No. 788,671. PATENTED MAY 2, 1905.

C. S. PARTRIDGE.

STEREOTYPE METAL MELTING POT.

APPLICATION FILED JULY 3, 1901.

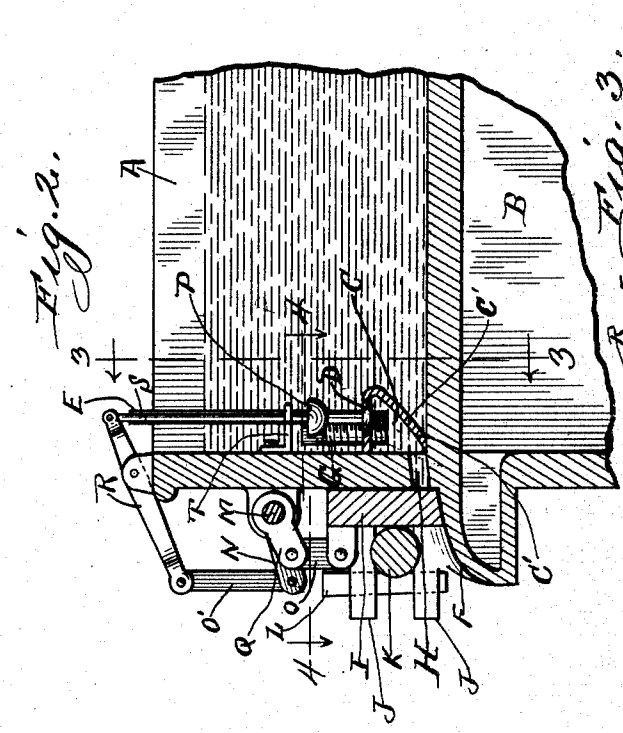


Fig. 2.

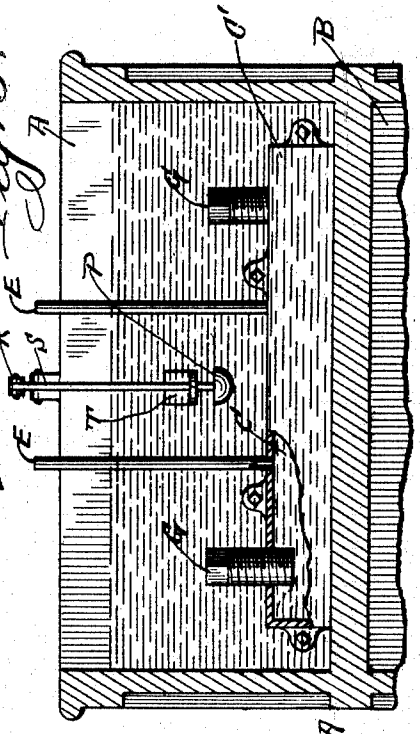


Fig. 3.

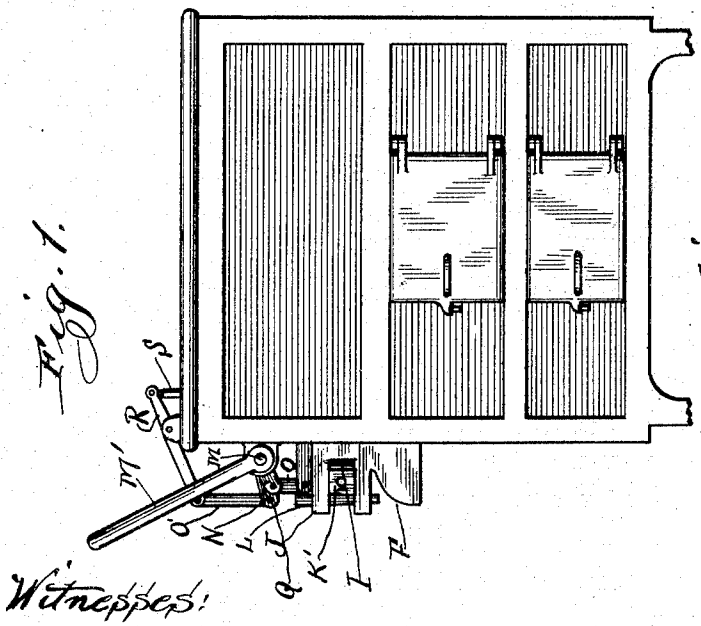


Fig. 1.

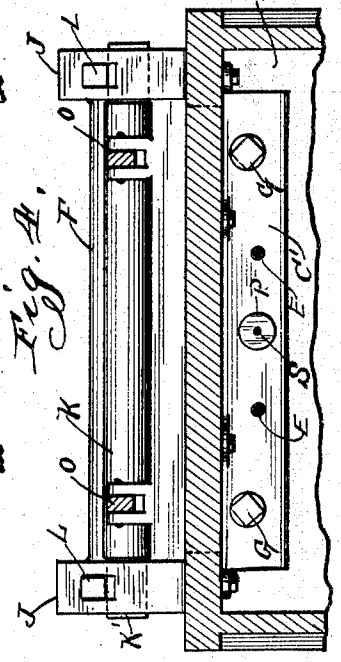


Fig. 4.

Witnesses:
R. J. Jacker
C. M. Friel.

Inventor:
Charles S. Partridge
By Frank D. Thomason
Atty.

PHOTO LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK

No. 788,671. Patented May 2, 1905.

# UNITED STATES PATENT OFFICE.

CHARLES S. PARTRIDGE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO PARTRIDGE & ANDERSON COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## STEREOTYPE-METAL-MELTING POT.

SPECIFICATION forming part of Letters Patent No. 788,671, dated May 2, 1905.

Application filed July 3, 1901. Serial No. 67,048.

*To all whom it may concern:*

Be it known that I, CHARLES S. PARTRIDGE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stereotype-Metal-Melting Pots, of which the following is a full, clear, and exact specification.

Hitherto in casting stereotype plates and bases it has been customary to convey the molten metal from the melting-pot to the mold or casting box by means of ladles. This requires a great deal of skill on the part of the workman, as he has nothing but his eye to guide him in filling the mold. As a result there is a liability of the mold not being completely filled or else of there being a superfluity of metal, which afterward has to be removed.

This invention relates to improvements in stereotype melting-pots which by taking the metal from below the surface avoids the dross, saves the labor involved in lifting the heavy ladle, and allows just the desired quantity of metal to run directly from it into the casting-box whenever a casting is made without any special care on the part of the workman.

In the drawings, Figure 1 is a front elevation of a metal-melting pot embodying the features of my invention. Fig. 2 is a view in vertical section through a portion of said melting-pot in which the gate and charging-chamber are located. Fig. 3 is a sectional view taken on line 3 3, Fig. 2, looking in the direction indicated by the arrows. Fig. 4 is a view in horizontal section therethrough, taken on line 4 4, Fig. 2.

Referring to the drawings, A represents the melting-chamber of a rectangular metal-melting pot mounted in the usual manner over a combustion or heating chamber B. A charging-chamber C is formed extending across one side of the chamber A close to the bottom thereof, so as to be completely submerged in the molten metal. Said chamber C is stationary relative to the melting-pot and is preferably formed by means of a casting C′, which is of the shape shown in cross-section in Fig. 2. Its upper wall or top is practically level, and its inner wall slopes, as shown, to form an inclined bottom, from which the charge of molten metal will gravitate toward the discharge-port H of the charging-chamber, as will hereinafter more fully appear. In the top of the charging-chamber an inlet D is formed in such position that the metal can readily flow therein whenever desired by manipulating a vertically-reciprocal closure P. To permit the escape of air and gases from the charging-chamber, open pipes E are tapped into the top of said chamber, which extend above the level of the metal. The discharge-port H consists of a slot or outlet extending horizontally along the wall of the melting-pot at the base of its inner inclined wall and from end to end of the pouring-chamber. The metal discharged through this port flows over a trough F, which is formed on the outer face of the melting pot beneath said slot to direct the flow of metal outwardly therefrom, the bottom of said trough being hollow and communicating with the combustion-chamber B, so that it is kept heated and prevents chilling of the metal as it passes over the same. The contents of the charging-chamber is sufficient to fill an ordinary stereotype casting-box; but in order to secure accurate gaging of the same, so as to suit varying requirements, one or more screw-plugs G are inserted in the top wall of said chamber, so that by screwing them up or down they may displace more or less metal in the charging-chamber, and thus regulate its capacity. The outlet H is closed by a gate I, consisting of a vertically-reciprocating plate which has sliding contact with the outer face of the side of the melting-pot in which the outlet is formed. The lower edge of this gate is adapted to seat itself when closing the slot on the bottom of the trough, and it is held in position laterally by a horizontal roller K, journaled at its ends in bearing-blocks K′, which have horizontal sliding engagement in parallel guides formed in outwardly-projecting lugs J, located at either end of the melting-pot. Said roller K is allowed a limited

lateral adjustment by taper keys L passing through said lugs J, that bear against the outer faces of the bearing-blocks K′. A rock-shaft M is journaled in suitable lugs of the outer face of the melting-pot above the gate I, that is actuated by means of a lever M′, suitably secured at one end of the shaft. It has arms Q secured at either end thereof between its bearings, and these arms are connected by suitable links O to lugs projecting from the gate I, so that by moving the lever M′ the gate I can be raised or lowered. Another arm N on the rock-shaft M is connected by the links O′ to the outer end of a rocking beam R, which is fulcrumed on the top of the side wall of the melting-pot and has its inner end pivotally connected to the stem S, which passes through a guide-bracket T in the melting-pot wall and carries the inlet-closure P on its lower end. It will thus be seen that the movement of the rock-shaft M by its handle M′ acts both to operate the pouring-gate and the closure P of the inlet to the charging-chamber, and the parts are so disposed and arranged that when the slot H is closed by the gate I the inlet D of the charging-chamber is opened, and, conversely, when the closure P is seated the gate I is raised and slot H is opened. In operating this portion of my invention the handle M′ should be moved quickly and positively, so as to cause a practical instantaneous opening of one of the closures and the closing of the other.

The operation of the device is obvious. The pouring-gate is closed by depressing the handle M′ and the inlet D opened. Thus the molten metal refills the charging-chamber C. The casting-box in connection with which my invention is used is of the usual construction, and its charging end is preferably of a width equal to the length of the trough F. When the said box is placed in proper position outside the melting-pot and the handle M′ of the latter raised, the result is the almost instantaneous discharging of the contents thereof into the casting-box and the simultaneous closing of the charging-chamber to the melting-pot. The quantity of metal in the charging-chamber is sufficient to fill the mold, and as the metal runs over the hollow heated trough F it reaches the casting-box with substantially no fall in temperature. The handle M′ is depressed, the gate H is closed, and the charging-chamber is refilled through the inlet D.

Owing to the fluidity and weight of stereotype-metal when molten, it is necessary that the gate I be held in very close engagement with the slot edges. This is accomplished by the pressure-roller K and its adjusting-keys L, by which the gate may be seated so firmly as to prevent any escape of metal. In practice it is desirable when the discharge-gate is to be raised to loosen the keys L, thereby releasing the roller and permitting the easy manipulation of the gate. Obviously other adjusting means for the roller may be used, and I do not limit myself to any specific forms of construction except as set forth in the claims.

What I claim as new is—

1. In a stereotype melting-pot, a melting-chamber, a charging-chamber, a partition separating said chambers, an apertured valve-seat in said partition, a vertically-reciprocating closure therefor, a discharge-port from said charging-chamber, a gate therefor, and lever and rock-shaft connections between said closure and gate to simultaneously seat said closure and open said port.

2. In a stereotype melting-pot, a melting-chamber, a charging-chamber, a partition separating said chambers, an apertured valve-seat in said partition, a vertically-reciprocating closure therefor, a discharge-port form said charging-chamber, a vertically-reciprocating gate therefor, and lever and rock-shaft connections between said closure and gate to simultaneously seat said closure and raise said gate.

3. In a stereotype melting-pot, a melting-chamber, a charging-chamber, a partition separating said chambers, an apertured valve-seat in said partition, a vertically-reciprocating closure therefor, a horizontal discharge-slot in the outer wall of said charging-chamber, a vertically-reciprocating gate having sliding contact with the outer wall, adapted to close said slot, a rock-shaft journaled on the outer wall, an arm to rotate said shaft, and rock-arms, levers and links connecting said rock-shaft to said closure and gate, to simultaneously seat said closure and raise said gate.

4. In a stereotype melting-pot, a melting-chamber, a charging-chamber, a partition separating said chambers, an apertured valve-seat in said partition, a vertically-reciprocating closure therefor, a horizontal discharge-slot in the outer wall of said charging-chamber, a vertically-reciprocating gate having sliding contact with the outer wall, adapted to close said slot, a rock-shaft journaled on the outer wall above said gate, rock-arms on said shaft articulated to said gate, a rock-beam articulated to said closure at one end, pivoted to said wall, and articulated at its other end to a rock-arm of said shaft, and a handle to rotate said shaft, thereby simultaneously seating said closure, and raising said gate.

5. In a stereotype melting-pot, a melting-chamber, a charging-chamber, a valve opening from said melting-chamber into said charging-chamber, a hollow pouring-lip below said slot, opening into and heated by the heating-chamber of the pot, a closure for said slot seating itself on said lip and means connecting said valve and closure to simultaneously open the slot and close the valve.

6. In a stereotype melting-pot, a melting-

chamber, a charging-chamber, a valve opening from said melting-chamber into said charging-chamber, a horizontal discharge-slot in the outer wall of said charging-chamber, a vertically-reciprocating gate having sliding contact with the outer wall, a horizontal roller bearing against the outer side of said gate, and means to simultaneously close said valve and raise said gate.

7. In a stereotype melting-pot, a melting-chamber, a charging-chamber, a valve opening from said melting-chamber into said charging-chamber, a horizontal discharge-slot in the outer wall of said charging-chamber, a vertically-reciprocating gate, having sliding contact with the outer wall above the slot, a horizontal roller bearing against the outer side of said gate, journaled in horizontally-movable bearings, keys engaging said bearings adapted to move said roll toward said gate, and means to simultaneously close said valve and raise said gate.

8. In a stereotype melting-pot, a charging-chamber, a discharge-port therefrom, a vertically-reciprocating gate, adapted to close said port, and means for laterally adjusting said gate.

9. In a stereotype melting-pot, a charging-chamber, a discharge-port therefrom, a vertically-reciprocating gate for said port, and an adjustable pressure-roller adapted to hold said gate to its seat.

10. In a stereotype melting-pot, a charging-chamber, a discharge-port therefrom, a vertically-reciprocating gate for said port having sliding contact with the outer wall of said chamber, and an adjustable pressure-roller adapted to hold said gate in contact with said wall.

11. In a stereotype melting-pot, a charging-chamber, a discharge-port therefrom, a vertically-reciprocating gate for said port, an adjustable pressure-roller adapted to hold said gate in contact with the said wall, and means affording lateral adjustment of said roller.

CHARLES S. PARTRIDGE.

Witnesses:
M. FRIEL,
FRANK D. THOMASON.