April 8, 1941. J. T. ROGERS 2,237,790

MELTING POT DISCHARGE ASSEMBLY FOR TYPE CASTING MACHINES

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Fig. 1.

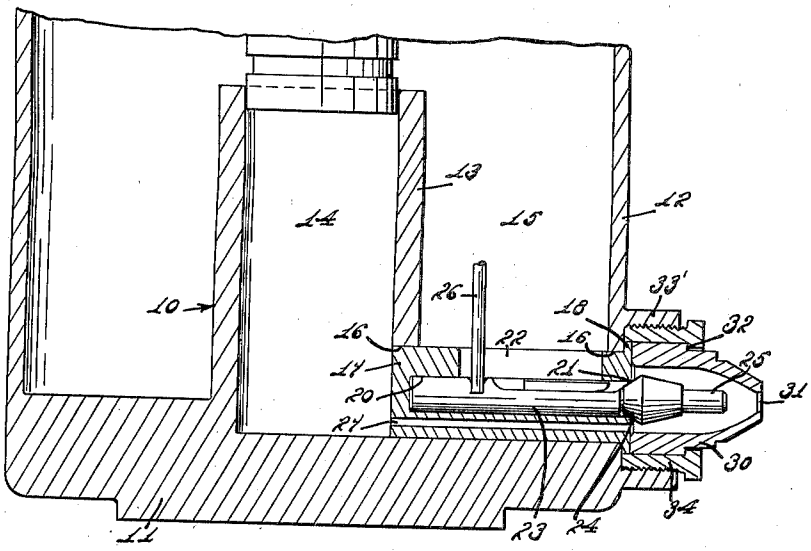
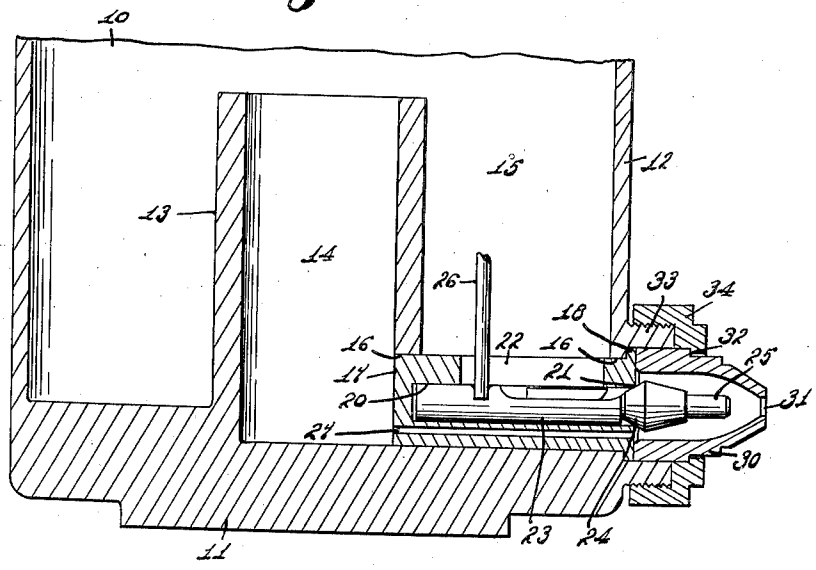


Fig. 2.



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MELTING POT DISCHARGE ASSEMBLY FOR TYPE CASTING MACHINES

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1 Claim. (Cl. 199—47)

In many type casting machines, immediately preceding the present invention, the melting pot was provided with a two-diameter discharge bore, each of which was slightly tapered. Into the small diameter portion of this bore was driven by a driving fit (to insure against metal leakage), a thimble, in the bore of which was reciprocably mounted, a valve, one portion of the wall of the sleeve being slotted to afford communication between the melting pot and the interior of the thimble, said valve coacting, in one position, with the mouth of the thimble, to shut off metal flow to the discharge nozzle. In the larger diameter outer end of the discharge bore was tightly driven a nozzle shell which enclosed the outer end of the valve and with which the valve, in one position, cooperated to cut off discharge of molten metal from the nozzle.

While such a nozzle structure is entirely satisfactory so long as the parts remain in normal condition, it was found, in practice, that, from time to time, replacements became necessary and removal of the driving fit nozzle shell and thimble was an exceedingly costly procedure.

The object of my present invention is to produce a discharge structure of the general character noted above, but so modified that, without sacrifice of tightness against leakage of hot metal, the several parts may be very readily removed, repaired, or replaced, by the average mechanic.

The accompanying drawing illustrates my invention:

Fig. 1 is an axial section of one embodiment of my improvement; and

Fig. 2 a similar section of another embodiment.

In the drawing 10 indicates a fragment of the usual melting pot adjacent the discharge point thereof, said pot comprising a bottom 11, side wall 12, and intermediate wall 13 which divides the pot into a main chamber 14 and a supplemental chamber 15. The outer wall 12 and intermediate wall 13 are provided with aligned bores 16, 16 which provide a sliding fit for the thimble 17 which is of usual construction except that its outer end is provided with an external flange 18 adapted to engage the outer surface of wall 12. This thimble 17 is provided with a cavity 20 which, at its open outer end, provides a valve seat 21. The wall of thimble 17 is pierced by a slot 22 which affords communication between chamber 15 and cavity 20. Reciprocably mounted in cavity 20 is the usual valve 23 having a portion 24 seatable upon seat 21 and a portion 25, the purpose of which will appear. This valve is reciprocated axially by the usual finger 26 which is carried by a rock shaft forming part of the general machine. The wall of thimble 17 is longitudinally pierced by a passage 27 which affords communication from chamber 14 to the outer end of thimble 17 beyond seat 21.

Sleeved over the outer end of valve 23 is a nozzle shell 30 provided with a mouth 31 into which part 25 of valve 23 may be projected. The shell 30, at its inner end, engages the outer end of thimble 17 and this shell is provided with an external circumferential shoulder 32.

In the form shown in Fig. 2, the other surface of wall 12 of the pot is provided with an externally threaded flange 33 surrounding flange 18 of thimble 17 and the inner end of nozzle shell 30 and threaded onto this flange 33 is a clamping sleeve 34 provided with an internal shoulder adapted to engage shoulder 32 of the nozzle shell 30 thereby firmly clamping nozzle shell 30 onto the outer end of thimble 17 and clamping the flange 18 of said thimble upon the outer surface of the end wall 12 of the melting pot.

The form shown in Fig. 1 differs only in that the flange 33' is internally threaded to receive the clamping sleeve 34.

I claim as my invention:

A nozzle assembly for melting pots, comprising a melting pot having a wall perforated for the reception of a valve thimble, a valve thimble slidingly projected into said perforation and having an external flange engaging the outer face of the perforated pot wall, a nozzle shell, the inner end of which rests upon the outer end of the valve thimble and the outside of which is provided with a circumferential shoulder, and a clamping element having a shoulder oppositely associable with the nozzle shell shoulder, and means for associating said clamping element with the pot by a readily separable connection capable of firmly clamping the nozzle shell and valve thimble together upon the pot in a fluid-metal tight association.

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