W. MILLS.

APPARATUS FOR FORMING POURING GATES FOR MOLDS.

APPLICATION FILED DEC. 10, 1912.

1,112,465. Patented Oct. 6, 1914.

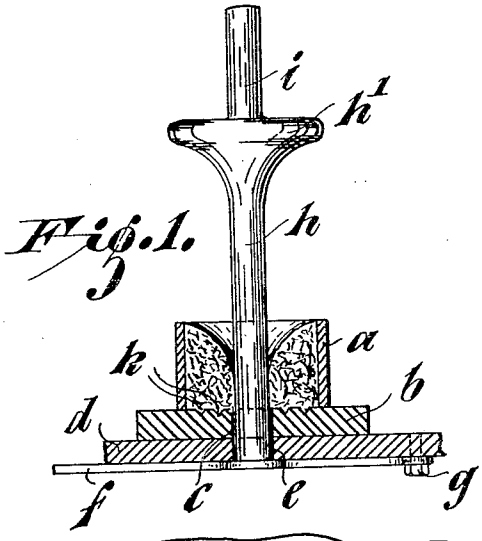


Fig. 1.

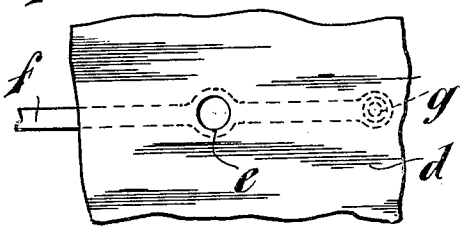


Fig. 3.

Fig. 2.

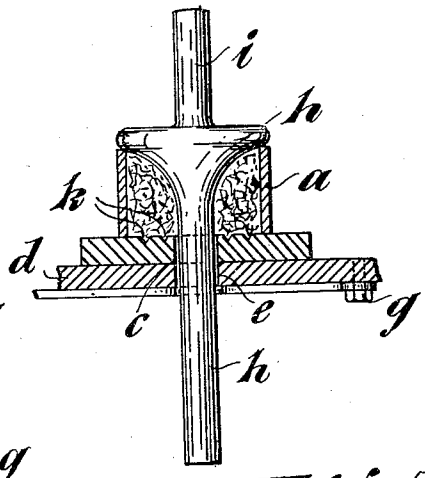
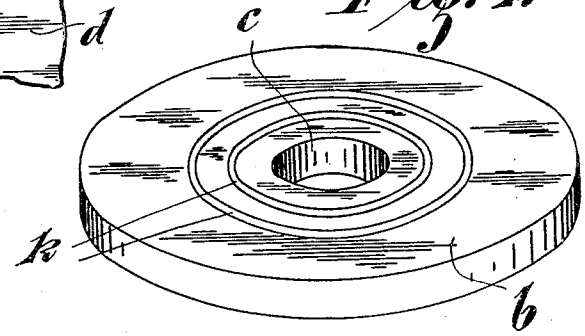


Fig. 4.



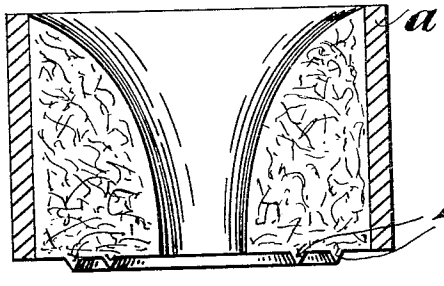


Fig. 5.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM MILLS, OF BIRMINGHAM, ENGLAND.

APPARATUS FOR FORMING POURING-GATES FOR MOLDS.

1,112,465. Specification of Letters Patent. Patented Oct. 6, 1914.

Application filed December 10, 1912. Serial No. 735,976.

To all whom it may concern:

Be it known that I, WILLIAM MILLS, a subject of the Kingdom of Great Britain, residing at Atlas Works, Grove street, Birmingham, in the county of Warwick, England, manufacturer, have invented certain new and useful Apparatus for Forming Pouring-Gates for Molds, of which the following is a specification.

The present invention relates to apparatus for forming the pouring gates for molds, more particularly to the pouring gates employed in the molding or casting of the lighter metals, where said gates have to be placed above the opening or cavity in the mold in order to allow the molten metal to obtain a certain degree of gravitation so that it may flow freely to every part of the mold. The invention may however be also employed when forming gates to be used in casting or molding the heavier metals. The pouring gates employed for the above named purpose consist, as is well known, of a circular or the like box containing sand, which sand is so pressed and formed in said box as to leave a funnel or the like shaped aperture or cavity in same. The box is then placed in position on the mold with the smaller end of the funnel or like shaped aperture directly over an opening or cavity in the mold.

According to this invention the funnel or like shaped cavity is formed by pressing down into the sand a suitably shaped rammer or former, the operation of said rammer forming a cavity having a hard smooth surface. Means are also provided for preventing molten metal from spreading between the underside of the pouring gate and the upper surface of the mold, said means comprising suitable ribs or projections formed upon the underside of the pouring gate, the same operation of the rammer forming both the cavity and the ribs.

In order that this invention may be clearly understood and more readily carried into practice, reference may be had to the appended explanatory sheet of drawings, upon which:—

Figure 1 is a sectional side elevation of the present invention showing the rammer raised from the pouring gate. Fig. 2 is a similar view to Fig. 1 but showing the rammer pressed into the pouring gate. Fig. 3 is a plan of a portion of the table with the retaining lever in the position shown in Fig. 1. Fig. 4 shows an enlarged perspective view of the disk upon which the pouring gate rests. Fig. 5 is an enlarged sectional elevation of the finished pouring gate.

In the convenient embodiment of the invention, a cylindrical or other suitably shaped box *a* for containing the sand which is to be formed into a pouring gate is placed on a suitable plate or disk *b* having a circular aperture *c* in the center of same of any required size; the disk *b* carrying the box *a* is placed onto a table or the like *d* also having an aperture *e* formed in same which is placed in alinement with the aperture *c* in the disk *b*. On the underside of the table or the like *d* is a lever *f* pivoted at *g* in such a manner that it may be slidably rotated by hand or by any other means on the under surface of the table *d*. Passing through the apertures in the disk *b* and table *d* is the lower portion or spindle of a suitable rammer or former *h* having an enlarged head h^1 of substantially funnel or conical formation, and a suitable handle *i* or the like formed on same.

In carrying this invention into practice, the rammer or former *h* is raised or drawn up until the lower extremity of same is on a level with the under surface of the table *d* when the lever *f* is brought under same to hold the rammer in the raised position. Sand or the like is then inserted in the box *a* around the spindle of the rammer *h*, the lever *f* is removed from under the same and the rammer is then pressed down until the upper part of the enlarged head h^1 comes into contact with the upper edge of the box *a*. The plate or disk *b* is provided on its upper face with concentric grooves *k* into which the sand is pressed by the rammer. When the rammer or former *h* is raised, the box *a* is withdrawn from the apparatus in the form of a finished pouring gate having a conical or funnel shaped aperture in same, and ready to be placed in position on the mold. The ribs or projections k^1 formed on the underside of the pouring gate rest upon the sand on the upper surface of the mold and form seals for preventing the metal from spreading between the pouring gate and the upper face of the mold. By this method pouring gates are very rapidly formed and the conical or funnel shaped apertures in same have very firm and even surfaces, so that the danger of the molten metal carrying

loose sand into the mold is entirely obviated, and much time is saved in making the gates.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In an apparatus for forming pouring gates for molds in combination, a plate having a central aperture, a rammer adapted to pass through said aperture, and a movable member mounted beneath said plate for retaining the rammer in a raised position when so desired.

2. In an apparatus for forming pouring gates for molds in combination, a plate having a central aperture, a box resting on said plate and surrounding said aperture for receiving the sand to form the molds, a rammer adapted to pass through said aperture, and a movable member mounted beneath said plate for retaining the rammer in a raised position when so desired.

3. In an apparatus for forming pouring gates in combination, a plate having a central aperture and having grooves therein concentric with said aperture, a box resting upon said plate for receiving sand to form the gates, a rammer adapted to pass through said aperture, and a movable member mounted beneath said plate for retaining said rammer in raised position when so desired.

4. In an apparatus for forming pouring gates for molds, a rammer in the form of a spindle having an enlarged head of suitable shape, a grooved disk having a guiding aperture therein, the lower portion of said rammer adapted to pass through the guiding aperture in said disk.

5. In an apparatus for forming pouring gates for molds in combination, a rammer, a plate or disk having an aperture therein, and pivotally mounted lever for retaining the rammer in a raised position.

6. In an apparatus for forming pouring gates or molds in combination, a rammer, a plate or disk having a central aperture and also having one or more grooves surrounding said aperture, and a pivotally mounted lever for retaining the rammer in a raised position when so desired.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

W. MILLS.

Witnesses:
ARTHUR H. BROWN,
ARCHIBALD F. LAMB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."