

No. 813,614.

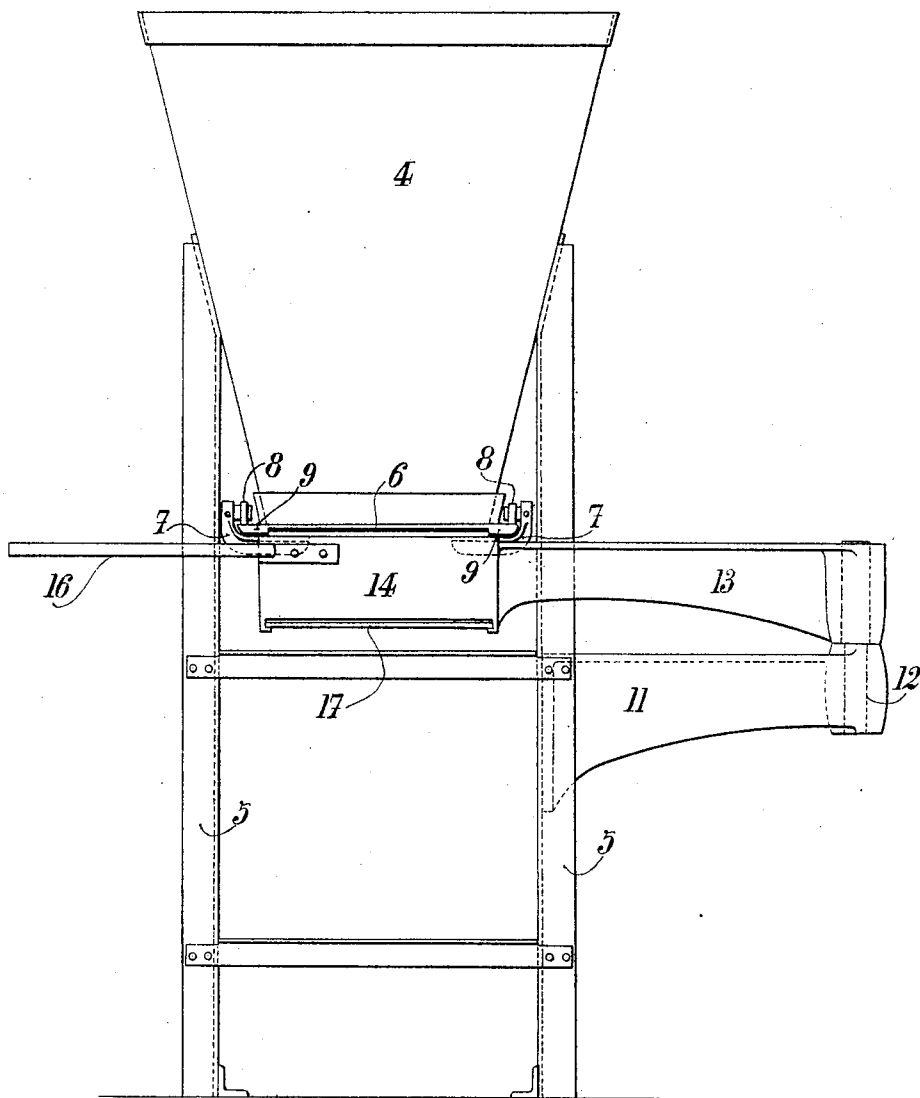
PATENTED FEB. 27, 1906.

P. BONVILLAIN.
MOLD CHARGING APPARATUS.

APPLICATION FILED APR. 24, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
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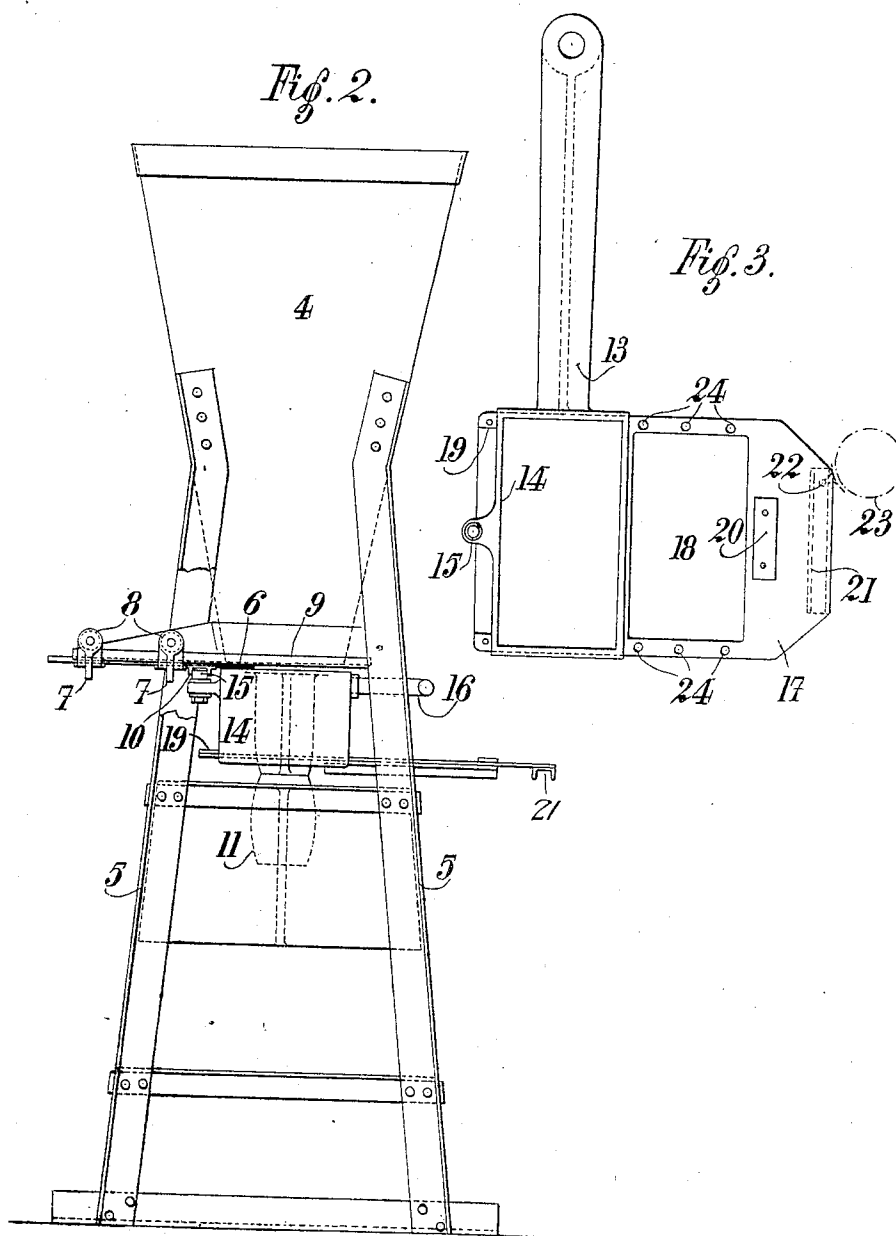
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UNITED STATES PATENT OFFICE.

PHILIBERT BONVILLAIN, OF PARIS, FRANCE.

MOLD-CHARGING APPARATUS.

No. 813,614.

Specification of Letters Patent.

Patented Feb. 27, 1906.

Application filed April 24, 1905. Serial No. 267,055.

To all whom it may concern:

Be it known that I, PHILIBERT BONVILLAIN, a citizen of the Republic of France, residing at Paris, France, have invented new and useful Improvements in or Relating to Mold-Charging Apparatus, of which the following is a specification.

This invention relates to mold-charging apparatus intended to be used in conjunction with molding-machines, so as to supply them quickly with the exact quantity of sand required for each molding operation and this very quickly and without any other hand-labor except such as is required in order to bring a box containing a certain supply of sand and pivoted upon the frame of the apparatus into position with relation to the machine and then to bring it back under a hopper upon the distributor.

An apparatus according to this invention is illustrated, by way of example, in the accompanying drawings, in which—

Figure 1 is a front elevation, and Fig. 2 a side elevation; Fig. 3, a plan of the rotating box.

The hopper 4 of the apparatus is mounted on a frame or standards 5, having feet, and its bottom 6 is movable. To this end under the said bottom and secured to each side thereof are two brackets or supports 7, bent up vertically and provided with two rollers 8, capable of traveling on the horizontal flanges 9 of the hopper. Under the movable bottom is secured an iron bar 10 of Ω -shaped section—that is to say, it is secured with its web or connecting portion to the bottom of the hopper, and its vertical flanges are directed downward.

The frame 5 of the apparatus is provided with an arm or bracket 11, to which is secured a pin 12, about which is pivoted another arm 13, carrying at its free end a box 14, which can be brought exactly under the bottom of the hopper and is of exactly the same dimensions. This box is provided at its back face with a roller 15, which can engage between the flanges of the bar 10, and on its front face with an operating-handle 16. The bottom 17 of the said box is a sliding one, and a certain portion of it consists of an opening 18. To its upper face are riveted flat iron stops 19 and 20, which limit its travel in either direction, and a bar 21, of Ω -shaped section, similar to the bar 10, with which a roller 22 can engage, which roller is arranged at a suitable point upon the molding-ma-

chine in connection with which the distributor is to be used—for instance, on one of the columns 23 of the said machine, as shown diagrammatically in Fig. 3.

When it is desired to supply sand to the flask of a molding-machine by the distributing apparatus, the handle 16 is grasped and the movable part thereby turned around the axis 12. During this movement the roller 15 of the box 14 is engaged with the flanges of the iron bar 10, fixed under the movable base 6 of the hopper 4, displacing in its movement the base 6, of which the rollers 8 turn upon the flanges 9, and this base gradually closes the lower opening of the hopper 4 to check the sand contained in the hopper; but the roller 15 describes an arc of a circle around the axis 12, while the base 6 moves in a straight line, in consequence of which there is a point where the roller 15 leaves the bar 10 and the base 6 no longer moves. The length of the bar 10 is determined, so that at the instant this point is reached the base 6 completely closes the hopper 4. The box 14 continues its movement of rotation around the axis 12, and the flanged bar by one of its extremities engages the roller 22, and continuing this rotation the base 17 of the box, retained by the roller 22, remains stationary; but the box 14 slides upon it to the point where it is arrested by the stop 20. Then the opening 18 of the base 17 is located exactly under the box 14, from which the contained sand is distributed in the flask of the molding-machine. The handle 16 is then grasped to return the box 14 to its former position under the hopper 4; but at the end of this movement the roller 22 engages the flanges of the bar 21, retracting the base 17, which recloses the box. Then the bar 21 leaves the roller 22, and the box is replaced under the hopper, so that the roller 15 contacts with the bar 10 to retract the base 6 and allow the sand to refill the box 14, which is then ready to receive another charge. The fixed stops 19 and 20 upon the base 17 on abutting against the opposite walls of the box limit the travel of this base in either direction.

24 represents holes in which pins may be introduced for limiting the movement of the bottom 17 of the box 14.

By means of this apparatus sand is therefore brought to the mold without any operation other than that of the handle 16, and the supply of sand required for each operation is

regulated in accordance with the size of the mold.

5 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

10 In a mold-charging apparatus the combination with a hopper for sand having tracks upon two of its opposite lower edges, of a movable bottom under the said hopper, rollers applied upon the bottom and turning upon the said tracks, flanges fixed under the said movable bottom, a box mounted upon a fixed axis for turning under the said hopper,
15 a stop fixed upon one of the sides of this box

for engaging between the flanges on the said movable bottom of the hopper, a bottom movable in ways on the said box, and parallel flanges fixed under the last-named movable bottom for engaging with a stop arranged under the molding-machine which is being charged by the apparatus, substantially as described and for the purpose specified. 20

In testimony whereof I have affixed my signature in presence of two subscribing witnesses. 25

PHILIBERT BONVILLAIN.

Witnesses:

HENRI VIGNAUD,
ARMAND ROBIN.