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No. 825,090. PATENTED JULY 3, 1906.

J. J. TURNER.

SKIMMING GATE.

APPLICATION FILED AUG. 12, 1905.

Fig. 1.

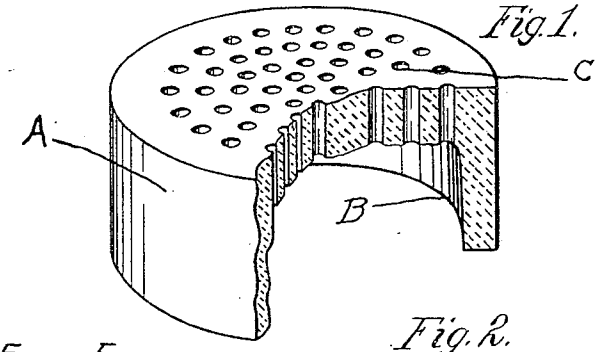


Fig. 2.

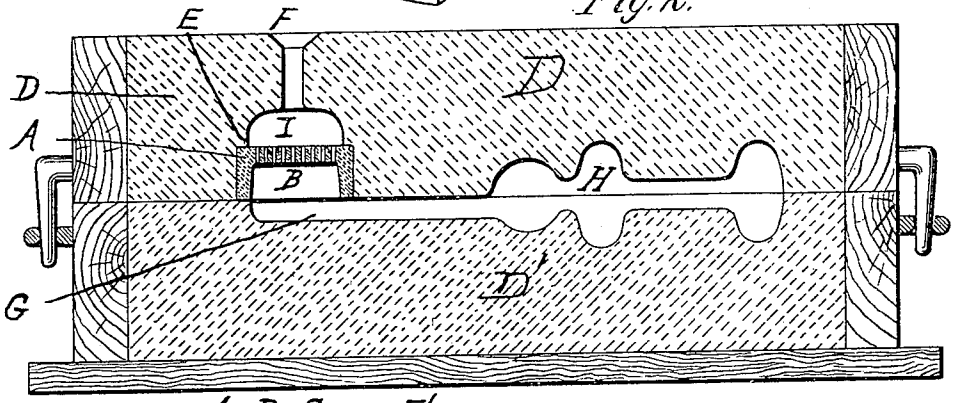


Fig. 3.

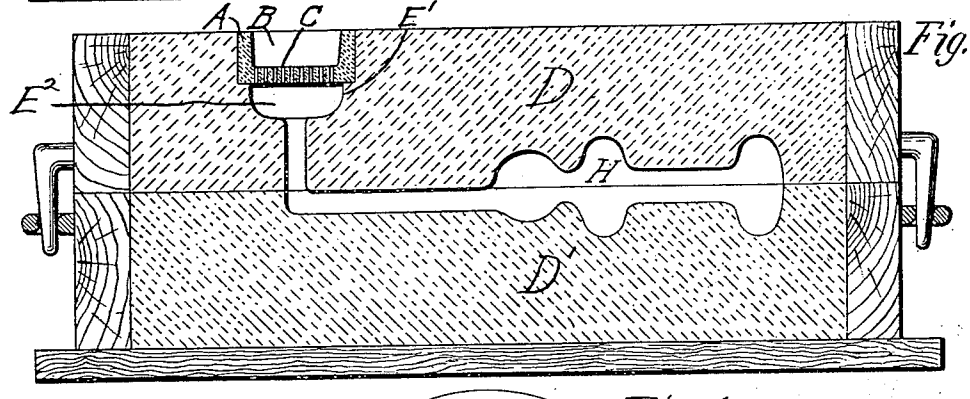
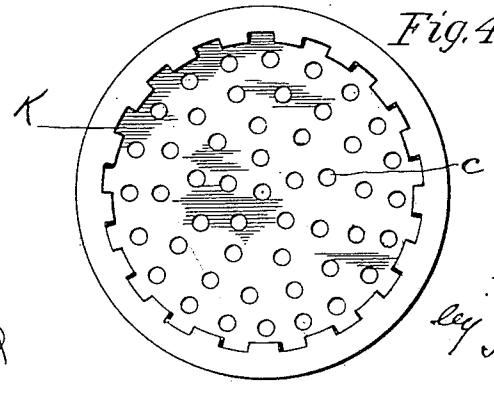


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN J. TURNER, OF HARTFORD, CONNECTICUT.

SKIMMING-GATE.

No. 825,090. Specification of Letters Patent. Patented July 3, 1906.

Application filed August 12, 1905. Serial No. 273,888.

To all whom it may concern:

Be it known that I, JOHN J. TURNER, a citizen of the United States of America, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Skimming-Gates, of which the following is a specification.

My invention is designed for the use of molders and foundrymen, its object being to provide a device for cleaning the molten metal of dross and slag.

Figure 1 is a perspective view of the device with a small section broken away to show its construction. Fig. 2 illustrates one manner of use of the device. Fig. 3 illustrates another manner of use of the device. Fig. 4 shows a modification.

In the accompanying drawings the refining device is denoted in general at A and is formed up into the desired shape from suitable material, such as core-sand. In one side of the block there is formed a recess B. From this recess numerous openings C extend through the block to its opposite side.

One method of use of my device is illustrated in Fig. 2, where it is shown as placed in the cope at the joint of the flask. The cope D is recessed on its under side to form a chamber E, into which the sprue F leads. A gate G is cut in the nowel D' from under the base of the chamber E and leads to the matrix H. My skimming-gate is located in the lower part of the chamber in the cope, resting on the nowel with the recess B down and overlying the gate G. In use the metal is poured into the sprue and passes to the upper part I of the chamber E, where it boils and whirls, (as molten metal always will,) causing the dross and slag, which are lighter than the metal, to rise to the top. The partly-purified metal strains down through the openings C of my refining device, preventing the passage of the larger particles of impurities, thence into the recess B, where it again boils, throwing up such dross and slag as has not been already separated, the purified metal passing from here through the gate G to the matrix H.

The device may also be used as shown in Fig. 3. Here a print similar in shape to that used in Fig. 2 is reversed in position and packed into the top of the cope to form the chamber E', from the bottom of which the sprue leads to the gate and matrix. My device is located in the upper part of this chamber with the recess uppermost. The metal is poured directly into the recess, where it boils and then strains through the holes to the lower part E^2 of the chamber, where it boils again, and from there passes through the sprue to the gate and matrix. Instead of chambering out the upper part of the cope my device may lie directly on top of the cope over the sprue, the cope being scraped out by the molder for a small area around the sprue to direct the metal to the sprue after it passes from the recess through the holes in my refining device.

The dross and slag as it is whirled to the top or outer side of the mass of metal because of the boiling clings to the walls of the chamber whenever it touches. In order to collect as much as possible of this dross and slag, it is desirable in some cases to flute the inner surface of the recess in my refining device, as indicated at K in Fig. 4.

I claim as my invention—

1. The combination with a sand mold of a skimming-gate comprising a block of suitable material having a recess in one side thereof, and a plurality of passages extending from said recess through said block to the opposite side, substantially as described.

2. The combination with a sand mold having connected recesses and a shoulder between them, of a skimming-gate located in the larger recess and against said shoulder, said gate comprising a block of suitable material having a recess in one side thereof, a plurality of passages extending from said recess through said block to the opposite side, substantially as described and for the purposes set forth.

3. The combination with a sand mold having connected recesses and a shoulder between them, of a skimming-gate comprising a cup-shaped block located in the larger recess against said shoulder, the end wall of said block forming a partition between said recesses, and a plurality of openings through said end wall forming passages between said recesses, substantially as described and for the purposes set forth.

4. A skimming-gate for molders' use comprising a block of suitable material formed to shape having a recess whose side walls are fluted, and a plurality of passages extending from said recess through said block to the opposite side thereof, substantially as described and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. TURNER

Witnesses:
JOSEPH F. TURNER,
H. E. HART

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