(No Model.)

C. J. DONOVAN.

LADLE FOR MOLTEN METAL.

No. 361,352. Patented Apr. 19, 1887.

Fig. 1.

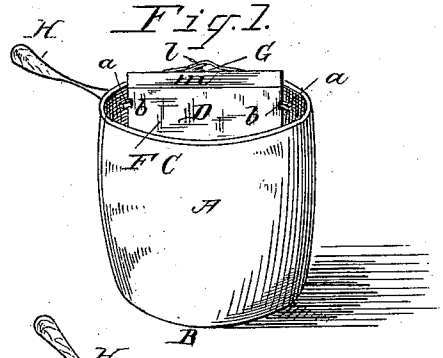


Fig. 2.

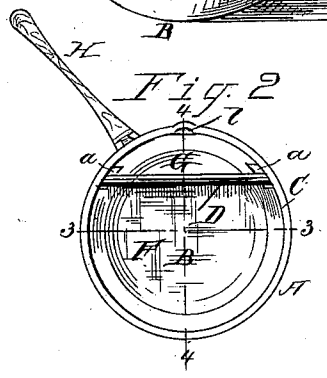


Fig. 3.

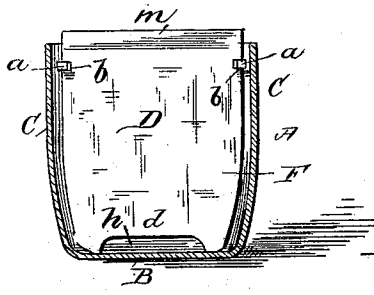


Fig. 4.

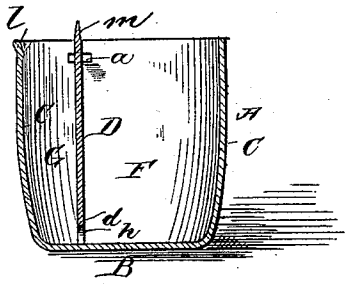
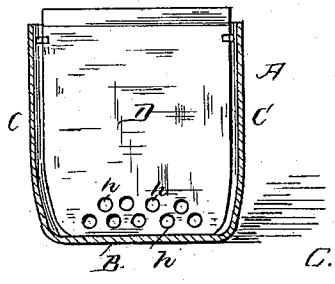


Fig. 5.



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UNITED STATES PATENT OFFICE.

CORNELIUS J. DONOVAN, OF BOSTON, MASSACHUSETTS.

LADLE FOR MOLTEN METAL.

SPECIFICATION forming part of Letters Patent No. 361,352, dated April 19, 1887.

Application filed January 30, 1885. Serial No. 154,472. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS J. DONOVAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Ladles, Dippers, or other Receptacles for Molten Metal, &c., of which the following is a full, clear, and exact description.

The purpose of this invention is to provide in ladles, crucibles, dippers, and other receptacles for molten metal, &c., means whereby, in pouring such molten metal from such receptacles, the pure and clear molten metal will be separated from the slag, charcoal, ashes, or other foreign matter or matters that may be therein; and it consists in combining with a suitable vessel, to be used as a ladle, crucible, dipper, &c., a partition or wall within the chamber of such vessel, which partition is provided with an aperture or apertures in a position in relation to the interior of the said vessel for operation and effect, all substantially as hereinafter described.

In the accompanying sheet the drawings and manner of carrying out this invention are illustrated.

Figure 1 is a view in perspective of a ladle embodying this invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical section on line 3 3, Fig. 2. Fig. 4 is a vertical section on line 4 4, Fig. 2. Fig. 5 is a sectional view illustrating a modification.

In the drawings, A represents a vessel of a common basin or bowl shape for use as a ladle for the dipping or pouring of molten metal, &c., having a base or bottom, B, and walls or sides C. On the opposite side walls, near the top edge of C, and opposite each other in a line that is outside of the axis of the ladle, are lugs or projections *a a*. This partition D at its vertical edges conforms to the inside lines of the vessel, and extends from the line above the top edge of the ladle to or near the bottom thereof. This partition D has notches or grooves *b b* in a position to engage with the lugs or projections *a a* on the inside walls, C, of the ladle.

The partition-wall D, as will be seen from an inspection of the drawings, divides the basin or ladle into two chambers, F and G, of unequal capacity. The partition-wall D, dividing the chambers F and G, as above described, at its extended top edge, *m*, as shown, is made slightly beveled, and at or near its bottom *d* has an aperture or apertures, *h*, affording a communication between the chambers F and G.

H represents a handle placed in any convenient position for dipping molten metal, &c., in the use of this invention.

The lugs or projections *a a* are intended to be cast in one piece with the body or wall of the ladle; still they may be made separate and secured in their proper position in any suitable manner.

The partition-wall D is made separate and removable from the vessel A, and to be placed therein in a vertical position and forced toward the side, forming the outer wall of chamber G, when the engagement of the grooves or notches *b* with the lugs *a*, and the contact of the vertical edges of the partition with the inner wall, C, keep such partition in its proper place.

Other forms of communication between the chambers F and G, through the partition D, may be provided than as shown in Figs. 3 and 4—as, for instance, a series of perforations, forming a strainer, as shown in Fig. 5—or still further variations may be made in such matter without departing in the least from this invention. A lip or spout may be formed in the wall of the chamber G for facility and accuracy in pouring, as well known.

The removable partition is adapted to accurately fit the sides and bottom of the vessel A, and to extend above the top thereof, as shown at *m* in Fig. 4. It will be observed that the upper ends of both chambers F G are open, so that the metal therein, in the act of pouring, can be inspected.

The use of the ladle, constructed as shown and described, is as follows: Dipping such a ladle into a crucible, &c., containing molten metal, the chamber F is filled, the partition keeping all of such molten metal from entering the chamber G, the extension *m* of the partition serving more effectually to accomplish this result.

As well known, the slag, scum, charcoal, ashes, and other foreign matter contained in and with the molten metal will be on the top of the same and the clear and pure metal below such foreign matter.

It is well known by founders that in pour-

ing from a ladle, the slag, &c., becoming chilled, will bank up; hence I provide against the slag passing over the partition into the chamber G. At the same time I leave the top thereof open, for the purpose stated. Then, to pour the metal for molding or casting, the edge *l* of the wall of the chamber G is depressed sufficiently for the metal, which has passed from the chamber F through the aperture or apertures *h* into the chamber G, to pass off at such edge *l*, at the lip or spout, if any be provided. As such metal passes away from chamber G in pouring, &c., it is replaced by more of the same quality, density, or consistency passing from the chamber F through and into the chamber G. When all the desirable molten metal has thus been poured and the residuum only remains in the chamber F, the pouring process is stopped, and such refuse or undesirable matter is removed from the basin or ladle. Thus it will be seen that the desirable metal to be poured is so poured and strained, as it were, from what would be undesirable to pour in making castings, &c., the advantage of which is too well known to need further mention.

I am aware that it is not new to construct in one piece a ladle having a hooded or closed top pouring-receptacle; nor is it new to construct ladles with a partition terminated on a level with the top of the ladle-body and formed integral therewith and leaving a contracted pouring-hole. Furthermore, it is not new to employ removable partitions in ladles terminating above the bottoms thereof and not extending above the tops. These devices I broadly disclaim.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture, the within-described basin or bowl shaped ladle, having a pouring-lip, and a removable partition, D, perforated at its lower part, extended above the top of the basin and adapted to the contour of the inner surface of the basin, as shown and described.

2. The basin-shaped ladle having two open-top chambers, a removable partition having an opening at its bottom and an extension above the top of the basin, the notches *b b*, and the lugs *a a*, substantially as shown and described.

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

CORNELIUS J. DONOVAN.

Witnesses:

A. E. VILES,

RAYMOND R. GILMAN.