

May 9, 1933.

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1,908,032

GOOSENECK OPERATING MEANS FOR DIE CASTING PUMPS

Filed March 30, 1931

3 Sheets-Sheet 1

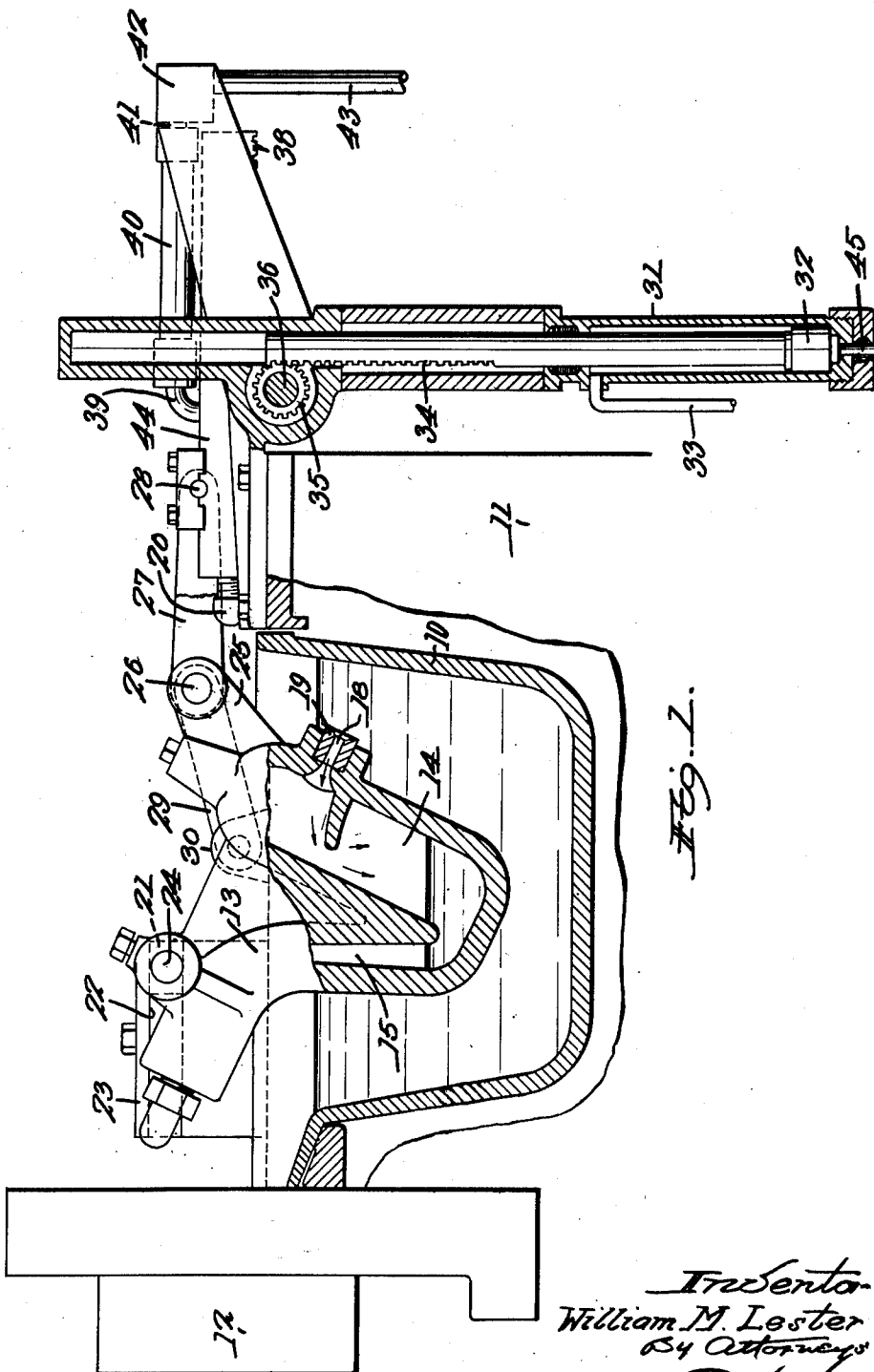


Fig. 2.

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3 Sheets-Sheet 2

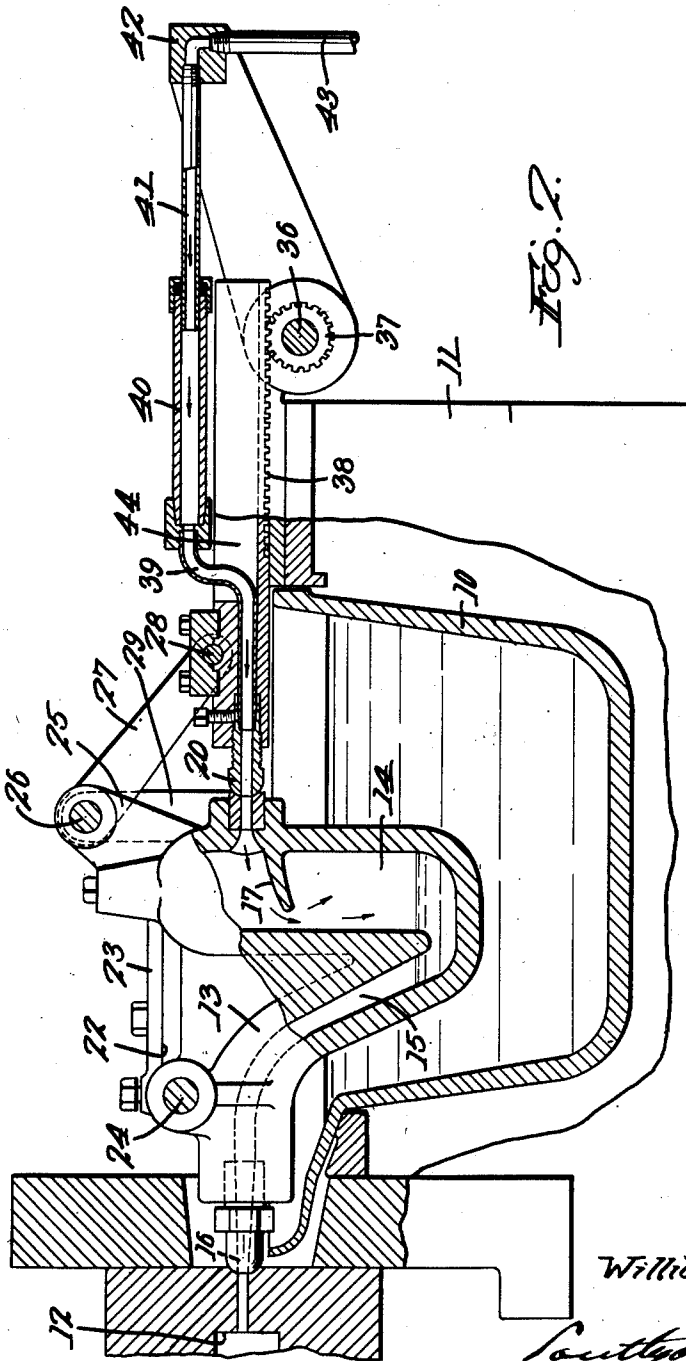


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3 Sheets-Sheet 3

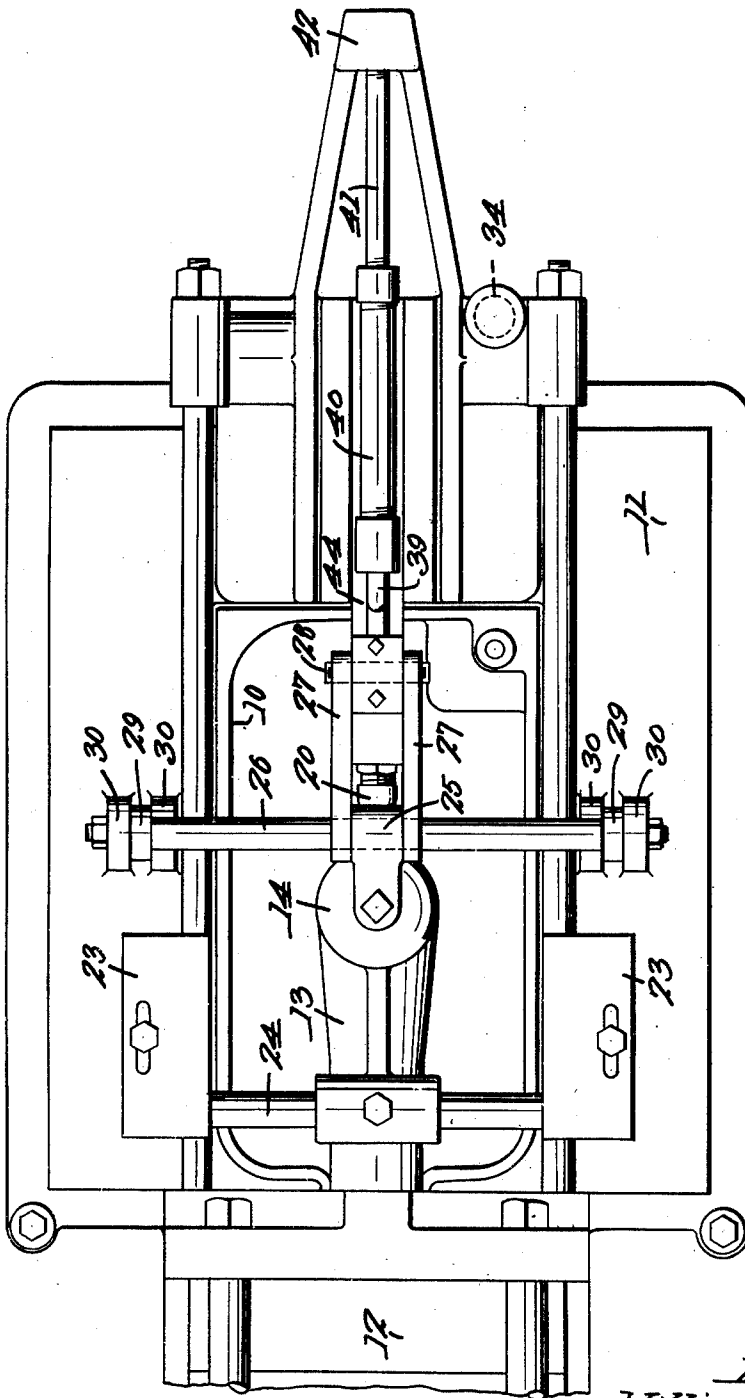


Fig. 3.

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GOOSENECK OPERATING MEANS FOR DIE CASTING PUMPS

Application filed March 30, 1931. Serial No. 526,245.

This invention relates to a so-called "gooseneck" constituting a part of a pneumatic pump, and it is designed particularly for use in die casting.

5 The principal objects of the invention are to provide simple and effective means for moving the gooseneck from filling position to casting position and vice versa; to provide simplified means for directing the compressed air into the gooseneck to force enough metal from the gooseneck to form the desired casting; to seal the joint in the nipple through which the gooseneck is filled with metal, and to provide a very simple motion for the gooseneck.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

20 Fig. 1 is a transverse central sectional view of a melting pot with a gooseneck therein, according to this invention, in position for filling the gooseneck with sufficient metal to form a casting;

25 Fig. 2 is a similar view with the parts in position for forcing the metal from the gooseneck into the mold, otherwise in casting position, and

30 Fig. 3 is a plan with the parts in the position shown in Fig. 2.

The invention is shown as applied to a melting pot 10, mounted in a furnace frame 11 and adapted to supply metal to a mold 12, the character of which may be of any desired kind. The melting pot 10 is adapted to be heated up in the furnace in which it is located and it is provided with a so-called gooseneck 13. This consists of a chamber 14 for receiving the metal, a spout 15 for directing the metal to the mold through a nozzle 16 and a partition 17 over which the metal is introduced into the chamber 14 through the inlet 18 in the position shown in Fig. 1. This inlet opening is provided with an inlet nozzle 19 adapted to be forced up against an air nozzle 20 in casting position as shown in Fig. 2.

50 The gooseneck also is provided with a pair of rectangular slides 21 movable in tracks 22 in fixed guides 23. The gooseneck is piv-

oted to the slides 21 by a shaft 24 so that this end of the gooseneck is always held at this elevation, the guide being horizontal. At the other end there is an ear 25 on the gooseneck provided with a pivot shaft 26 55 which engages through links 27 with a stationary pin bearing 28, the purpose of which is to swing the gooseneck from one position shown to the other. There are also links 29 pivoted on the shaft 26 which is supported 60 by ears 30 fixed in stationary position on the melting pot.

For the purpose of operating these parts there is a cylinder 31 having a piston 32 therein adapted to be operated by compressing air or other fluid through pipes 45. The rod of this piston is provided with a rack 34 meshing with a gear 35 fixed to a shaft 36. On this shaft is another gear 37 70 meshing with a horizontal rack 38 on a slide 44 and when the shaft 36 is turned the rack 38 will be moved by it, taking the nozzle 20 with it at all times. The nozzle is mounted in this slide. This nozzle is connected through a pipe 39 with a telescoping tube 40 in which slides a tube 41, the 75 end of which is supported in stationary position in a bracket 42. An air supply pipe 43 supplies air under pressure through this connection or other fluid. 80

Assuming the parts to be in the position shown in Fig. 1, air is introduced into the cylinder 31 for the purpose of raising the piston rod and rack 34 and turning the shaft 36 to the left. This forces the nozzle 85 20 to the left and also carries the pin 28 in the same direction at the same speed. The first result of this is to swing upwardly the pin 26 about the center of the ear 30 and this swings the gooseneck to a vertical position as shown in Fig. 2. This also brings the nozzle 16 into engagement with the inlet of the mold 12 and forces it against the same. Also thereafter the rack 38 and the nozzle 20 move further to the 95 left and press against the nozzle 19 so that air can be admitted through the pipes 43, 41, 40, 39 and 20. This air forces the metal up the spout 15 into the mold.

When the parts are in the position shown 100

in Fig. 1 the molten metal from the melting pot 10 enters the nozzle 19 and flows over the partition 17 into the bottom of the gooseneck.

5 This constitutes a comparatively simple motion and provides simple means for operating the gooseneck from casting position and back again. I have mentioned the motion of the gooseneck as being controlled by
10 compressed air but, of course, any other fluid under pressure can be used.

Although I have illustrated and described only one form of the invention I am aware of the fact that modifications may be made
15 therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited in this respect but what I do claim is:

20 1. In a mold filling device, the combination with a melting pot, of a gooseneck therein having discharge and inlet nozzles at opposite ends, means whereby, when the gooseneck is drawn back, the discharge nozzle
25 will be elevated above mold filling position and the inlet nozzle will be depressed below the level of metal in the pot, and a partition in the gooseneck just below the inlet nozzle to receive and guide the metal
30 into the interior of the gooseneck.

2. In a mold filling device, the combination with a melting pot, of a gooseneck therein having discharge and inlet nozzles at opposite ends, means for elevating said
35 discharge nozzle and depressing said inlet nozzle below the level of the metal in the pot comprising a horizontally slidable pivot carrying the discharge end of the said gooseneck, a slide positioned rearwardly of said
40 gooseneck, a link pivotally connected to said slide, and to the upper rear end of said gooseneck, and means for horizontally reciprocating said slide.

3. In a mold filling device, the combination with a melting pot, of a gooseneck therein having discharge and inlet nozzles at opposite ends, means for elevating said
45 discharge nozzle and depressing said inlet nozzle below the level of the metal in the pot comprising a horizontally slidable pivot carrying the discharge end of the said gooseneck, a slide positioned rearwardly of said
50 gooseneck, a link pivotally connected to said slide, and to the upper rear end of said gooseneck, means for horizontally reciprocating said slide, and a pneumatic nozzle carried by said slide and adapted to engage
55 with said inlet nozzle.

4. In a mold filling device, the combination with a melting pot, of a gooseneck therein having discharge and inlet nozzles at opposite ends, means for elevating said
60 discharge nozzle and depressing said inlet nozzle below the level of the metal in the pot comprising a horizontally slidable pivot
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carrying the discharge end of the said gooseneck, a slide positioned rearwardly of said gooseneck, a link pivotally connected to said slide, and to the upper rear end of said
70 gooseneck, means for horizontally reciprocating said slide, a pneumatic nozzle carried by said slide and adapted to engage with said inlet nozzle, and a telescoping pipe connecting said pneumatic nozzle to a source
75 of pneumatic pressure.

In testimony whereof I have hereunto affixed my signature.

WILLIAM M. LESTER.

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