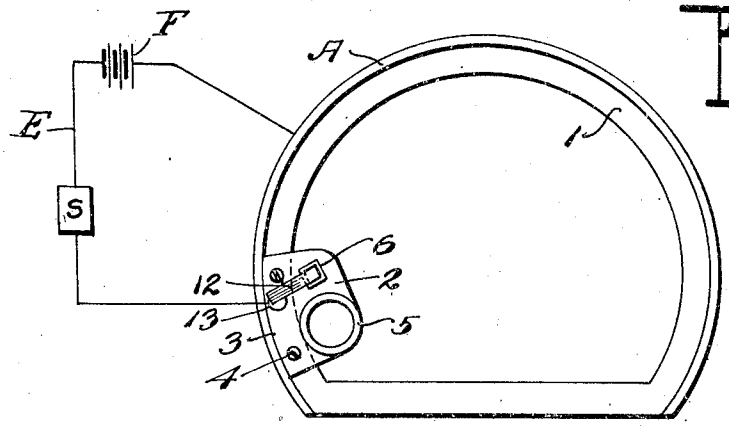
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C. L. STUBBS

METAL PIG HOLDER AND TIMER

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Fig. 1.



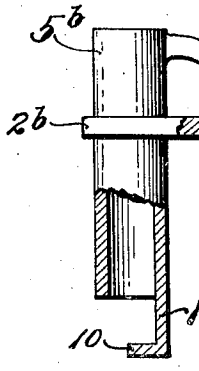


Fig 10.

Fig. 3.

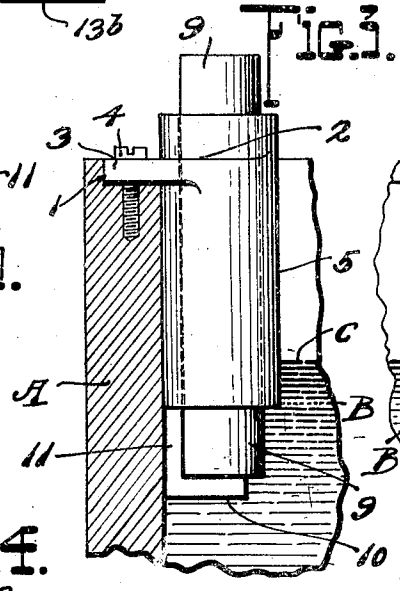


Fig. 2.

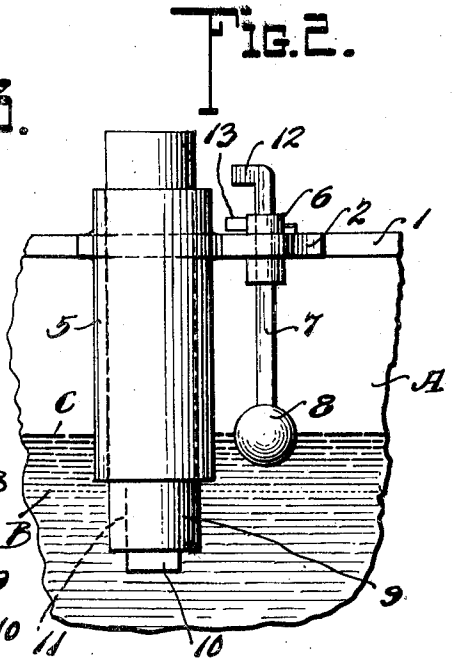
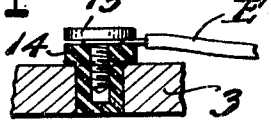


Fig. 4.



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METAL PIG HOLDER AND TIMER

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Fig. 5.

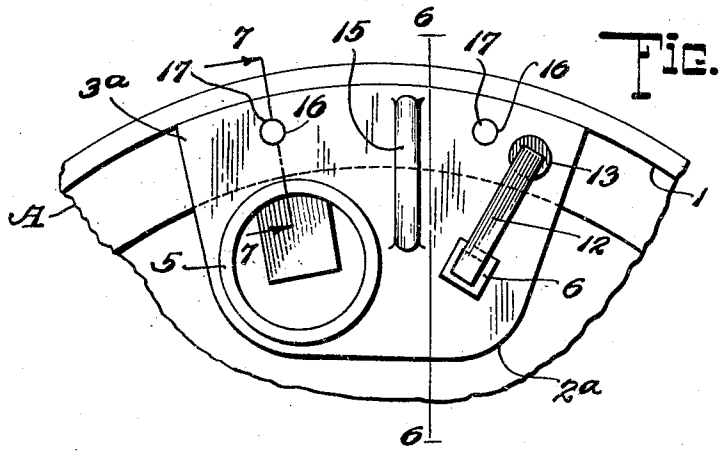


Fig. 8.

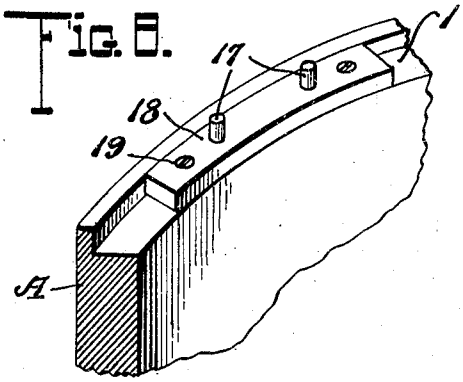


Fig. 6.

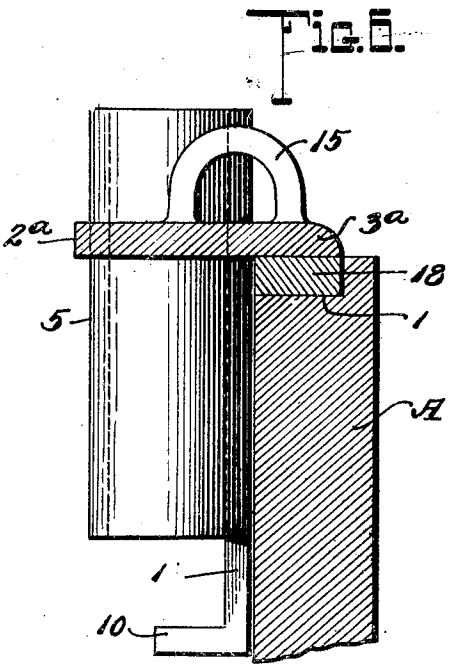


Fig. 9.

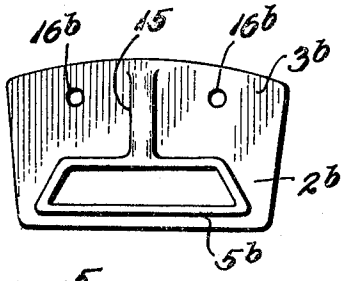
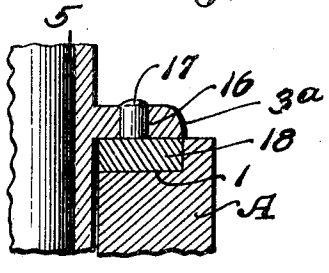


Fig. 7.



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Patented Aug. 3, 1926. 1,594,388

UNITED STATES PATENT OFFICE.

CHARLES L. STUBBS, OF AKRON, OHIO.

METAL-PIG HOLDER AND TIMER.

Application filed April 22, 1924. Serial No. 708,301.

The present invention relates to a device for feeding metal pigs to pots containing molten metal for the purpose of replenishing the supply of metal in the pot, and the object of the invention is to provide a device of this character which embodies novel features of construction, whereby the metal pig will be caused to drop gradually into the molten metal so that it will be melted and incorporated therewith without chilling the mass of metal in the pot.

In the operation of linotype machines and like devices molten metal is drawn from the pot as it is required, and it is necessary to replenish the supply of metal from time to time. In some machines it is necessary for the operator to watch the supply of molten metal and drop a cold pig into the pot from time to time as it becomes necessary. This requires attention on the part of the operator and judgment must be exercised in supplying the cold metal to the pot to see that the quantity of cold metal dropped into the pot at one time is not sufficient to chill or freeze the metal in the pot and interfere with the proper feeding of the metal to the machine. Other linotype machines have automatic feeding devices which act automatically to refill the pot as the molten metal is drawn therefrom. Some of the automatic pig feeding devices have clutch mechanisms for advancing a cold pig into the pot as is necessary, while others of the automatic feeding devices provide for melting the pig before it is fed to the pot in order to prevent chilling of the molten metal in the pot. All of these automatic feeding devices are complicated and are open to the objection that they are costly and liable to get out of order.

The pig feeding device of the present invention is simple and inexpensive in its construction and has no complicated parts to get out of order and cause trouble. The cold metal is fed gradually to the molten metal so that the latter is not unduly chilled, and a signal is given to the operator when the level of the molten metal in the pot drops to such a point that it is necessary to supply additional metal.

While certain particular forms and embodiments of the invention are shown and described in this application for illustrative purposes, it will be understood that many modifications and changes can be made in the details of construction without departing from the spirit of the invention. For a full understanding of the invention reference therefore, is to be had to the following description and accompanying drawings, in which,

Figure 1 is a top plan view of a metal pot having a pig feeding device which is constructed in accordance with the invention attached thereto.

Figure 2 is a front elevation of the signal operating and metal pig feeding device, together with a fragmentary portion of the pot to which the device is attached.

Figure 3 is a side elevation thereof.

Figure 4 is a detail sectional view of the insulated contact member which is mounted upon the stock and arranged for engagement with the float actuated arm.

Figure 5 is a top plan view of a modified form of the invention.

Figure 6 is a vertical sectional view on the line 6—6 of Fig. 5.

Figure 7 is a detail sectional view on the line 7—7 of Fig. 5.

Figure 8 is a perspective view of the supporting plate which is permanently secured to the edge of the pot and detachably engages the pig feeding device.

Figure 9 is a top plan view of a further modified form of the pig feeding device.

Figure 10 is a side view of the construction shown by Fig. 9, portions being broken away and shown in section.

Corresponding and like parts are referred to in the following description and indicated on all of the views of the drawings by like reference characters.

For the purpose of illustration the invention is shown as applied to a metal pot A of a type which is commonly used in the construction of linotype machines and the like. The upper edge of the pot is rabbeted at 1 in the usual manner, and this rabbeted portion may be utilized to provide a seat for the metal pig feeding device of the present invention. In the form of the invention illustrated by Figures 1, 2 and 3 the stock or body portion 2 of the device is provided at one edge thereof with a flange portion 3 which is adapted to be fitted in the rabbeted portion 1 at the upper edge of the pot, and secured in position by suitable fastening members such as the screws 4. This stock 2 overhangs the interior of the pot in a cantilever relation and is provided with an upright pig guiding tube or magazine 5, and also with a tubular guide 6 for the stem 7

of a float 8. The pig guiding sleeve 5 may extend both above and below the stock 2 and is of a suitable size and shape to loosely receive a pig 9 of either standard or special size, as may be found preferable. A foot 10 is arranged below the lower end of the pig magazine 5, being carried by an extension or arm 11 which projects from the lower end of the pig receiving magazine. The lower end of the pig will rest upon this foot 10 and be supported thereby, so that the pig will be prevented from dropping bodily into the pot with the possible result of chilling the contents thereof. The lower end of the pig, however will be submerged in the molten metal and as it is melted it will mix with and become incorporated in the body of the molten metal, with the result that the cold pig will feed downwardly through the guide or magazine and cause another part thereof to be submerged in the molten metal. The cold pig will thus be gradually melted and incorporated in the molten metal of the pot and this will be accomplished without any sudden chilling of the mass of molten metal in the pot. This avoids the sudden dropping of a cold pig into the metal pot at one time which is objectionable for the reason that it sometimes results in chilling the metal or lowering the temperature thereof to such an extent as to prevent the proper feeding of the molten metal to the linotype machine.

The float 8 may be in the form of a hollow metal ball and rests upon the surface of the molten metal. The stem 7 of the float slides freely within the tubular guide 6, and both the stem and tubular guide are preferably square or polygonal in cross section so that the stem is held against rotation although it is free to rise and fall. The upper end of the stem is provided with a lateral arm 12 and when the level of the molten liquid reaches a certain point the lateral arm is adapted to engage a contact member and close an electric circuit to operate a signal such as a bell or light. As shown on the drawing the arm 12 will engage a contact member 13 when the surface level of the molten metal in the pot has dropped to the point where it is necessary to supply some additional metal thereto, said level being indicated by the dotted line B on Figs. 2 and 3, while the normal level of the molten metal being indicated at C.

An electric signal is indicated diagrammatically at S and may be of any suitable and conventional character such as a bell or an electric light. This signal is interposed in an electric circuit E having a battery F or some equivalent device as a source of supply for the electric current. One of the terminals of the electric circuit is connected to the pot A, while the other terminal of the circuit is connected to the contact member 13. This contact member 13 may be in the form of a screw which is threaded in an insulating bushing 14, said bushing being properly seated in a suitable opening formed in the flange portion 3 of the stock. The contact member is thus insulated from the rest of the mechanism and the electric circuit is open until the lateral arm 12 engages the contact member. The circuit is then closed and the signal S operated. This notifies the operator that it is time to replenish the supply of metal in the pot and he can then place a cold pig in the tubular magazine 5. This cold pig will be gradually melted and incorporated with the metal contents of the pot, and as the level of the molten metal rises the float 8 will be elevated and lift the lateral arm 12 away from the contact member 13 with the result that the circuit will be opened and the signal S rendered inoperative. It will thus be obvious that in the operation of the device the signal gives timely warning to the linotype operator whenever the level of the molten metal drops to a certain point and it is then merely necessary for the operator to insert a cold pig in the magazine of the pig feeding device. There is no complicated mechanism to get out of order and cause vexatious delays.

A slight modification is shown by Figs. 5 to 8 inclusive, in which the device has a quickly detachably connection with the metal pot and can be readily placed in position thereon or removed therefrom without the necessity of unscrewing or loosening any special fastening members. The stock 2^a is provided with a looped finger piece 15 by means of which it can be conveniently grasped when placing it in position or removing it therefrom. The flange portion 3^a of the stock is provided with a pair of openings 16 and these openings are adapted to engage pins 17 upon a strip or plate 18 which is permanently secured in the rabbeted upper edge portion 1 of the metal pot A by suitable fastening members such as the screws 19. The pins 17 fit in the openings 16 of the flanged portion of the stock and cooperate therewith to support the stock from one edge thereof in an overhanging or cantilever relation to the pot. It will be obvious, however, that the device can be readily lifted out of position and disengaged from the pins 17 whenever it is desired to remove the attachment from the metal pot. The pig receiving magazine or sleeve 5^a corresponds exactly with the magazine of the previous form of the invention, and the signal operating means is identical with that previously described. This form of the invention has the advantage of enabling the attachment to be readily applied to the metal pot or removed therefrom and the attachment can be used interchangeably upon the metal pots of a number of linotype ma-

chines, it being merely necessary to apply one of the plates 18 to each of the metal pots.

A further modification is shown by Figs. 9 and 10, in which the stock 2^b is provided with a pig receiving sleeve or magazine 5^b which has an elongated formation and is shaped to receive a flat pig instead of a cylindrical pig. The flanged portion 3^b of the stock is formed with openings 16^b which are adapted to engage the pins 17 of the plate 18 and a suitable finger piece 15^b is provided for convenience in handling the attachment. The signal operating mechanism is omitted from this form of the invention, so that it will be necessary for the operator to feed a cold pig to the pot whenever it is necessary and without depending upon a signal to warn him that the surface level of the molten metal has dropped to such a point that some replenishment of the metal supply is necessary.

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

1. A pig feeding attachment for a conventional metal containing pot, including a pin member permanently carried by an edge portion of the pot, a stock member adapted to be applied to the mouth of the pot so that it overhangs the interior of the pot in a cantilever relation, one end of the stock member being formed with an opening which is adapted to detachably receive the pin member whereby the stock can be quickly placed in position or removed therefrom, and a pig feeding mechanism carried by the stock.

2. A pig feeding attachment for a conventional metal containing pot, including a pair of complemental plates having a quickly detachable and interlocking connection with each other, means for securing one of the complemental plates to the metal containing pot, and a pig feeding mechanism carried by the other complemental plate and adapted to be detachably supported in an overhanging position over the pot, the interlocking connection between the plates enabling the pig feeding mechanism to be quickly placed in position or removed therefrom.

3. A pig feeding attachment for a conventional metal containing pot, including a stock having a flange portion which is adapted to engage an edge of the pot, means for detachably securing the said flange to the edge of the pot to support the stock as a cantilever in an overhanging relation to the interior of the pot, and a pig feeding mechanism carried by the stock.

4. A pig feeding attachment for a conventional metal containing pot, including a stock formed at one side thereof with a flange, means for detachably securing the flange to an edge of the pot to support the stock as a cantilever in an overhanging relation over the pot, a pig feeding mechanism carried by the overhanging portion of the stock, a stem slidably mounted upon the stock, a float at the lower end of the stem, and signal actuating means adapted to be actuated by the stem.

5. A pig feeding attachment for a conventional metal containing pot, comprising a plurality of upright pins permanently carried by the pot, a stock provided with openings adapted to detachably receive the pins and to cooperate therewith to position the stock as a cantilever in an overhanging relation to the interior of the pot and prevent either lateral or vertical swinging of the free end thereof, and a pig feeding magazine carried by the overhanging end of the stock.

6. A pig feeding attachment for a conventional metal containing pot, including an elongated strip adapted to be permanently secured at the rabbeted edge of the pot, a plurality of pins projecting upwardly from the strip, a stock provided at one edge thereof with a flange portion having openings therein adapted to receive the pins for holding the stock removably in position with the body portion thereof overhanging the interior of the pot in a cantilever position, and a pig feeding magazine carried by the overhanging end of the stock.

In testimony whereof I affix my signature.

CHARLES L. STUBBS.