B. H. WHITING.
TEAPOT SPOUT LADLE.
APPLICATION FILED AUG. 13, 1920.

1,399,532.

Patented Dec. 6, 1921.

Fig. 1

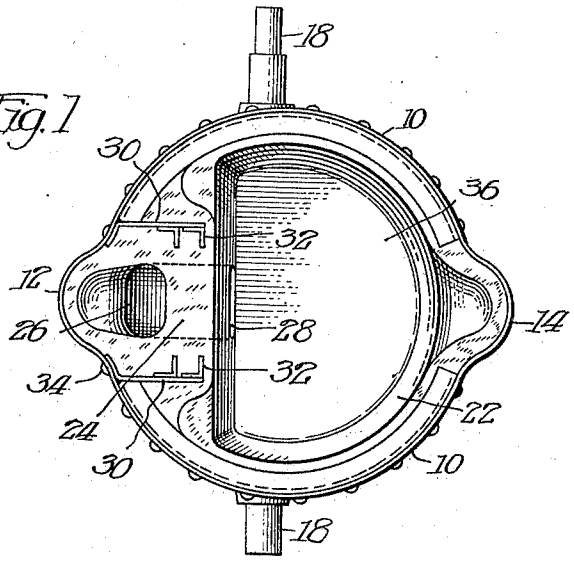
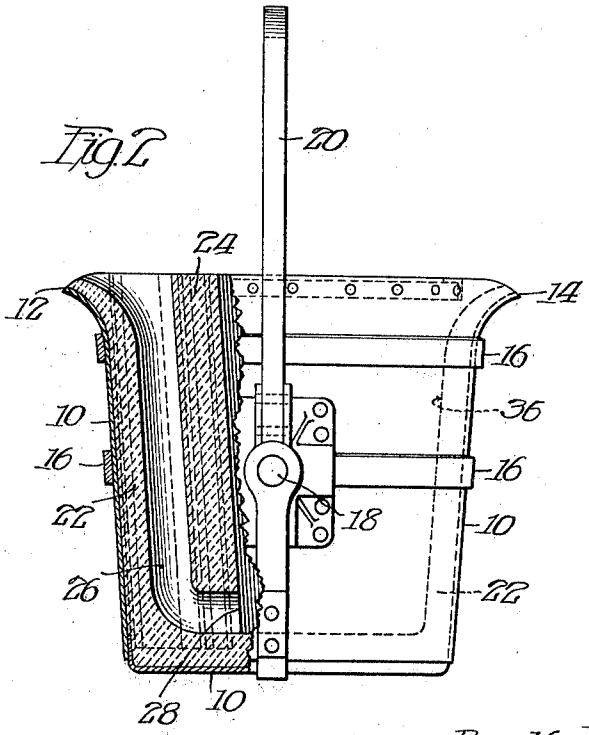



Fig. 2




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# UNITED STATES PATENT OFFICE.

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## TEAPOT-SPOUT LADLE.

1,399,532. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed August 13, 1920. Serial No. 403,296.

*To all whom it may concern:*

Be it known that I, BRADFORD H. WHITING, 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 Teapot-Spout Ladles, of which the following is a specification.

This invention relates to ladles for handling metal used in the metal casting art as for instance in connection with blast furnaces and foundries. The object of the invention is to provide a ladle of this type with what is known as a tea-pot spout viz., a passage through which metal can be poured from the bottom of the ladle so as to leave the upper surface of the metal in the ladle, frequently covered with slag, undisturbed as the clean metal pours out from the ladle, and to do this in such a way that the strength and balance of the ladle on its supporting bail is not disturbed. Attempts have been made to make a ladle of this type by attaching to the outside of the ladle an independent spout but this has heretofore produced entirely unsatisfactory results. The invention consists in taking a cup-shaped ladle of ordinary commercial construction, well known in this art, and building inside of it a partition which produces the desired spout and doing this in such a way that the strength of the ladle is not weakened and its balance on its trunnion in the bail support is not destroyed. More particularly, the invention consists in features and details of construction more fully set forth in the specification and claim.

Referring to the drawings in which similar numerals represent the same parts throughout the several views,

Figure 1 is a plan view of a ladle illustrating this invention in its preferred form.

Fig. 2 is a side view of the mechanism of Fig. 1, the left hand half being shown as a central section.

The ordinary ladle used in the metal casting art is a cup-shaped affair comprising an exterior metallic case 10 having a cylindrical side wall and connecting bottom as shown, two opposite portions of the side wall being bent outward in the pouring lips 12 and 14. This exterior case is bound with suitable reinforcing straps 16 from which project on opposite sides of the ladle and intermediate between the pouring lips trunnions 18 which are journaled in the suitable bail 20 extending over the ladle and adapted to be grasped by the traveling crane or other lifting mechanism. The interior of the case 10 is lined with fire resisting material 22 such as brick or ganister intended to prevent the molten metal in the ladle from attacking the shell or case 10. The ladle thus far described is a commercial structure and serves the useful function of expanding uniformly under the heat of the molten metal in the ladle without causing binding of the trunnions 18 and the bail 20 which expands with the ladle, thereby avoiding accidents in the foundry which would occur if the ladle should stick on its trunnions. In applying the tea-pot spout to this form of ladle a transverse interior partition wall 24 is placed across the ladle, the same having extending downward between it and the adjacent exterior wall of the ladle a tea-kettle passage or spout 26 communicating with an adjacent lip 12 at the top and entering the bottom of the ladle through a port or passageway 28. This partition 24 is preferably made as shown of solid fire resisting material reinforced and held in place by metallic tie members 30 having projecting wings or arms 32 locking in the fire proof material and secured at its opposite edge as by rivets 34 to the outer case or shell of the ladle.

In constructing the ladle of this invention the trunnions 18 are located in vertical plane through the center of gravity of the ladle as it exists after this partition 24 forming the spout is in place so that when completed the ladle hangs approximately level as shown in Fig. 2, both with and without the metal to be poured in the ladle. The vertical plane in which the trunnions 18 are located is not the central axis of the exterior shell of the ladle as would be the case were the ladle not weighted with the partition 24 at one side of its center.

When a ladle thus constructed is used the molten metal is placed in the chamber 36 in upright position; part of the metal of course flows up the spout 26 in the obvious manner. The ladle with the metal in it balances on the bail; the heat of the metal expands the exterior case of the ladle uniformly, and all the trouble which has heretofore occurred with externally spouted ladles is absent.

When the operator desires to pour the

metal he tilts the ladle in a counterclockwise direction as viewed in Fig. 1, whereupon the metal in the bottom of the ladle flows through port 28, and the spout passage 26 to and over the lip 12 while the surface of the metal in the ladle remains unstirred. When the metal to be poured has all passed through the spout 26 the ladle is tilted in the opposite direction so that the slag remaining contents of the ladle pass out over the lip 14.

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

A molten metal retaining ladle consisting of a cup shaped metallic receptacle lined with molten metal resisting material, the same having a vertically positioned interior partition wall located adjacent to one side of the ladle and perforated from top to bottom inside the wall to form a spout leading from the bottom of the ladle to an external edge of the ladle and means embedded in the fire resisting material, adjacent to said spout for reinforcing said material and holding it in place, the reinforcing means comprising metal plates, secured to the ladle wall, and provided with surface projections engaging and holding the resisting material, for the purposes set forth.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

BRADFORD H. WHITING.

Witnesses:
A. H. McDOUGALL,
GEORGE P. FISHER.