

(No Model.)

W. McFARLAND.
MOLD FOR CASTING METALS.

No. 251,268.

Patented Dec. 20, 1881.

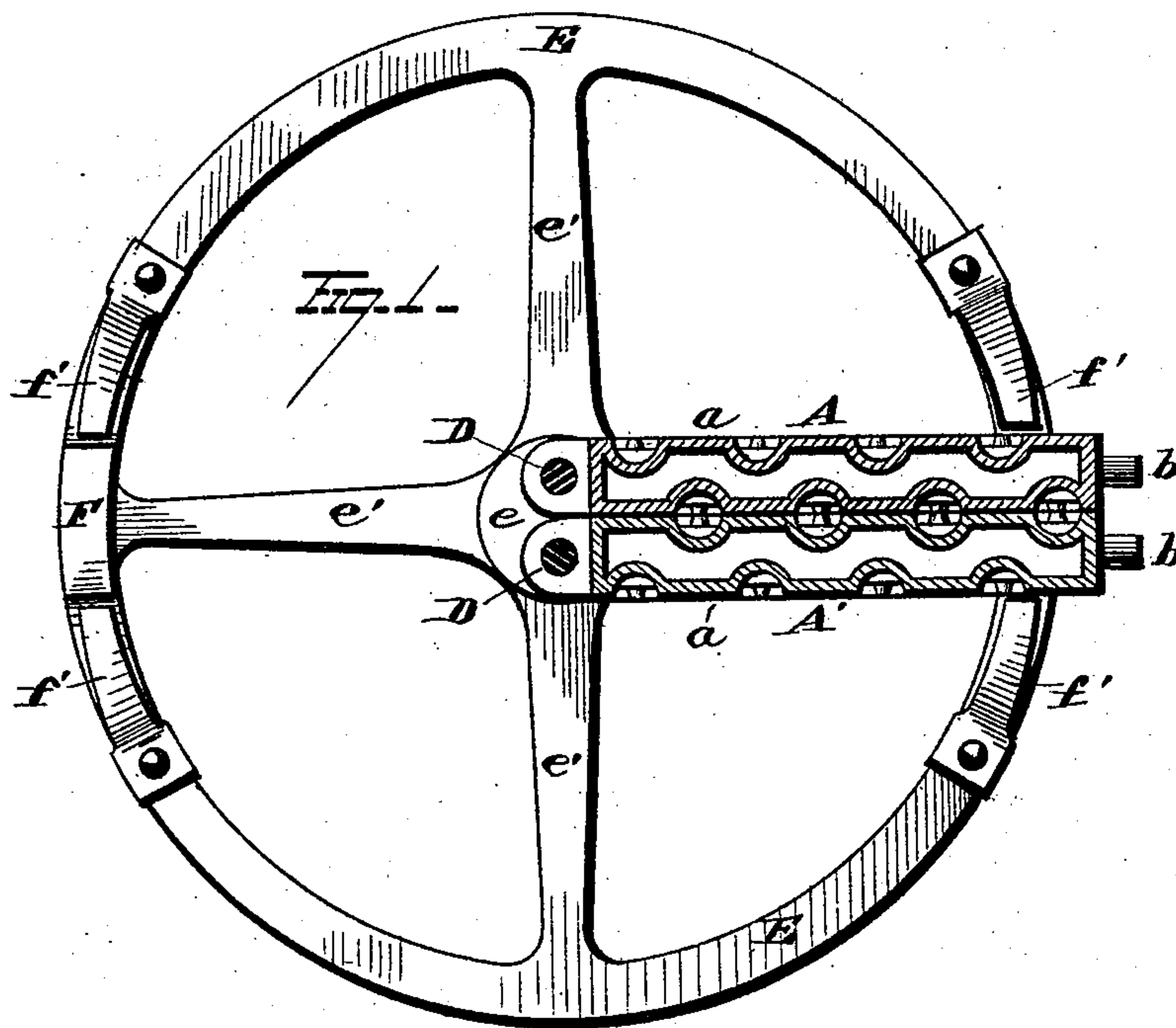


Fig. 2.

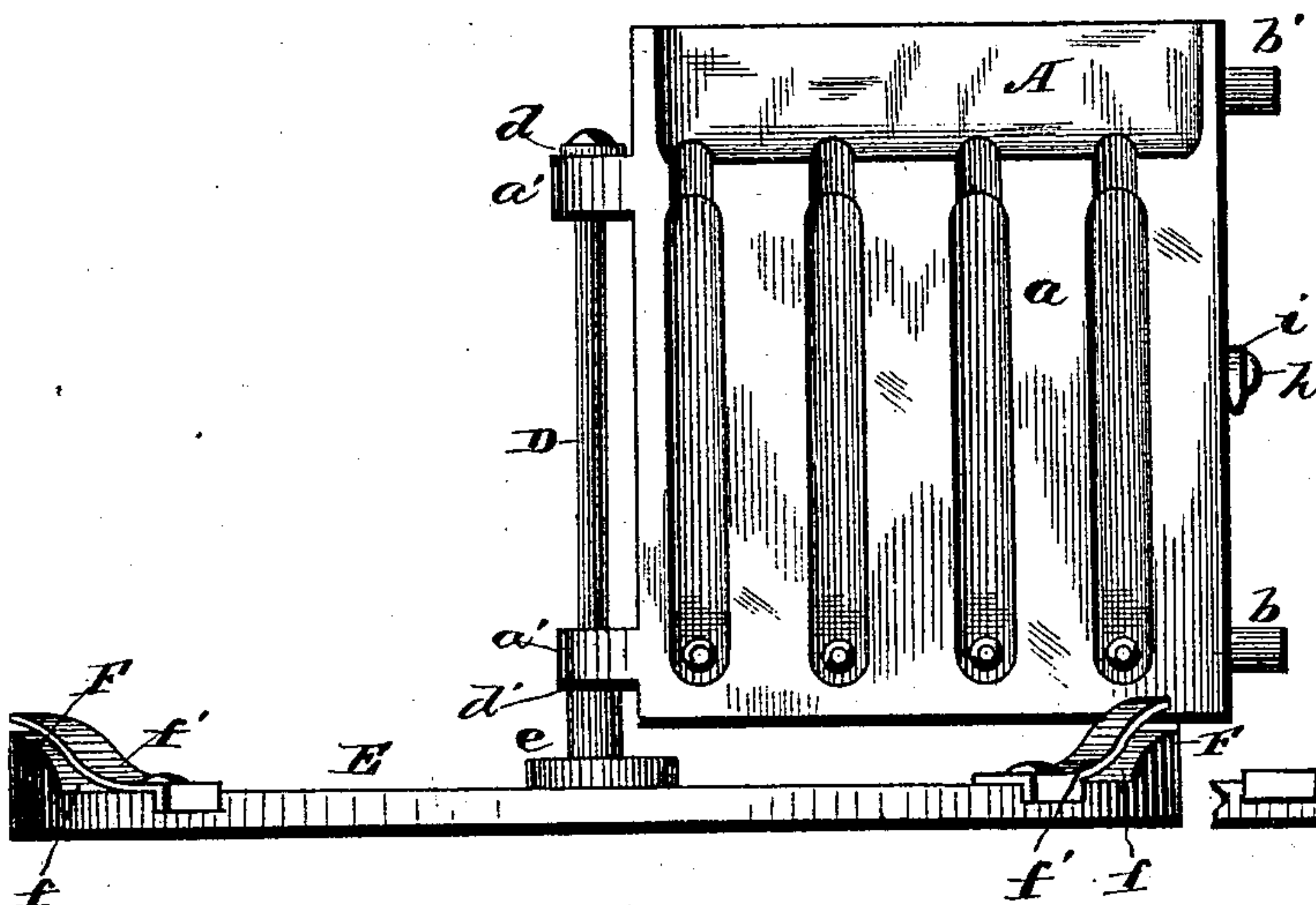
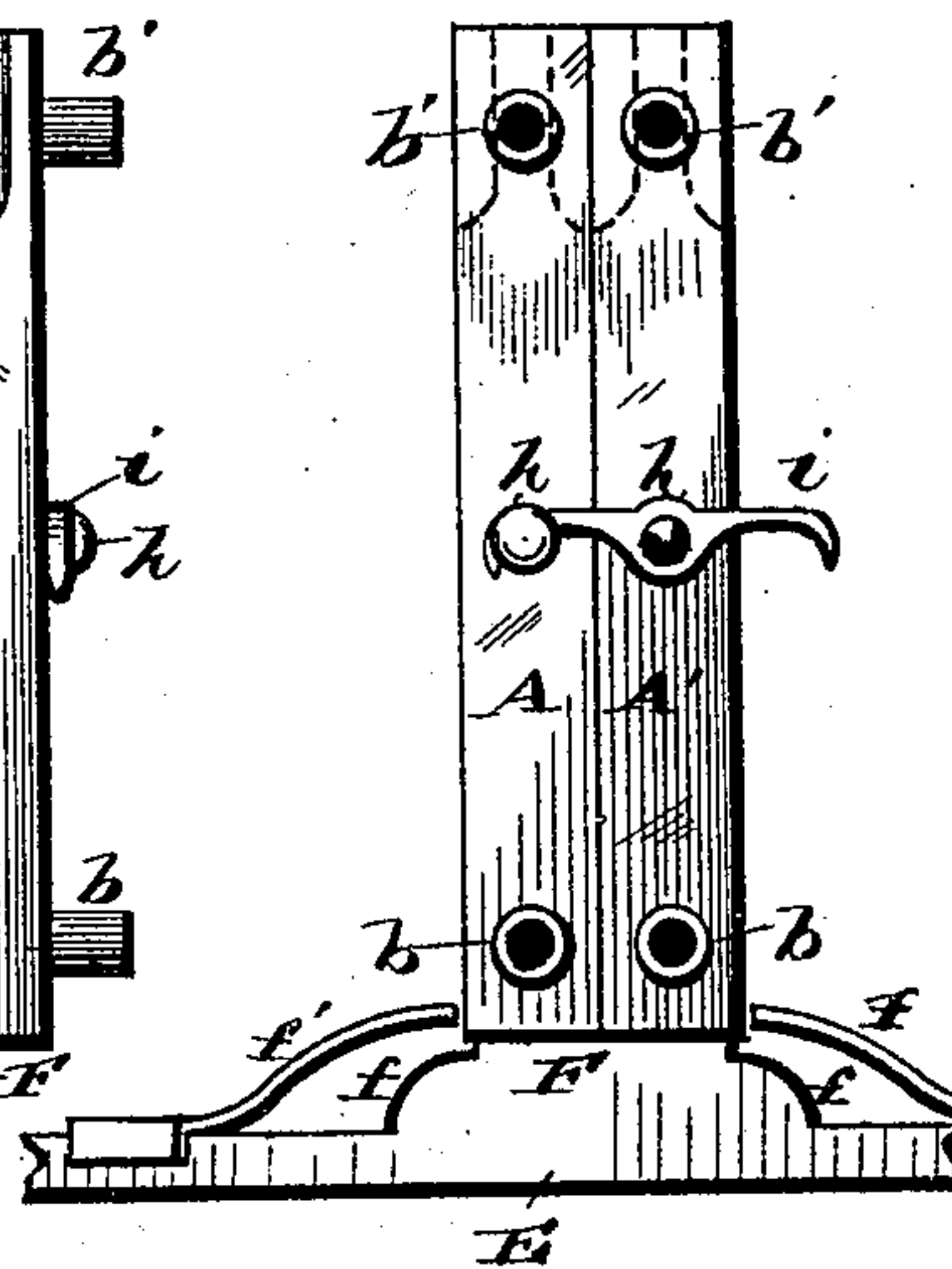


Fig. 3.



WITNESSES

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MOLD FOR CASTING METALS.

SPECIFICATION forming part of Letters Patent No. 251,268, dated December 20, 1881.

Application filed October 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McFARLAND, of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Molds for Casting Metals; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to molds for casting metals; and it consists, first, in combining with a hollow mold water inlet and outlet pipes to prevent unequal expansion and undue heating of the mold; secondly, in a pair of double faced molds, the sides of which may be used alternately to prevent the undue expansion and consequent warping of the molds, my object being to heat the opposite sides of the molds uniformly by using them alternately; thirdly, in the combination of a pair of double-faced molds with a supporting-frame, upon which the molds are pivotally supported, and devices for locking the molds in their proper relative positions.

In the accompanying drawings, Figure 1 is a horizontal section taken through the hollow molds. Fig. 2 is a side elevation of the molds, and Fig. 3 is an end elevation.

A A' represent a pair of molds having the double sides *a*. These molds are provided at one side with perforated lugs or projections *a'*, by means of which they are connected to uprights D D, so that they may readily turn thereon, the uprights being secured to the center or hub *e* of a circular frame, E. The latter is provided at diametrically-opposite sides with raised portions F, the ends *f* of which are curved or cut away, and near each of said ends is a spring-catch, *f'*, one end of which is secured to the frame E, while the spring portion projects over the end *f* of the raised portion F. The frame E is preferably of circular form, and cast with the spokes *e' e' e' e'* and the center piece or hub, *e*. The uprights D D are secured at their lower ends to the hub *e*, and are connected at their tops by a link, *d*, which holds them parallel to each other, and also serves to retain the molds in position thereon. These uprights are provided at their lower ends with shoulders *d' d'*, upon which the lower perfo-

rated lugs, *a' a'*, of the molds rest, to support the latter clear of the frame E and to allow them to swing over the raised portions F F of said frame. At the front of each of the molds A A', at about midway of their height, is a stud or pin, *h*, one of which is provided with a double hook or clasp, *i*, pivoted at its center to the stud and adapted to engage with the stud of the other mold to lock the molds together when in position for casting. The molds A A' are so matrixed that one side of the mold A and the adjacent side of the mold A', when joined together, will form a complete mold, and, both being double-faced, the other two sides of the respective molds, when joined together, will also constitute a complete mold.

The operation of the device is as follows: The molds A A', being swung over the raised portion F on one side of the frame E, are held together by the spring-catches *f'*, which impinge against the lower edges of the molds, and the latter are then locked together by the clasp *i* and stud *h*. They are then ready to receive the molten metal. After the casting has been completed the molds are unlocked, the casting removed, and the molds swung to the opposite side of the frame E, thus bringing their other sides together, when the molds are locked as before and the casting process repeated. It will be seen that the sides of the molds are alternately used, and consequently equally heated, and thus the undue expansion of one side of the mold and consequent warping of the latter are prevented. The circulation of water within the molds is an additional means for obtaining an equalization of heat and a further security against warping. The water passes in at the point *b'*, and fills the hollow space between the sides of the mold, and passes out at the outlet *b'*. It is highly heated by the molten metal, and imparts a portion of its heat to the outer side of the mold, to counteract the expansive influence of the heat of the metal upon the inner side thereof. Moreover, the water prevents the inner side of the mold from becoming too hot by absorbing a portion of the heat of the metal.

By employing molds of the construction hereinbefore described I am enabled to carry on the casting process more rapidly than has heretofore been done, since there will be no delay

on account of overheated molds, and, moreover, the warping, which soon renders the molds useless, is avoided and durability and ease of manipulation secured.

5 I do not limit myself to the exact construction shown and described, as many changes in construction may be made without departing from the spirit of my invention.

10 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

15 1. The combination, with two double-faced molds, adapted to be reversed as described, of devices for locking said molds together, substantially as described.

20 2. The combination, with a frame, of two double-faced molds, pivotally supported on said frame and adapted to have their faces alternately used, and devices for locking said molds together, substantially as set forth.

3. The combination, with a frame having two uprights, of two double-faced molds, the faces of which are adapted to be alternately used,

and means, substantially as described, for locking said molds together, substantially as set forth. 25

4. The combination, with a supporting-frame, of two hollow double-faced molds, pivotally supported on said frame and adapted to have their opposite and adjacent faces used alternately, and inlet and outlet pipes connected to said molds, substantially as set forth. 30

5. The combination, with a frame having the central hub and raised portions, substantially as described, of two double-faced molds supported pivotally upon said hub, the spring-catches, and double clasp and studs, substantially as set forth. 35

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 40

WILLIAM MCFARLAND.

Witnesses:

GEORGE W. MILLER,

ROBERT S. VANDEWATER.