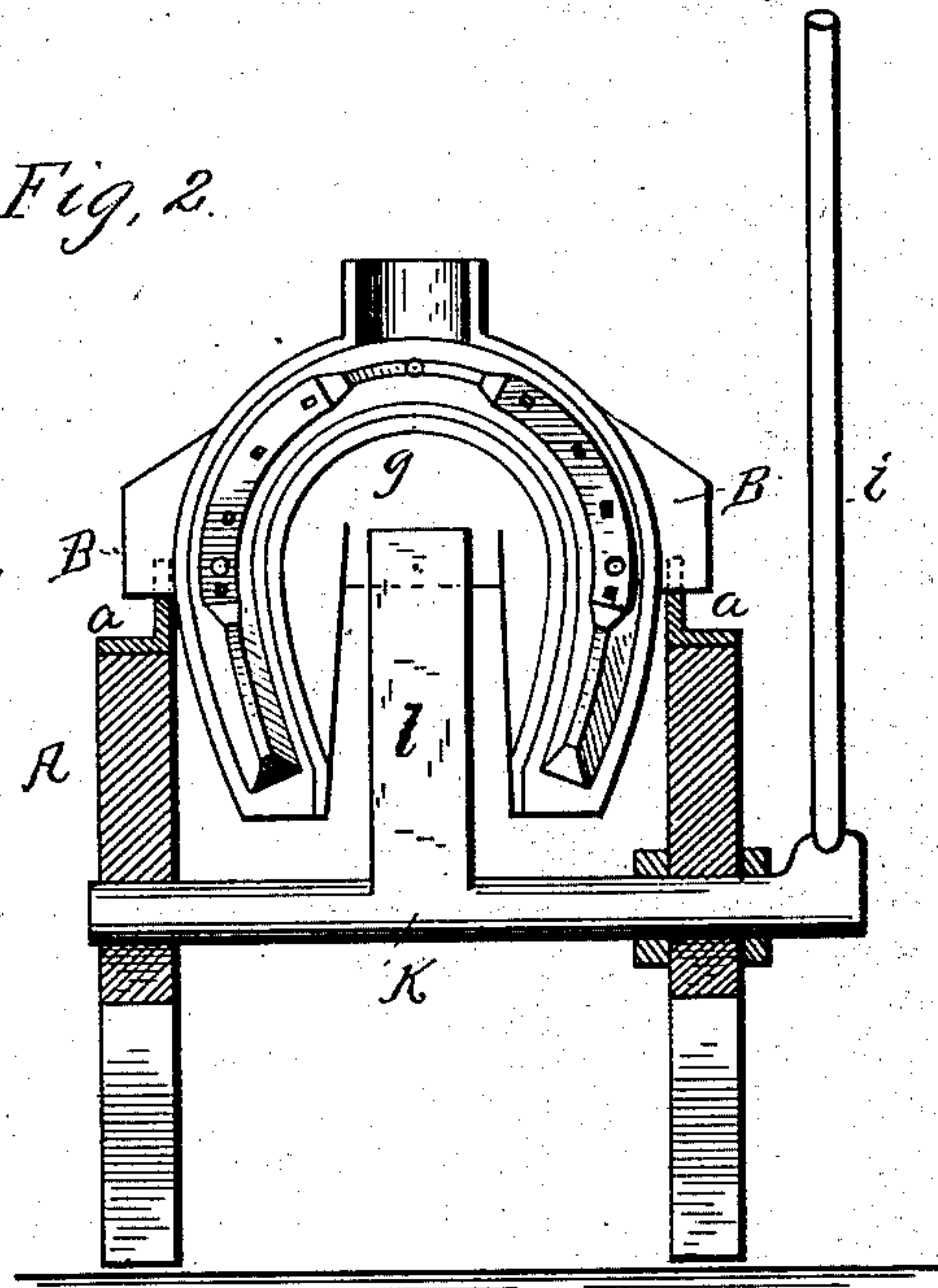


Fig. 3

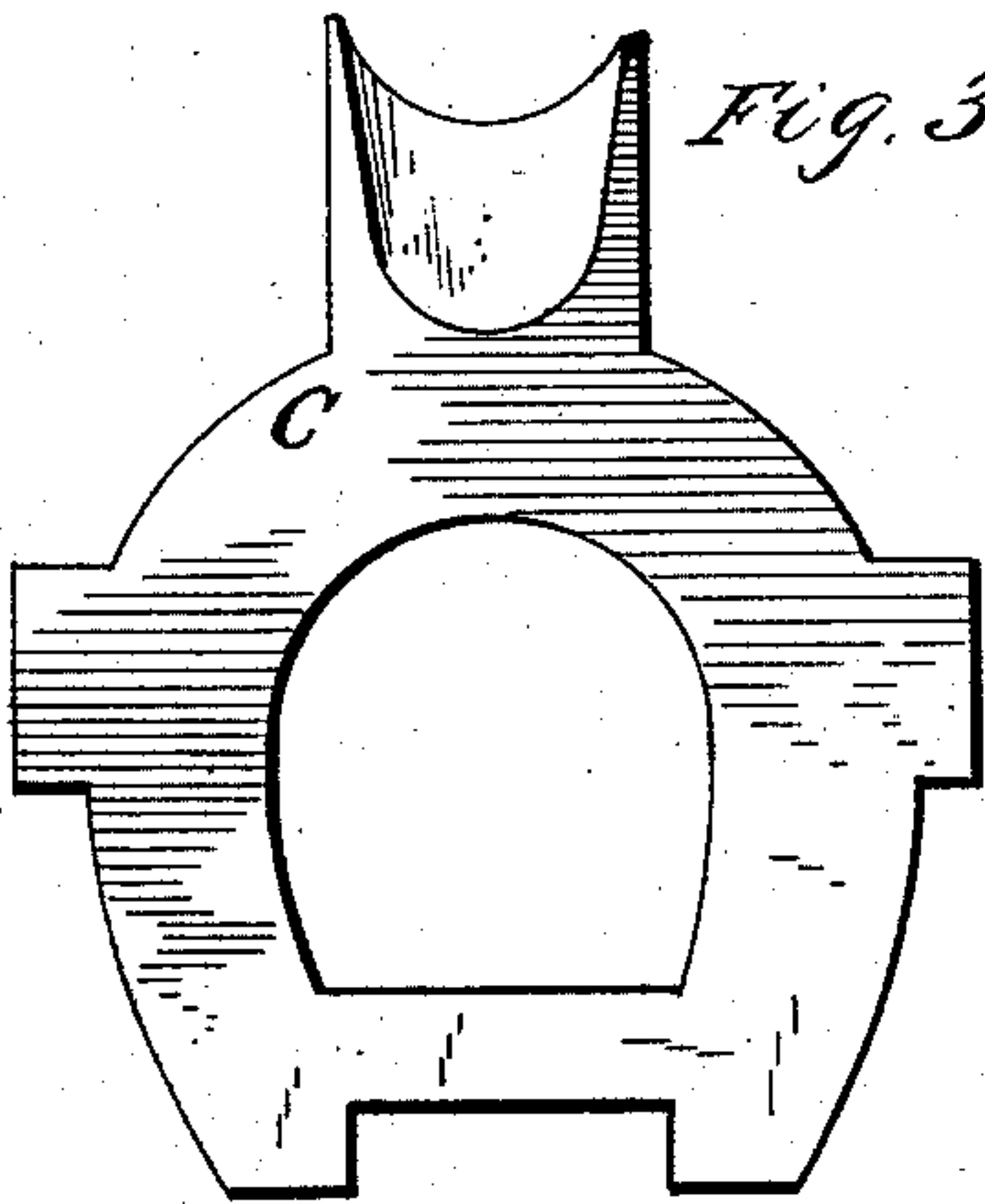


Fig. 4

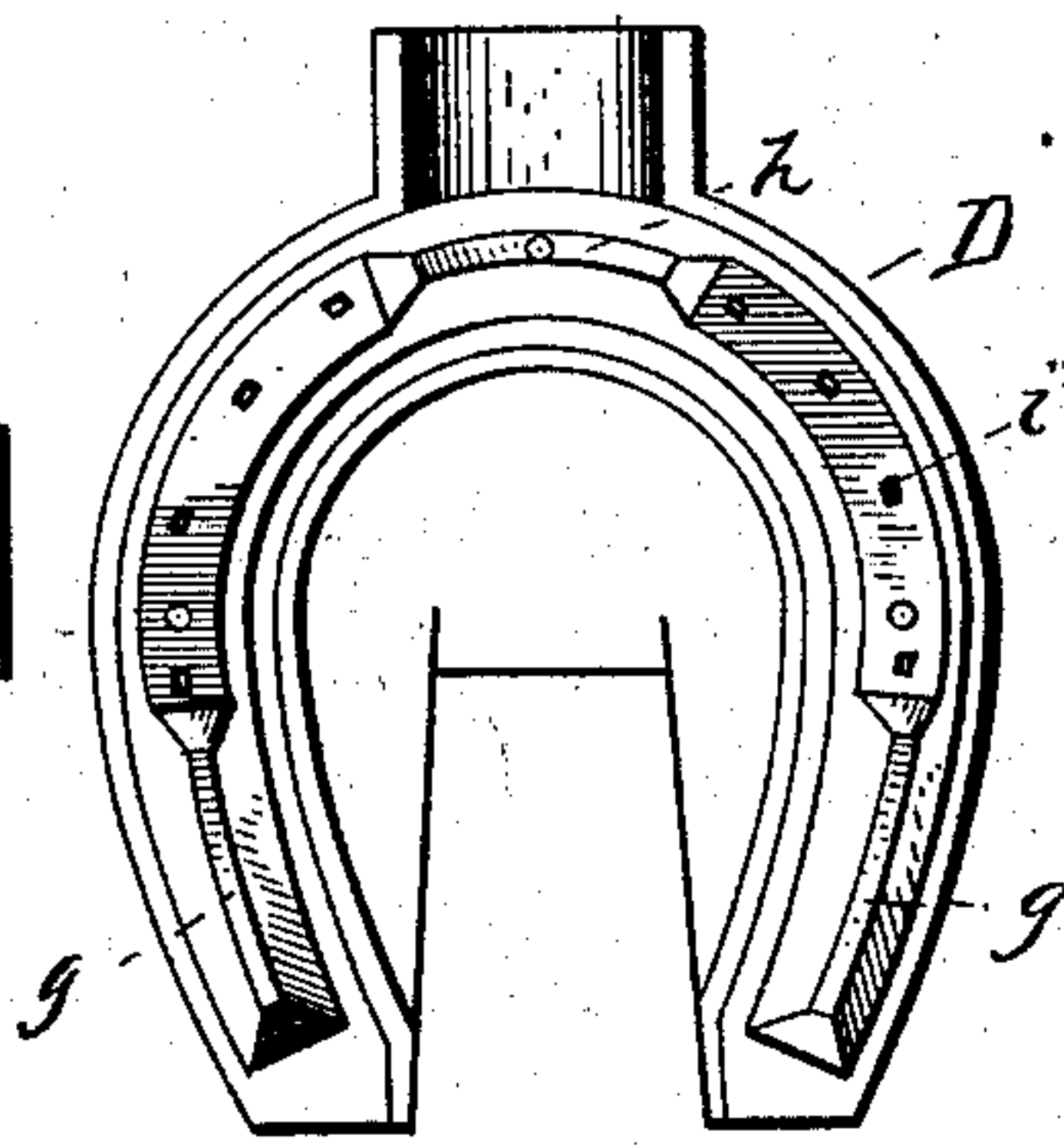


Fig. 5

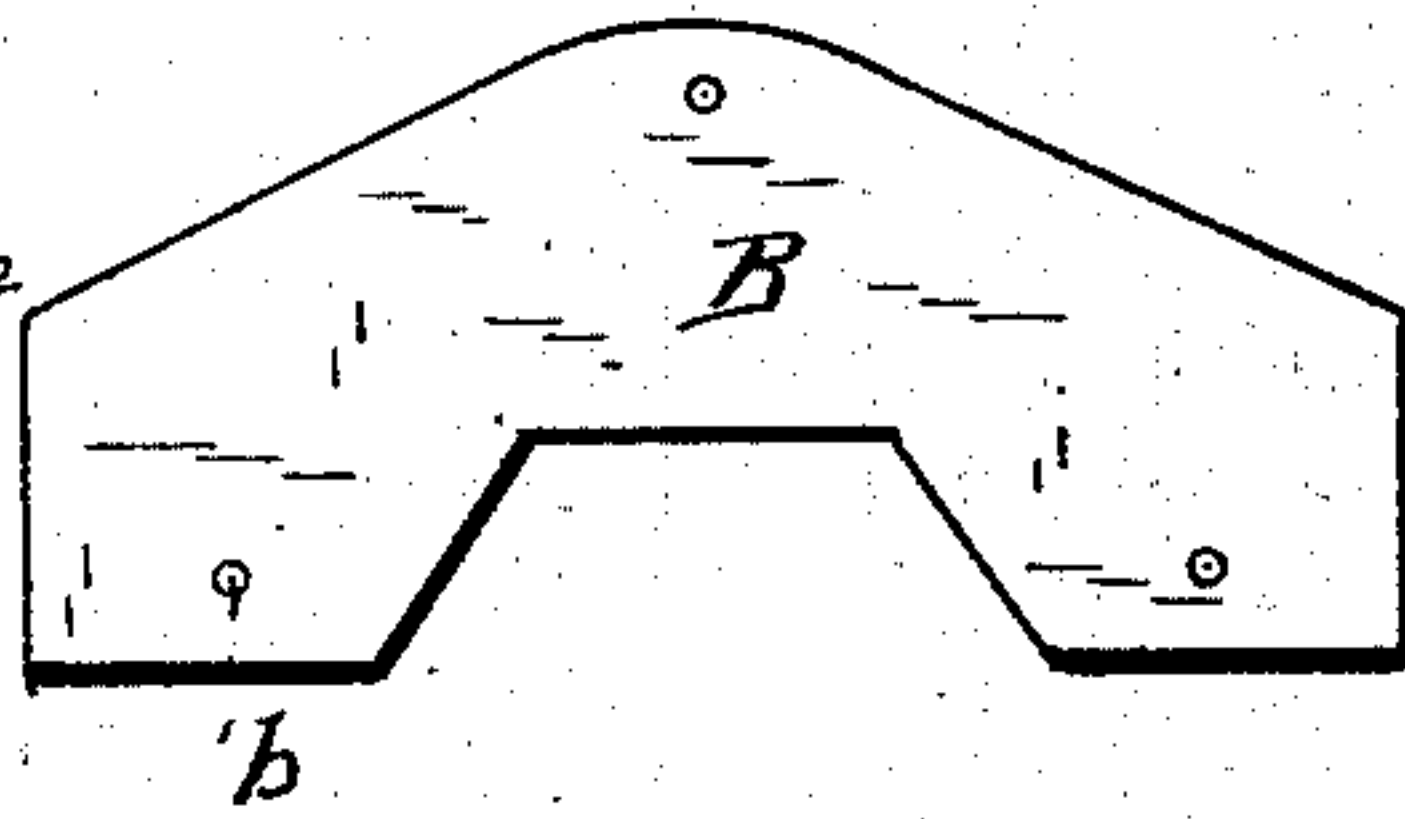
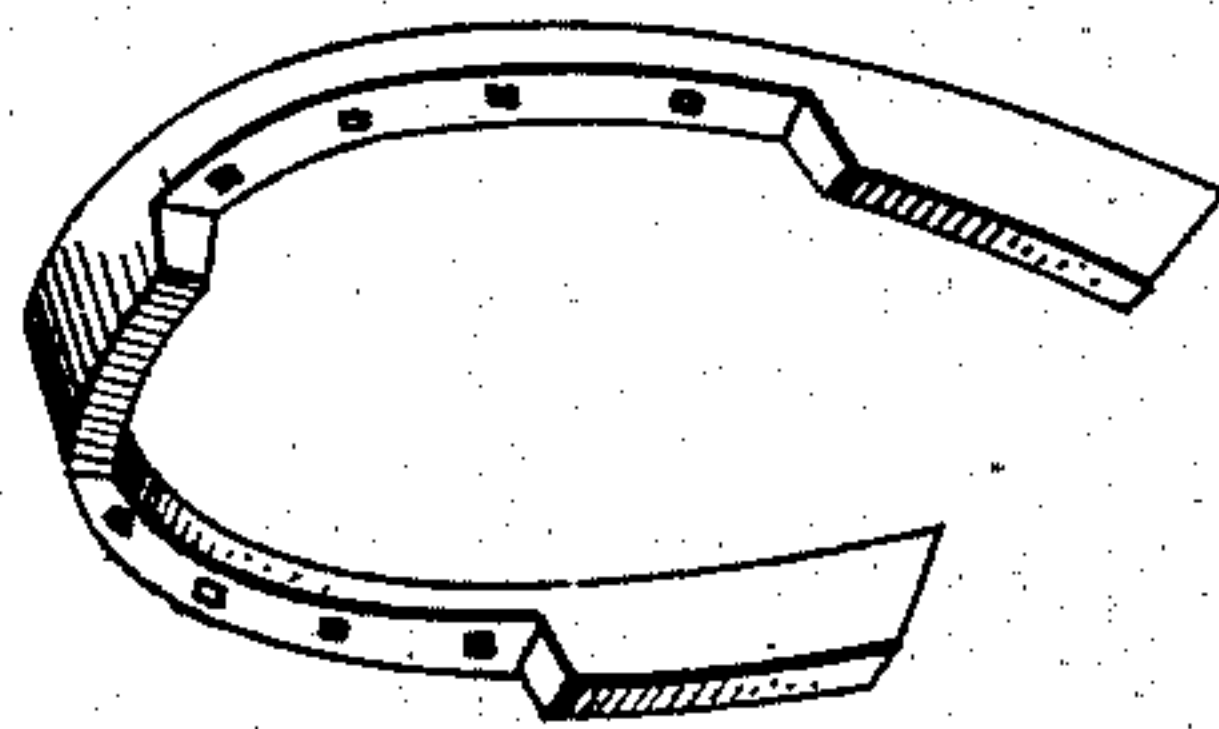


Fig. 6



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APPARATUS FOR CASTING HORSESHOES.

SPECIFICATION forming part of Letters Patent No. 315,314, dated April 7, 1885.

Application filed February 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS McGRANE, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Casting Horseshoes, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof, similar letters referring to similar parts throughout.

Figure 1 is a longitudinal sectional view of the apparatus. Fig. 2 is a vertical cross-section of the same, taken on the line *x x*. Figs. 3, 4, and 5 are views in detail of the molds. Fig. 6 is a perspective view of a finished horseshoe.

My invention relates to improved apparatus for the casting of horseshoes; and it consists substantially in the construction and combination of parts, as will hereinafter be distinctly pointed out.

In the casting process I use a suitable bearing-frame, A, upon which are placed the molds, one or more, consisting of a mold proper, D, in which is worked in intaglio the form of a horseshoe-blank, the back plate, C, which also carries a part of the gate through which the molten metal is poured into the mold, and the bridge B, which supports and guides the mold D by means of pins *b*, which pass through holes provided in the mold D. The bridge B and the back plate, C, are respectively held in place by means of notches *a a'*, provided in the bearing-frame A. The gate or lip of the back plate, C, as shown in the drawings, projects over the sprue-hole of the adjoining or next mold D, forming one continuous gate for all the molds on the bearing-frame A. The pouring can consequently be continued from one mold to the other without interrupting the stream from the crucible or other pouring-vessel. The mold D is held up against the back plate, C, during the operation of casting and removed therefrom as the metal sets by operating the forked lever *l*, rock-shaft *k*, and hand-lever *i*, working in journals in the bearing-frame A, as shown.

In Fig. 1 is shown a series of molds in position, the left-hand one being shown in section, the middle one as closed ready to receive the metal, the upper part being shown in section to show the arrangement of the gate or sprue, and the right-hand one in section as open, showing the shoe as cast, also

in section. In this it will be seen that the pins *b* perform two functions: first, they serve as supporting-guides for the molds D, as stated, and, second, as holding the shoe-blank when cast back against the back plate, C, and to prevent it from sticking in the mold D when the latter is opened by the action of the lever *i* and its connections. Chemicals—such as plumbago, for instance—are applied to the interior of the molds to prevent adhesion of the shoe and make it easy of removal. By means of the pins *b*, I am also enabled while the molds are open to hold the blank in contact with back plate, C, until they are cool, thereby preventing the air from striking the hot metal on its flat surface. Time is allowed thereby for the thin sections—the edges—to cool gradually, and chill-cracks in such edges are consequently avoided. This is an exceedingly important function of the pins *b*, as it obviates a very frequent source of loss otherwise met with when the whole casting is exposed to the air in a red-hot condition.

The letters *g g*, *h*, and *i*² indicate, respectively, that part of the mold by which the heel-calk, the toe-calk, and the nail-holes are formed with the shoe, the said nail-holes being formed either by pins projecting from the back plates, which enter corresponding openings in the molds, or by a subsequent operation.

Having thus described my invention, what I claim is—

1. In apparatus for casting horseshoes and horseshoe-blanks, the combination, with the bearing-frame A, of the lever *l*, rock-shaft *k*, hand-lever *i*, mold D, the back plate, C, and bridge B, having pins *b*, and secured immovably to the frame, as and for the purpose set forth.

2. In apparatus for casting horseshoes and horseshoe-blanks, the combination, with the mold D, provided with perforations, of the bridge B, provided with pins *b*, adapted to enter said perforations, and the back plate, C, whereby the mold is guided and supported and the blank or shoe prevented from sticking in the mold when the latter is operated, as and for the purpose set forth.

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