Aug. 19, 1924. 1,505,412

J. NEWMAN

CASTING MACHINE

Filed May 9, 1922

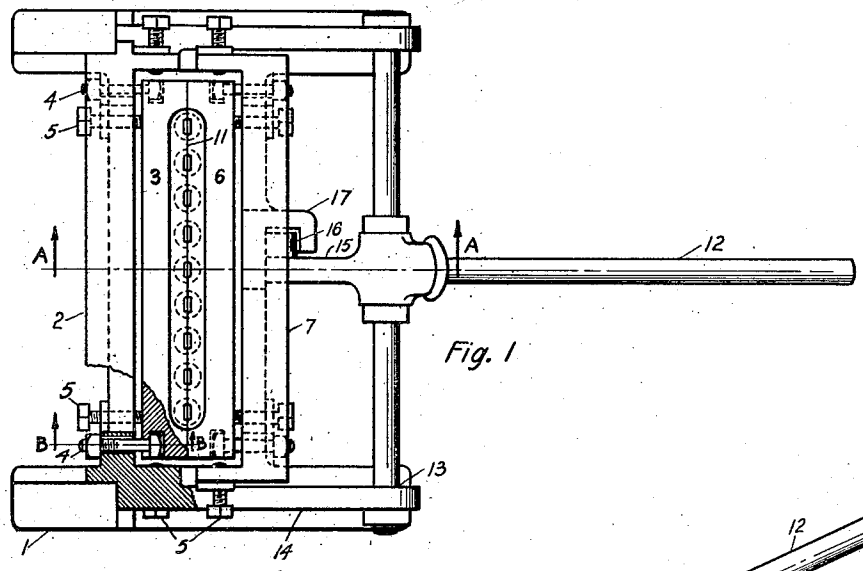


Fig. 1

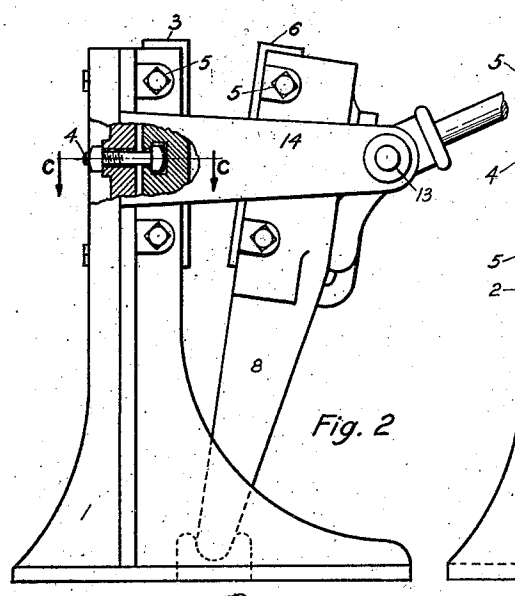


Fig. 2

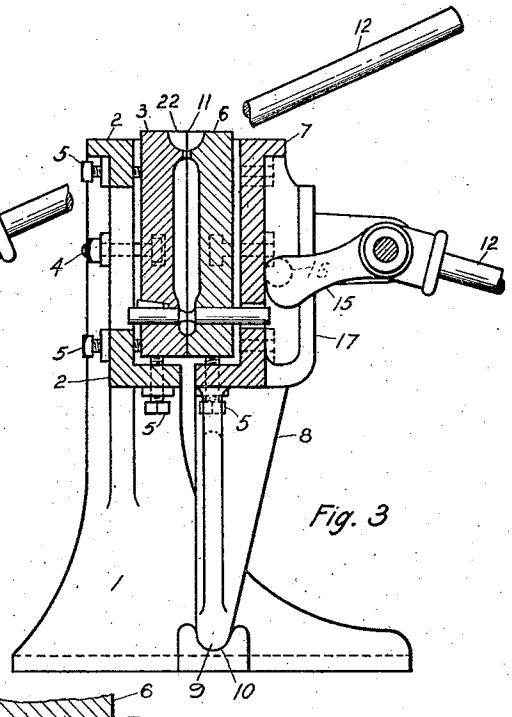


Fig. 3

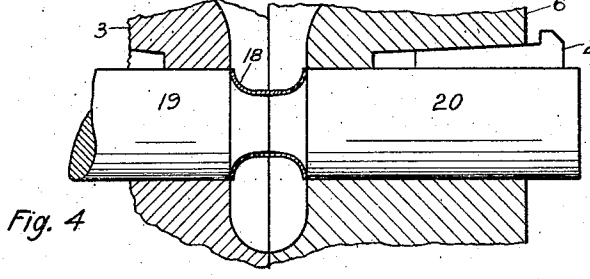


Fig. 4

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UNITED STATES PATENT OFFICE.

JOHN NEWMAN, OF OAKLAND, CALIFORNIA.

CASTING MACHINE.

Application filed May 9, 1922. Serial No. 559,580.

To all whom it may concern:

Be it known that I, JOHN NEWMAN, a citizen of the United States, residing at 103 Clay Street, in the city of Oakland, county of Alameda, and State of California, have invented a new and useful Casting Machine, of which the following is a specification.

This invention relates in general to casting machines, and in particular to a casting apparatus in which molds are held and operated mechanically, before, during and after the pouring of the casting metal.

The principal objects of my invention are to make simple castings in great numbers very quickly and cheaply, and without any actual handling of the molds. Another object is to make the molds such, that the use of sand therewith may be dispensed with. And another object is to furnish chilled castings with the same apparatus when desired.

To accomplish the above objects my machine includes a two-piece frame in which is supported the two halves of a bipartite mold and by which the same are opened and closed, means for performing those operations, means for adjusting and securing the halves of the mold in position, and means for so opening the molds after the casting operation, that the contents will be loosened therein and drop out into the open space between the frame legs.

Other features of the invention will be set forth hereinafter, in connection with the accompanying one sheet of drawings, in which I have illustrated the invention as applied to a specific purpose, to wit: the casting of sash weights.

Figure 1 is a plan of the machine closed, one corner of the figure being in section to show interior construction, the section being taken on the line C—C of Figure 2.

Figure 2 is a side elevation of the machine open, a section taken on line B—B of Figure 1 being broken away.

Figure 3 is a sectional elevation of the machine, the section being taken on line A—A of Figure 1, the lever, arm and collar being shown in full.

Figure 4 is a partial cross-section through a portion of an individual mold on a larger scale than the other figures, showing the means for forming the eye of a sash weight, and the means for supporting a ferrule for that purpose.

In the Figures; An upstanding base 1 is provided at its upper part with an L-shaped skeleton frame or flask 2 shown clearly in Figure 3, and in which is supported the half mold 3, made in this instance of chilled cast iron, the frame being skeletonized to facilitate the circulation of air around the mold for cooling purposes. The half mold 3 is supported in the frame 2 and out of contact therewith, by the bolts 4 and 5. The bolts 4 are in the nature of square-headed machine bolts engaging T-sockets in the body of the mold, and projecting outward through the frame 2, where they may be engaged by nuts, as shown, and by which the mold is yieldably held to the frame 2 against tap bolts 5, tapped through solid parts of frame 2, each bolt having its end bearing against the exterior of the mold.

The second half 6 of the mold is similarly mounted in a similar L-shaped frame 7. This frame has a downward extending arm 8 at each end, terminating in a rounded extremity 9 resting in a socket 10, a part of the base 1. The members 9 and 10 are eccentric to, or out of line with the parting or meeting faces 11 of the molds, the function of which is to give the mold 6 a slight movement upward when opened, which loosens the casting and facilitates its dropping out of the mold.

The final adjustment of the molds 3 and 6 in the frames 2 and 7, for aligning and registering their meeting faces 11, is accomplished by the tap bolts 5 adapted to bear against the sides, ends and bottom of the molds. After the molds are positioned, the machine bolts 4 are tightened and the four tap bolts on each end of the machine are then backed away as shown in Figure 1. This construction affords uniform expansion in all directions without any undue stresses acting in the mold or frame members.

The half 6 of the mold and its contiguous parts, is moved toward and from the half 3, as in closing and opening, by a lever 12, pivoted at 13 to arm members 14 provided for that purpose. The short arm 15 of the lever may bear against the outer central surface of frame 7, and may be provided with a stud 16, which engages a hook plate 17, to assist in pulling the mold members apart.

To produce a clean and smooth hole in the weight casting made by the above mechanism, one that will not have any fin or rough-

ness to chafe the cord rove there through eventually, I employ a ferrule 18 of thin metal shown in Figure 4, supported by a two part pin 19 and 20, the pins being preferably made of chilled iron, and secured in place by wedges 21. The inner ends of the pins are shaped to fit the interior of the ferrule.

In operation, the mechanism being in the open position as shown in Figure 2, the ferrules 18 are slipped over the ends of the pins. The handle 12 is then pulled down which closes the molds as shown in Figures 1 and 3. The casting metal is then poured into the gate 22 and fills the individual moulds through the holes shown, the molten metal uniting with the ferrules. When the molds are opened, by a reverse movement of handle 12, the motion imparted to mold member 6, coupled with its additional slight movement upward due to the eccentric position of socket 10, loosens the casting from the mold members and it drops out into the open space between the frame members, where it is easily accessible for raking away.

Having illustrated and described my casting machine in its preferred form, it is to be understood that I do not wish to be limited to the precise construction shown and described, but wish to embrace all variable arrangements and modifications that come within the spirit and scope of the invention as claimed.

I claim:

1. In a casting machine, in combination, a stationary supporting frame and a mold member, a movable supporting frame and mold member, said members being adjustable vertically, longitudinally and laterally with relation to the stationary and movable frame and out of contact therewith by tap bolts, and said members adapted to be rigidly supported in adjusted position by holding bolts tensioned against said tap bolts.

2. In a casting machine, in combination, a supporting frame and stationary mold member, a movable supporting frame and mold member, said members adapted to be vertically, longitudinally and laterally adjusted with relation to each other and to the stationary frame and movable frame by tap bolts, and adapted to be rigidly supported in adjusted position by holding bolts.

3. In a casting machine, mold members in combination with pin members and a ferrule supported by said pin members in the cavity of the mold, said ferrule adapted to become a part of the resulting casting, said mold adapted to open by one of said members moving laterally, and means for causing said lateral movement.

4. A casting machine for sash weights, comprising a stationary frame and mold member, a movable supporting frame and mold member; said members being adjustable vertically, longitudinally and laterally with relation to the stationary and movable frame and out of contact therewith by tap bolts, means for holding said members rigidly in adjusted position; said movable frame and mold member adapted to be manually operated to swing said movable frame and mold member away from the stationary frame and mold member.

5. A casting machine for sash weights comprising a two piece frame, one member of which is stationary and the other movable, a bipartite mold having a plurality of cavities in the form of the converse of a sash weight, each of said frame members supporting an half of said bipartite mold, vertical, longitudinal and lateral adjusting means for said bipartite mold, and means carried by the stationary member to manually operate said movable member and mold to swing said movable member slightly up and away from said stationary member to part the mold.

JOHN NEWMAN.