Jan. 12, 1937. P. D. KENDALL 2,067,609

INGOT FEEDER FOR TYPE CASTING MACHINES

Original Filed May 1, 1933

Fig. 1.

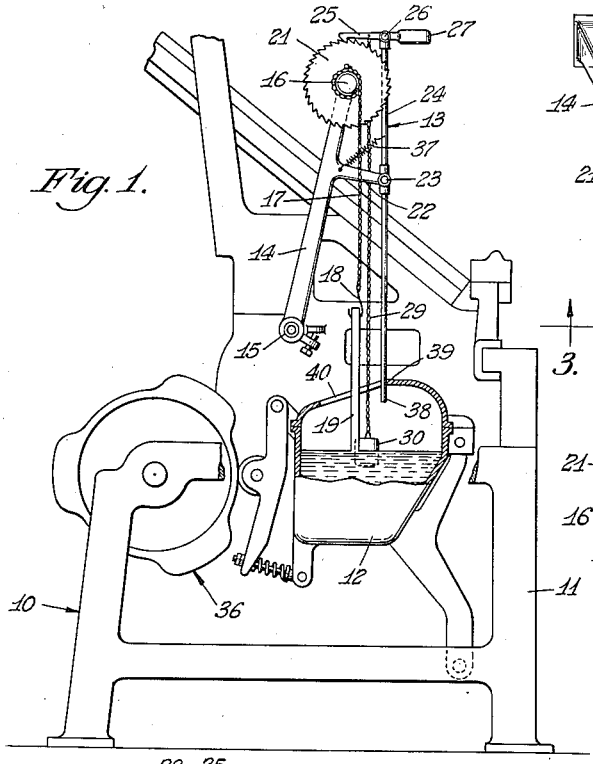
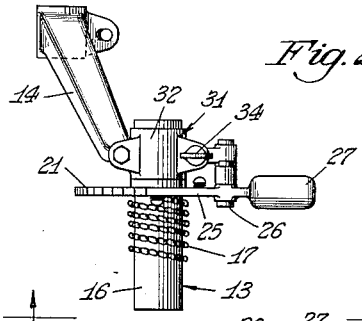


Fig. 2.



3. 3.

Fig. 3.

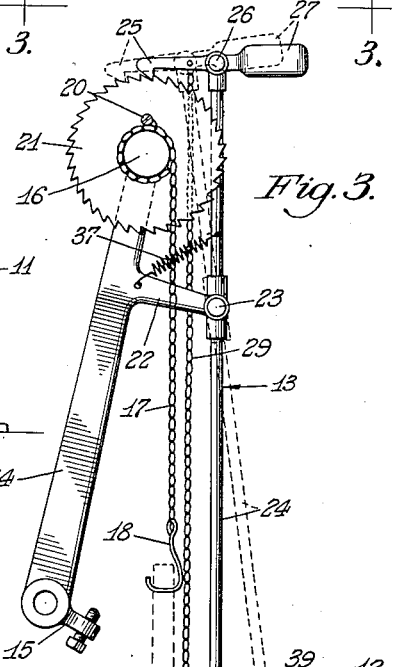


Fig. 4.

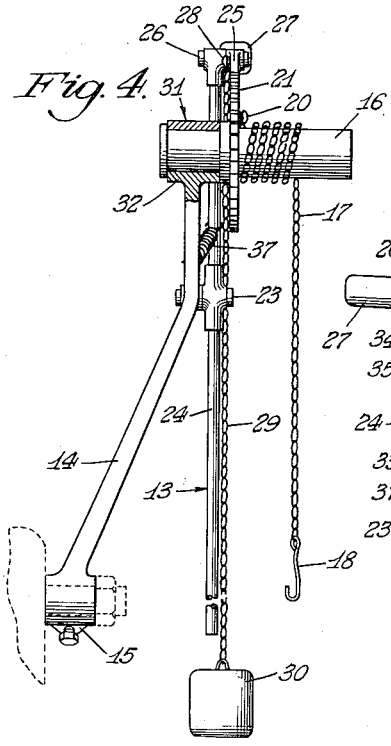
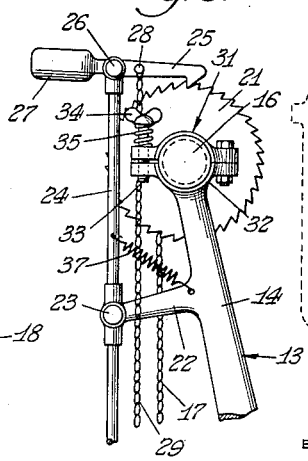
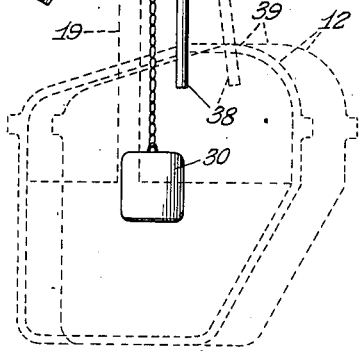


Fig. 5.





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UNITED STATES PATENT OFFICE

2,067,609

INGOT FEEDER FOR TYPE CASTING MACHINES

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Application May 1, 1933, Serial No. 668,848
Renewed June 18, 1934

4 Claims. (Cl. 22—80)

This invention relates to certain novel improvements in an ingot feeder for type casting machines.

Objects of this invention are: to provide a small, simple, and inexpensive device for feeding pigs or ingots of type metal into the metal pots of a type casting machine; to provide a feeding device which will feed the ingot very gradually into the pot; to provide a feeder which is operated by a motion of the metal pot as the latter returns to initial position after the line casting operation; and to provide a device which can be readily attached in a few minutes to the frame of a type casting machine.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing, showing the preferred form of construction and in which:

Fig. 1 is a side elevational view of the new feeding device applied to a type casting machine;

Fig. 2 is a top plan view of the feeding device;

Fig. 3 is a side elevational view of the feeding device detached from the type casting machine;

Fig. 4 is an end elevational view of the feeding device; and

Fig. 5 is a fragmentary side elevational view of the same.

In the drawing a type casting machine of conventional design is generally indicated at 10 and includes a frame 11 upon which is pivotally mounted a melting pot 12.

The new ingot feeding device is generally indicated at 13, and includes a supporting arm 14 that is detachably attached, as at 15, to the frame 11 of the type casting machine 10.

At its upper end the arm 14 rotatably supports a shaft 16 around which is wound a flexible element in the form of a chain 17. This chain 17 has at its lower end means, in the form of a hook 18, for supporting an ingot or pig 19 of fusible type metal in the pot 12, (Fig. 1). The upper end of the chain 17 is attached, as at 20, (Fig. 4) to a ratchet 21 which is fixedly mounted on the rotatable shaft 16.

Projecting from the support 14 is an arm 22. Pivotally mounted on the arm 22 between its ends, as at 23, is a ratchet release rod 24. A dog 25 is pivotally mounted, between its ends, on the upper end portion of the rod 24. One end of this dog 25 operatively engages the ratchet 21 and the other end thereof is counterweighted, as at 27.

Having one end attached to the dog 25, as at 28, and depending therefrom is a flexible element in the form of a chain 29. The lower end of the chain 29 extends into the pot 12 through the open top thereof, and at its lower end the chain carries a float 30 that dips into the molten metal in the pot 12.

The weight of the ingot 19, acting through the chain 17, tends to rotate the shaft 16 and ratchet 21 (clockwise, Figs. 1 and 3, counterclockwise, Fig. 5) but this rotation of the ratchet 21 and shaft 16 is resisted by an adjustable braking or clamping means on the shaft 16 and generally indicated at 31; said braking or clamping means 31 taking the form of a pair of collars 32, in which the shaft 16 is mounted; and said means 31 also including an adjustable means (bolt 33 and wing nut 34 and spring 35 thereon, Fig. 5) for varying the gripping or braking action of the collars 32 upon the shaft 16.

As the level of the metal in the pot 12 and the float 30 fall, during the line casting operation, the pot 12 is pivoted (clockwise, Fig. 1) by the cam mechanism generally indicated at 36, and during this motion of pot 12 a spring 37 urges the lower end portion 38 of the rod 24, which dips into the pot 12, into engagement with the top wall 39 of the latter (counterclockwise, Figs. 1 and 3). This movement of rod 24 moves the dog 25 (counterclockwise, Figs. 1 and 3) into dotted line position, Fig. 3.

When a line casting operation is completed the pot 12 starts back to its initial position, pivoting counterclockwise, Figs. 1 and 3. During this return movement of the melting pot 12, the top wall 39 thereof engages the lower end portion 38 of the rod 24 and pivots the latter and the dog 25 (clockwise, Figs. 1 and 3, counterclockwise, Fig. 5), against the action of the spring 37, into full line position (Figs. 1 and 3), thereby rotating the ratchet 21 and shaft 16 (clockwise, Figs. 1 and 3), against the action of the braking means 31—32—33—34—35. This movement of the ratchet 21 and shaft 16 unwinds a length of the chain 17 off the shaft 16 and lowers the ingot 19 into the pot 12 for commencement of the next successive line casting operation. As the next successive line-casting operation begins, the pot 12 is again pivoted (clockwise, Fig. 1), the float 30 falls with level of the molten metal in the pot 12, thereby holding the dog 25 in engagement with the ratchet 21 against the tendency of the counterweight 27; while the spring 37 urges the rod 24 (counterclockwise, Figs. 1 and 3), to engage the lower end portion 28 of the rod 24 with the top

wall 39 of the pot 12; and the braking means 31 overcomes the effect of gravity on the ingot 19 and keeps the same at the proper level.

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

1. In combination with a type casting machine which includes a frame, a movably mounted melting pot having an open top, and means for moving the said pot during the line casting operation, a device for feeding fusible pigs or ingots to the pot, comprising a rotatable shaft and means for supporting the same on the frame, a ratchet fixedly mounted on the shaft, a flexible ingot-supporting element wound about the shaft, said flexible element having one end attached to the ratchet and having its lower end free to suspend an ingot in the pot through the said open top thereof, a ratchet release rod pivotally mounted between its ends for movement in a vertical plane and having its lower end portion extending into said pot through the open top thereof, a dog pivotally mounted between its ends on the upper end of said rod for engagement with said ratchet, a flexible element attached at its upper end to said dog and projecting at its lower end into the pot through the open top of the latter, a float attached to the lower end of the second-named flexible element urging said dog into engagement with said ratchet, and a spring attached to said rod urging the lower end portion of the latter into engagement with the top walls of the pot, said spring tending to rotate said rod in a direction opposite to the direction that the said pot moves during the line casting operation.

2. A device for feeding pigs or ingots into the melting pot of a type casting machine, said pot having an open top, comprising a rotatable shaft, means for supporting said shaft, a ratchet fast on the shaft, a flexible ingot-supporting element having a length thereof wound about the shaft and having one end thereof attached to the ratchet, a ratchet release rod pivotally mounted between its ends for movement in a vertical plane, means for supporting said rod, said rod having its lower end portion arranged for operative engagement with said pot during the return movement of the pot after the line casting operation, a dog pivotally mounted between its ends on the upper end of said rod for engagement with said ratchet, a flexible float-supporting element attached at its upper end to said dog and projecting at its lower end into said pot through the open top of the latter, a float carried by the lower end of said second-named flexible element in the pot urging the dog into engagement with the ratchet, and a spring attached to said ratchet release rod between said dog and the pivotal mounting of said rod urging the said lower end portion of the rod into operative engagement with said pot.

3. A device for feeding pigs or ingots into the melting pot of a type casting machine, said pot having an open top, comprising a rotatable shaft, means for supporting said shaft, a ratchet fast on the shaft, a flexible ingot-supporting element having a length thereof wound about the shaft and having one end thereof attached to the ratchet, a ratchet release rod pivotally mounted between its ends for movement in a vertical plane, means for supporting said rod, said rod having its lower end portion arranged for operative engagement with the top wall of said pot during the return movement of the pot after the line casting operation, a dog pivotally mounted between its ends on the upper end of said rod for engagement with said ratchet, a flexible float-supporting element attached at its upper end to said dog and projecting at its lower end into said pot through the open top of the latter, a float carried by the lower end of said second-named flexible element in the pot urging the dog into engagement with the ratchet, and a spring attached to said ratchet release rod between said dog and the pivotal mounting of said rod urging the said lower end portion of the rod into operative engagement with the top wall of said pot.

4. A device for feeding pigs or ingots into the melting pot of a type casting machine, said pot having an open top, comprising a rotatable shaft, means for supporting said shaft, a ratchet fast on the shaft, a flexible ingot-supporting element having a length thereof wound about the shaft and having one end thereof attached to the ratchet, a ratchet release rod pivotally mounted between its ends for movement in a vertical plane, means for supporting said rod, said rod having its lower end portion projecting into said pot through the open top of the latter for operative engagement with the top wall of the pot during the return movement of the pot after the line casting operation, a dog pivotally mounted between its ends on the upper end of said rod for engagement with said ratchet, a flexible float-supporting element attached at its upper end to said dog and projecting at its lower end into said pot through the open top of the latter, a float carried by the lower end of said second-named flexible element in the pot urging the dog into engagement with the ratchet, and a spring attached to said ratchet release rod between said dog and the pivotal mounting of said rod urging the said lower end portion of the rod into operative engagement with the top wall of the pot during the return movement of the latter after the line casting operations.

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