

A. ERLANDSON.
POURING GATE FOR CASTINGS.
APPLICATION FILED OCT. 17, 1911.

1,030,066.

Patented June 18, 1912.

Fig. 1.

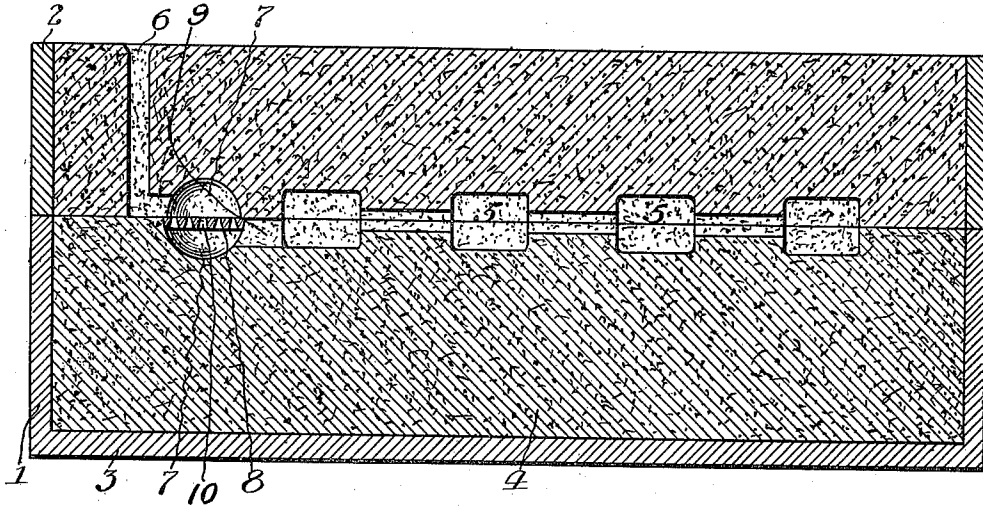


Fig. 2.

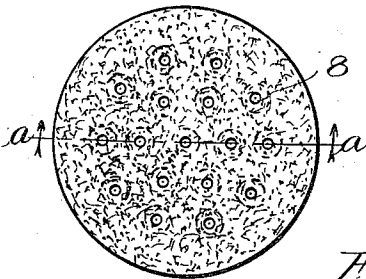


Fig. 3.

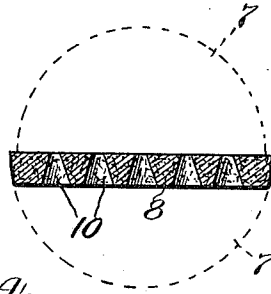
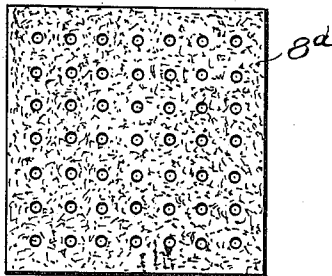


Fig. 4.



Witnesses
Orr. Munnich
A. Lyda Jones.

Inventor
August Erlandson
by A. Miller Beechfield
att'y.

UNITED STATES PATENT OFFICE.

AUGUST ERLANDSON, OF CHICAGO, ILLINOIS.

POURING-GATE FOR CASTINGS.

1,030,066.

Specification of Letters Patent.

Patented June 18, 1912.

Continuation of application Serial No. 589,957, filed October 31, 1910. This application filed October 17, 1911. Serial No. 655,200.

To all whom it may concern:

Be it known that I, AUGUST ERLANDSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Pouring-Gates for Castings, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvement in pouring gates for castings and has for its object the provision of an improved pouring gate which may serve to separate slag or other undesirable material from the metal which is being poured in the mold so as to secure more perfect castings.

My invention in its preferred form consists of means provided in a preferably enlarged portion of the pouring gate which is formed in the sand. The means employed serve to maintain the slag or other undesirable constituents of the molten metal in a preferably enlarged portion or pocket provided for this purpose in the sand.

This application is a continuation of my former application for an improvement in pouring gates for castings, Serial No. 589,957, filed October 31, 1910.

In one form in which I find my invention to work out satisfactorily, I provide what I may call a sieve-like construction preferably made of sand and baked to form what I may call a perforated plate which I insert within the pouring gate preferably in the manner to be described hereinafter.

Further objects and advantages of my invention will be apparent from the construction which I will now describe in connection with the accompanying drawing illustrating one embodiment thereof in which:

Figure 1 is a sectional view of a mold showing the adaptation of my invention thereto; Fig. 2 is a detail view of my improved device; Fig. 3 is a cross sectional view on lines *a-a* of Fig. 2, but showing by dotted lines the relative position of the perforated plate and the surrounding sand; and Fig. 4, is a modification of the device set forth in Fig. 3.

Referring more particularly to Fig. 1, I show a flask or mold 1 having the cope or upper section 2 and the drag or lower section 3. Sand 4 is provided in the two halves as is well understood. An unfilled space

5 is provided to accommodate metal which is to be poured into the mold, and which unfilled space conforms in outline to the outline of what is desired in the finished casting. A pouring gate 6 is provided within the sand into which the molten metal is poured after the mold is completed and set up as shown in Fig. 1, and which metal then fills up the space 5 as is well understood.

I provide preferably two hemispherical openings, 7-7 in the upper and lower sections, which openings unite to form a pocket. In the lower section 3 I insert my improved device of separator 8 in such a manner as to form rather a fair sized pocket above said separator or strainer.

One of the practical advantages resulting from the use of a substantially spherical pocket is that the ingate core may be placed in any position around the horizontal circumference of the pocket pattern without necessitating any changes in the pattern or position of the pocket. Hence the ingate can always be put in the most advantageous position with respect to the pocket and the remainder of the mold, while using only one pocket pattern and gate core.

I find it highly important in the practical use of my arrangement to make the edge of the strainer 8 on the same bevel as the walls of the lower opening 7. By this construction I can first form the opening and then merely place the strainer in position without further labor. In case the diameter of the strainer were such that the edges of the strainer would overlap the sides of the opening, it would be necessary to make a pocket in the sand to receive the edges of the strainer. It would be necessary that such a pocket be fitted exactly to the outline of the strainer. But a neat fit in such work would cost about as much to make as the rest of the mold and thus would render the use of a strainer impracticable. In order to prevent the strainer from floating up out of position the upper opening 7 is made smaller than the lower one as shown. It will be seen also that the strainer will be firmly supported by the sand since the sand below the beveled edge is closely packed and the sand at the surface of the lower half of the mold cannot give horizontally or vertically, owing to the pressure of the sand in the upper half of the mold.

It will be apparent from Fig. 1 that a

passageway 9 leads from below the separator 8 to the unoccupied space 5. When the molten metal is poured into the gate 6, it must pass through the separator 8 and
 5 from there on into the unfilled casting. The separator 8 has holes 10, 10 therethrough which taper from the bottom toward the top as shown more clearly in Figs. 1 and 2. The molten metal must thus pass through
 10 the holes 10 and the slag or undesirable portion of the metal is retained within the upper portion of the pocket 7, whereas the desirable metal of uniform constituency passes through the separator or strainer into
 15 the unfilled space 5.

I find that in practice the separation of the undesirable metal is complete to a very the undesirable metal is complete to a very castings which are of finer grade than heretofore in molds of this character.
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In Fig. 4 I show a modification of the device as set forth in Figs. 2 and 3, said device 8^a having a rectangular outline instead of circular and thus indicating that the device may take any suitable form to accommodate any desired pouring gate.
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While I have herein shown and particularly described the preferred embodiment of my invention, I do not mean to limit myself to the precise construction and arrangement as herein set forth, but
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Having thus described the preferred embodiment of my invention, what I claim as new and desire to secure by Letters Patent is:
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1. In a device of the class described in combination, a mold having a pocket therein, said pocket being comprised of two substantially hemispherical openings, a pouring
 40 gate communicating with one of said hemispherical openings, an outlet leading from the other one of said openings, and a strainer placed with one of its faces on the line of division between said hemispherical openings.
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2. In a device of the class described in

combination, a mold having a pocket therein of substantially spherical form, a gate communicating with said pocket, an outlet opening also communicating with said pocket 50 and a strainer placed in said pocket and forming a partition between said gate and said outlet.

3. In a device of the class described in combination, a mold having a pocket therein 55 provided with sloping walls, and a strainer placed in said pocket, said strainer having its edges beveled to correspond with the slope of said walls, said strainer being supported in the mold solely by the engagement 60 between its beveled surfaces and the sloping walls of the pocket.

4. In a device of the class described in combination, a mold having a pocket therein, said pocket being substantially spherical 65 in form, a pouring gate communicating with said pocket, an outlet from said pocket, the outlet being on a lower level than the connection between the gate and the pocket, and a strainer placed in said pocket at the 70 level of the lower edge of said gate.

5. The combination of a mold having a pocket, a gate and an outlet therein, said pocket being formed by two hemispherical portions, the upper of said portions having 75 a lesser diameter than the lower, said gate communicating with said upper portion and said outlet with said lower portion, and a strainer carried within said pocket with its upper face on the line of division between 80 said portions, said strainer having its edge beveled to correspond with the slope of the wall of said pocket and being suspended in said pocket solely by the engagement between said wall and said beveled edge. 85

In witness whereof, I hereunto subscribe my name this 4th day of October, A. D., 1911.

AUGUST ERLANDSON.

Witnesses:

A. LYDA JONES,

A. S. DENNISON.