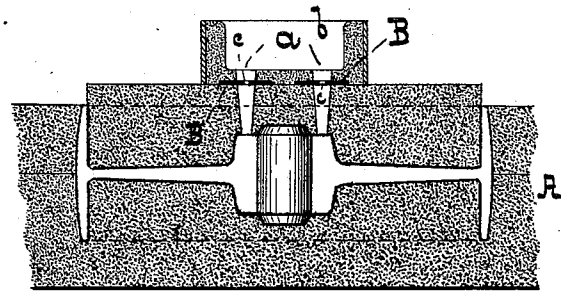
(No Model.)

J. WALKER.

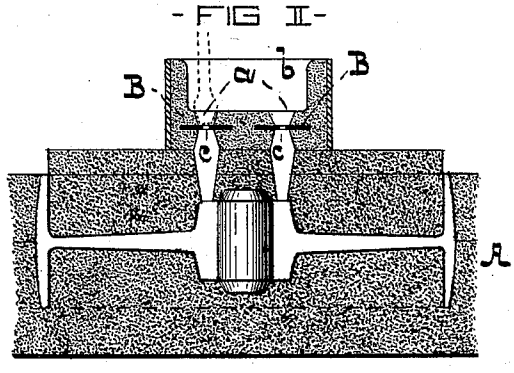
MEANS FOR MAKING METAL CASTINGS.

No. 362,337. Patented May 3, 1887.

-FIG I-



-FIG II-



-WITNESSES-

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UNITED STATES PATENT OFFICE.

JOHN WALKER, OF CLEVELAND, OHIO.

MEANS FOR MAKING METAL CASTINGS.

SPECIFICATION forming part of Letters Patent No. 362,337, dated May 3, 1887.

Application filed December 31, 1886. Serial No. 223,101. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALKER, of the city of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in the Means for Making Metal Castings, of which the following is a specification.

To fully understand the nature of this improvement, it must be known that many valuable molds are ruined in the early stage of the pouring process, owing to a large volume of molten metal suddenly striking the surface of the sand-mold directly under the gate and abrading it. It is impossible to obviate this source of injury to the mold by reducing the size of the pouring-gate, as it is necessary, in order to make the casting solid, that the molten metal should be poured in a large volume, as is well known to those conversant in the art of making castings.

In my invention, as hereinafter fully described, I obviate the liability of injury to the mold in the pouring operation by furnishing the mold with a gate that will give a limited admission of molten metal to the mold at the beginning of the pouring process, which is gradually increased as the pouring continues until the full admission is effected. To accomplish this result, I insert in the gate a plate of sheet metal, preferably iron or tin plate, have a central hole of such size as will allow of only a limited flow of metal to the mold, and which is gradually enlarged by the burning of the inner edge of said plate as the pouring continues, until the central hole is increased to the size of the gate.

In the further description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure I is a vertical section of a mold provided with my improvement. Fig. II shows a modification in the manner of applying the invention, as hereinafter described.

Referring to Fig. I, A is a mold, which in the present case is that of a pulley. The gates, of which there are two, are denoted by *a a*, and the runner is represented by *b*. B B are metal plates, each having the central perforation, *c*, which is much smaller than the gate with which it communicates. The plates *b* are inserted in the sand of the mold, so as to bring their holes in alignment with the center of the gates, as will be seen by reference to the drawings.

By means of this invention the molten metal is first admitted to the interior of the mold, and in contact with the surface of the sand immediately under the gates, in small streams, which are not liable to injure the said surface, and as the burning of the plates takes place the holes are gradually enlarged, and as the enlargement occupies only a few seconds the whole time consumed in the pouring of the mold is not appreciably changed. It will be understood that the metal which enters in small streams forms in the mold a cushion for the metal subsequently introduced to fall on.

In Fig. II the perforated metal plates are in the runner. This manner of employing the invention has the additional advantage that runners containing the plates, as described, can be prepared in quantities ready for use and applied to molds, as required.

One of the pods usually employed to close the runner until the same is filled with molten metal is shown in dotted lines, Fig. I.

I claim as my invention—

In combination with a mold having a gate or aperture for the introduction thereto of molten metal, a fusible plate placed across the said gate, having therein a perforation which is smaller than the said gate, substantially as and for the purpose specified.

JOHN WALKER.

Witnesses:
JOHN POLLOCK,
WM. G. TAYLOR.