(No Model.) 2 Sheets—Sheet 1.

J. B. PRICE.

MOLD FOR CASTING METALLIC FORMS.

No. 386,219. Patented July 17, 1888.

Fig. 1.

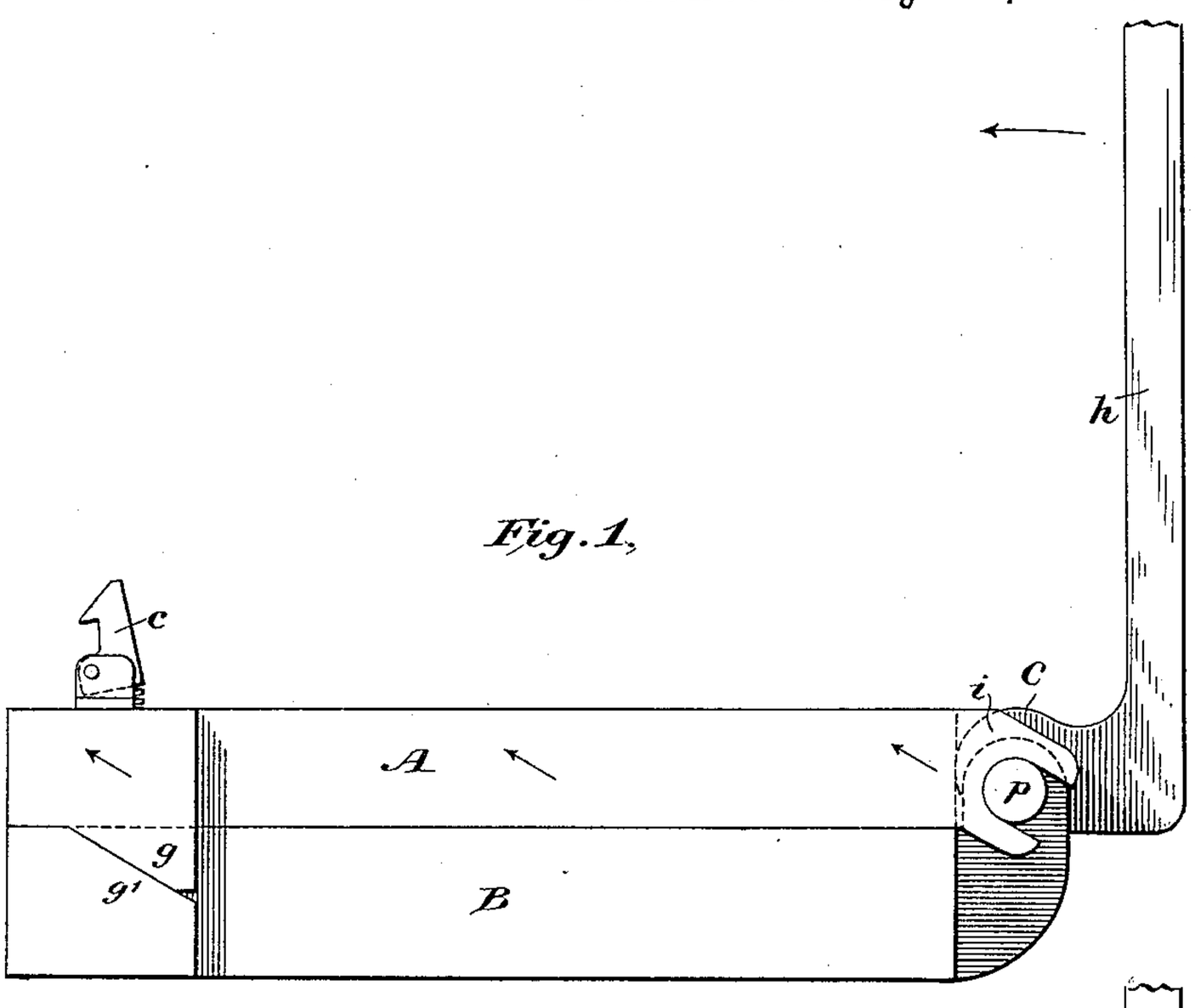


Fig. 2.

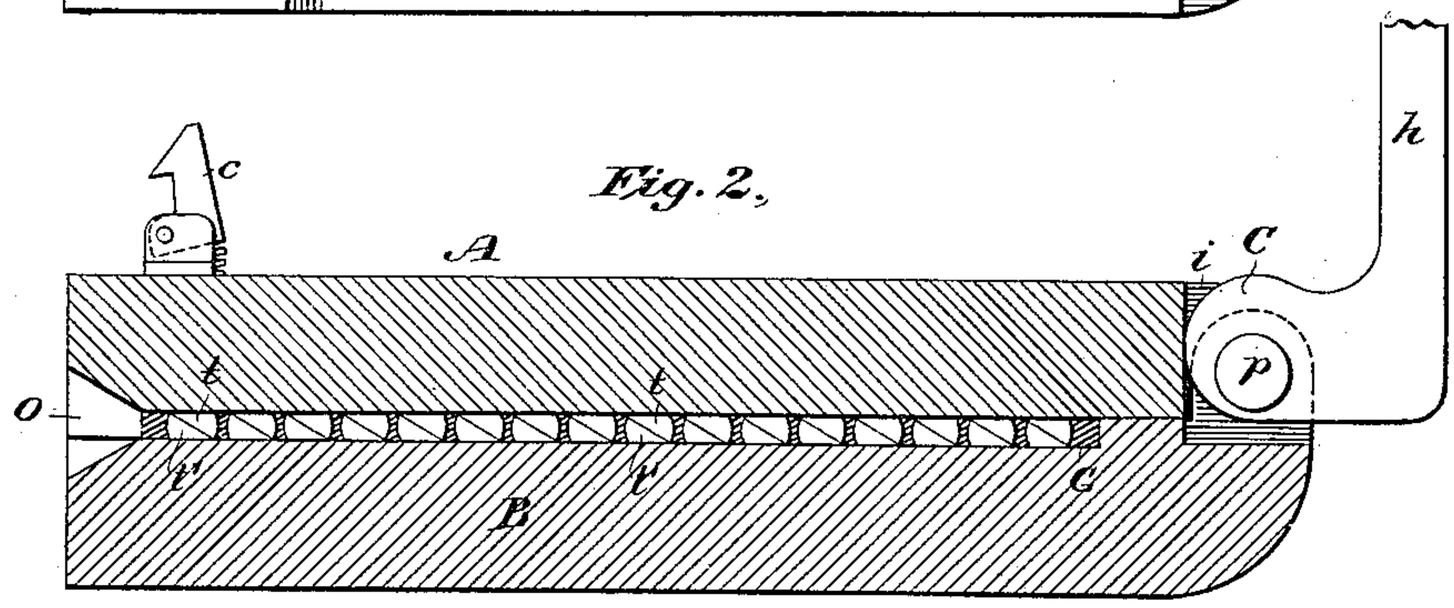
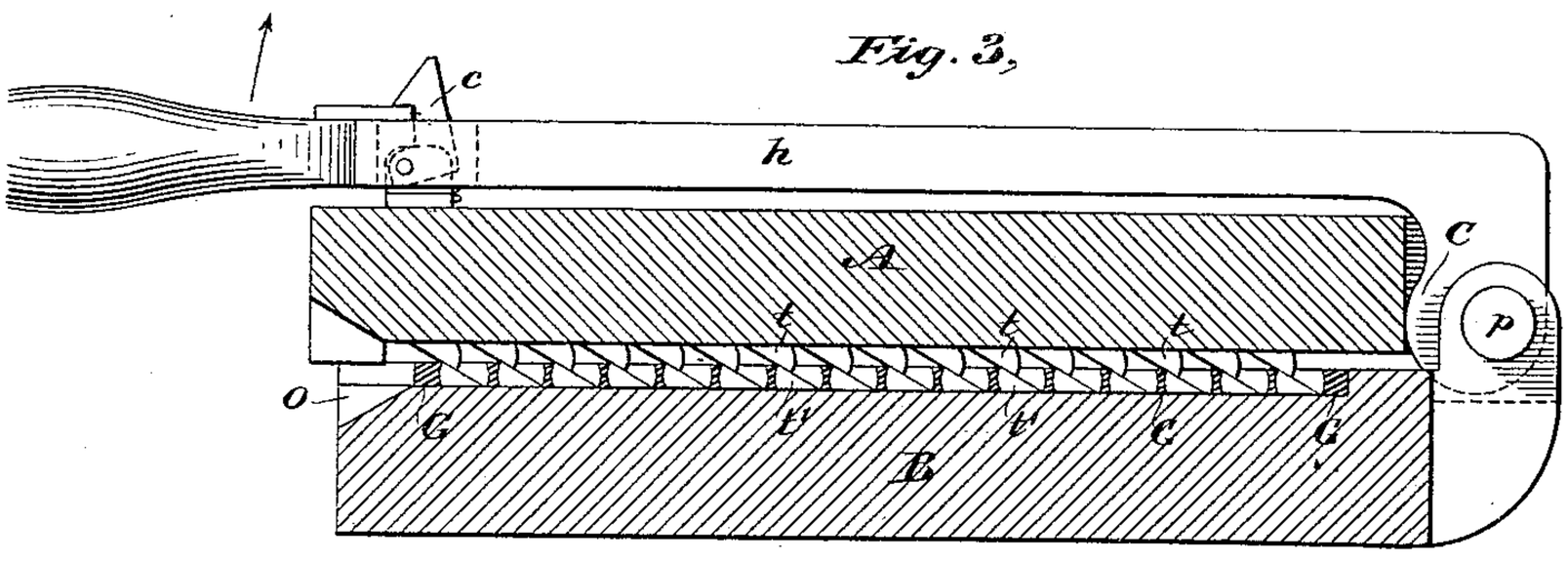


Fig. 3.



Witnesses.
Geo. W. Breck.
Eugene J. Reilly.

Inventor.
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By his Attorney Wm B. Vanzo.

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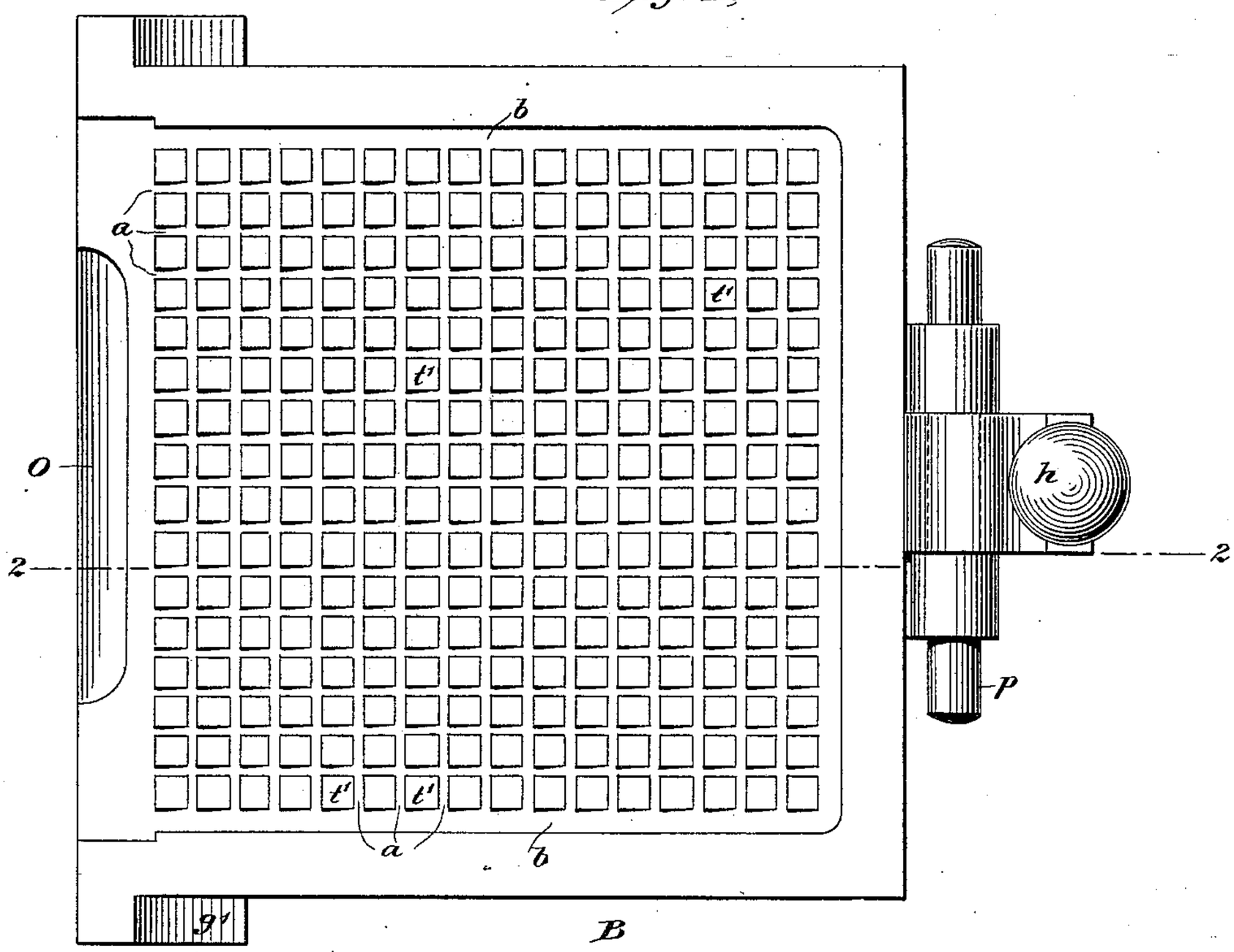
Fig. 4.



Witnesses,
Geo. W. Breck.
Eugene J. Reilly.

Inventor,
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By his Attorney Wm B. Vanso.

UNITED STATES PATENT OFFICE.

JOHN B. PRICE, OF WOLLASTON HEIGHTS, MASSACHUSETTS, ASSIGNOR TO THE ELECTRICAL ACCUMULATOR COMPANY, OF NEW YORK.

MOLD FOR CASTING METALLIC FORMS.

SPECIFICATION forming part of Letters Patent No. 386,219, dated July 17, 1888.

Application filed May 2, 1888. Serial No. 272,567. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. PRICE, a resident of Wollaston Heights, in the county of Norfolk, State of Massachusetts, have invented certain new and useful Improvements in Molds for Casting Metallic Forms, of which the following is a specification.

My invention is an improvement in molds for casting metallic forms containing one or more holes, perforations, or receptacles, the interior diameter of which is greater at or near a central plane than at points at or near either surface.

This mold is specially applicable for casting plates or supports for accumulators or secondary batteries of the Faure-Swan-Sellon type. These are composed of plates of lead, each having numerous closely-arranged holes or perforations, the walls of which are concave—that is, the diameter of the perforations at or near the center is greater than the diameter at or near the surfaces—so that active material placed within these holes or perforations is "key-locked" in position. To manufacture plates of this description, I provide a mold in two divisions, each division carrying complementary parts and having a relative movement in a direction parallel with a line joining diagonally-opposite edges of the hole or perforation. If the plate is to be cast with square holes or perforations, two opposite interior walls may be concave. The mold consists of a series of square projections with divisions between them and a channel forming an exterior boundary. Each square projection has two of its opposite sides convex. The two complementary divisions are in the form of right-angled triangles, one of the sides adjacent to the hypotenuse being of convex outline. These triangles are situated, respectively, upon two opposite divisions of the mold. When the two divisions are in contact, the mold complete, and in position to receive the molten metal, the two hypotenuses of the triangular divisions of each square are in contact. When the metal is cast and has cooled or set, one series of divisions is caused to move or slide upon the other. The convex portion of one series of triangular divisions is removed from the concavities of the casting made by it, and may be separated from the other series of divisions and from the casting by a movement at right angles thereto. The casting may then be easily removed. The motion of one division of the mold in contact with the other division is produced by a cam movement, best described by reference to the accompanying drawings.

Figure 1 is a side view of the mold in position to receive the molten metal. Figs. 2 and 3 are respectively central cross-sections of the mold in two different positions on the line 2 2, Fig. 4; and Fig. 4 is a plan view of the lower division of the mold, showing the series of triangular core-divisions.

A and B are the two divisions of the mold.

t t' are two triangular sections, together constituting a single core substantially square in plan view. There are a series of these. They are separated by channels *a* and surrounded by a channel, *b*. These divisions *t t'* are in the form of a triangle in vertical cross-section, one side adjacent to the hypotenuse being convex to produce a product concave upon two opposite internal sides or walls.

G is the casting in position in the mold. The hypotenuses of the triangles form the meeting or contact surfaces of the two divisions. With two sides of each square core convex, two sides of the perforations in the casting will be concave, and the two divisions of the mold could not be separated without destroying the form of the casting. For this reason the convex walls of the mold or core are caused to slide out of the casting at an acute angle with the plane thereof.

g g' are supplementary contact-surfaces fixed to the two divisions of the mold, respectively. The angle with the plane of the casting formed by these supplemental contact-surfaces is similar to that of the series of triangles or core-divisions.

The means for causing the movement of one division in contact with the other consists of a cam-wheel, C, moving upon the pin *p*, fixed to division B as a center and making contact with the edge of the division A. Division A has a slotted projection, *i*, performing the functions of a hinge. The walls of the slot are at the same angle as the contact-surfaces of the

triangles $t\ t'$ and the supplemental contact-surfaces $g\ g'$. There is a lever, h, fixed to the cam-wheel C.

When the lever h is in the position shown in Fig. 1, the parts are in the position shown in cross-section, Fig. 2, ready to receive the molten metal. The shaded lines G indicate the casting in position in the mold.

To remove the casting, the lever h is moved in the direction of the arrow and the division A slides upon the division B under the operation of the cam-wheel C, moving in the direction of the small arrow, Fig. 1, until the lever h and the division B assume the position shown in Fig. 3. The lever h having then arrived at the position shown, the spring-latch c, passing through a slot in said lever, catches and locks the lever to the mold-division A. The lever is now lifted, as shown by the arrow, Fig. 3, carrying with it division A, leaving the casting G in the position shown, free to be withdrawn. By this arrangement one man can operate the mold with greater rapidity than was formerly the case where two men have been employed.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, in a mold for casting perforated metallic plates or forms, of a series of cores, each in two divisions, located, respectively, upon two divisions of the mold, forming complementary parts of each other, and guide or contact surfaces upon the meeting sides of said divisions of the mold, arranged at an acute angle with the plane of the mold, whereby the two divisions when moved in contact with each other separate in a line forming an acute angle with the plane of the finished product.

2. The combination, in a mold for the described purpose, of a series of square cores separated by channels of uniform dimensions, each core composed of two divisions in the form of equal and similar right-angled triangular divisions having a side adjacent to the right angle of convex outline, said divisions being located, respectively, upon two divisions of the mold, forming complementary parts of each other, and means for moving said triangles with respect to each other in a line parallel to the hypotenuses of the said triangles.

3. The combination, in apparatus for the described purpose, of a series of cores separated by channels of uniform dimensions, said cores being in two divisions, located, respectively, upon two divisions of the mold, forming complementary parts of each other, complementary guide or contact surfaces, located, respectively, upon opposite divisions, and a cam-wheel pivoted to one division and making contact with the other, whereby the series of cores are caused to divide and separate in a direction parallel with a line joining diagonally-opposite edges of the perforation.

4. The combination, in an apparatus for the described purpose, of a series of cores separated by channels or passages, said cores being in two divisions fixed at their bases to two divisions of the mold, respectively, forming complementary parts of each other, a cam-wheel pivoted to one division of the mold and making contact with the other, and registering guide or contact surfaces upon opposite divisions of the mold, whereby a sliding contact of the divisions of the mold is effected and one series of core-divisions is at once raised and moved, substantially as described.

JOHN B. PRICE.

Witnesses:
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