

D. G. ANDERSON.
CASTING MACHINE.
APPLICATION FILED OCT. 20, 1916.

1,350,352.

Patented Aug. 24, 1920.

2 SHEETS—SHEET 1.

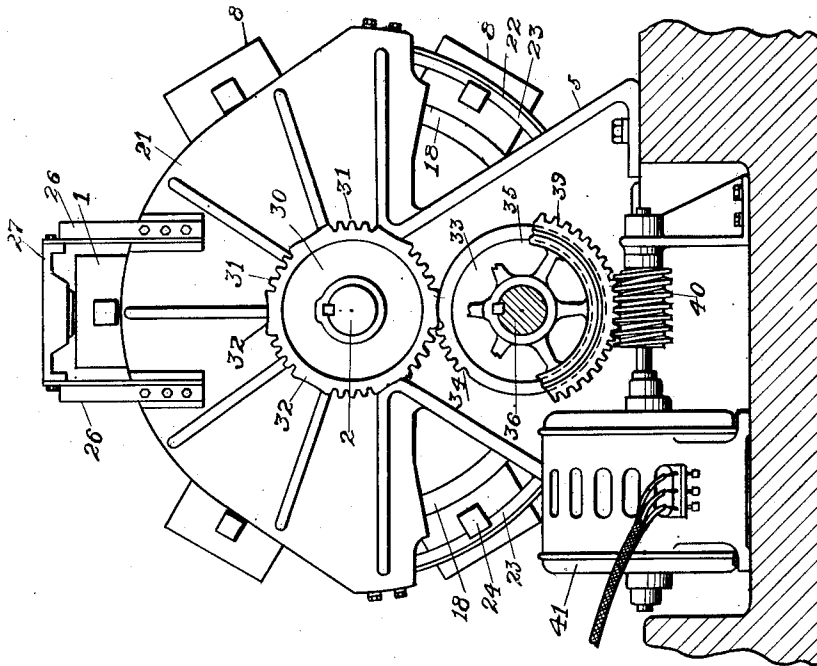


Fig. 1.

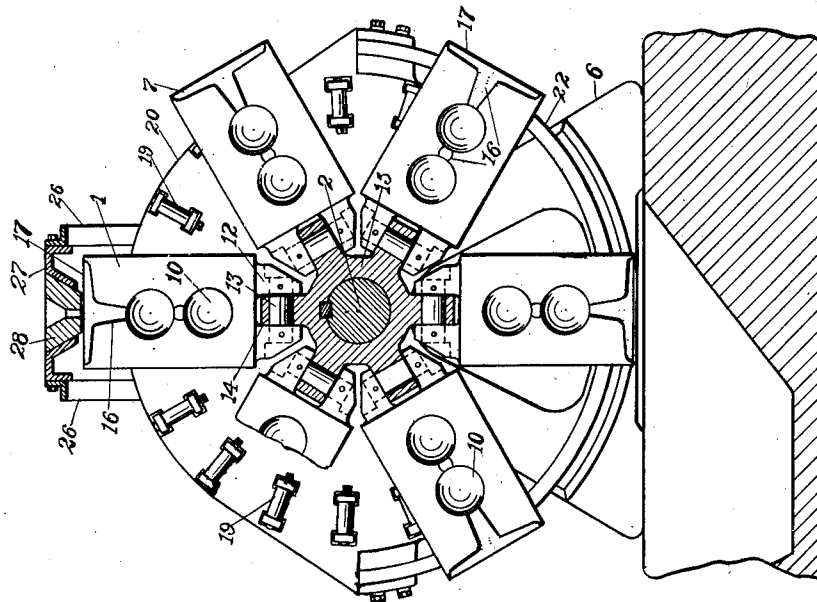


Fig. 2.

WITNESSES:
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Dudley T. Fisher.

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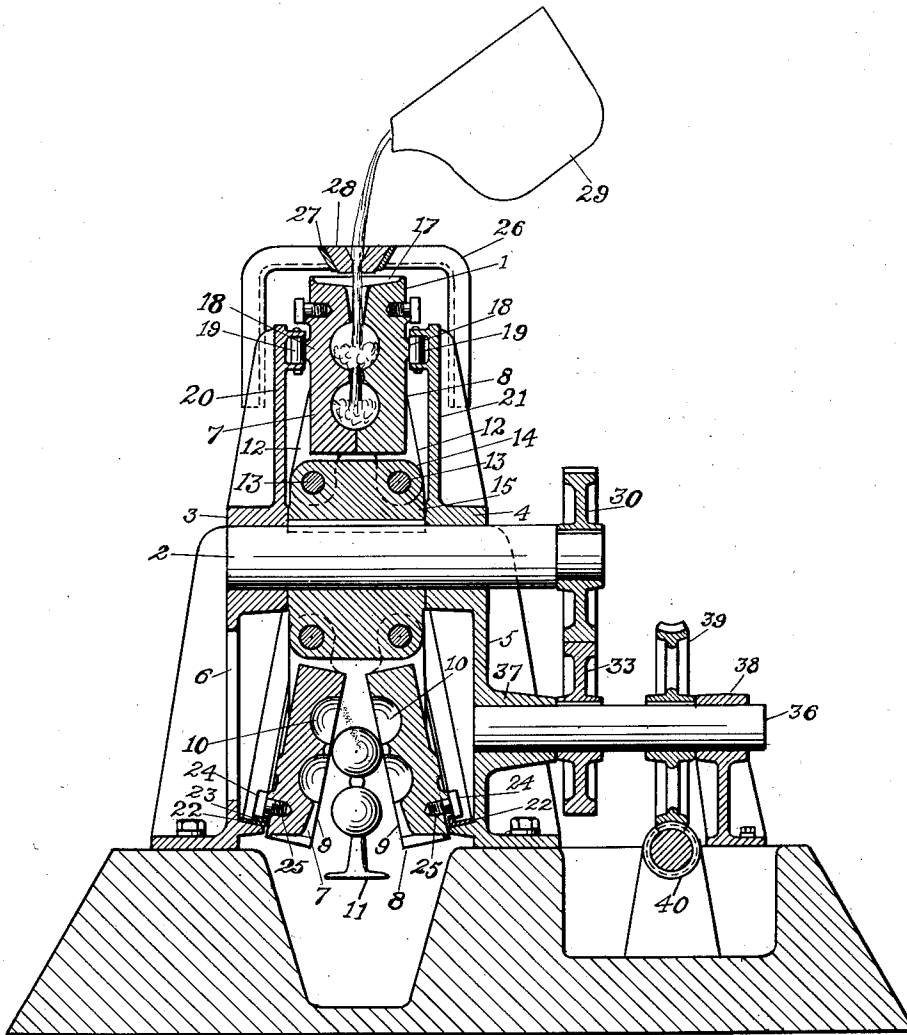


Fig. 3.

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UNITED STATES PATENT OFFICE.

DAVID G. ANDERSON, OF COLUMBUS, OHIO, ASSIGNOR TO THE OHIO MALLEABLE IRON COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

CASTING-MACHINE.

1,350,352.

Specification of Letters Patent. Patented Aug. 24, 1920.

Application filed October 20, 1916. Serial No. 126,755.

To all whom it may concern:

Be it known that I, DAVID G. ANDERSON, a citizen of the United States, residing at Columbus, in the county of Franklin and the State of Ohio, have invented certain new and useful Improvements in Casting-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

10 The present invention relates to certain new and useful improvements in casting machines and particularly to that class of machine wherein the casting is effected in a plurality of movable molds formed of separable sections arranged to be automatically brought together to receive molten metal and separated to discharge the finished casting.

20 The especial object of this invention is to provide improved automatic mechanism to close the mold to receive the molten metal and to open said molds to discharge the solidified castings.

25 A further object is to provide improved intermittent driving devices whereby the molds will be successively moved into position to receive the molten metal and allowed to remain stationary in that position a sufficient time for pouring said metal.

30 The devices by which I attain this object are set forth in the following specifications and illustrated in the accompanying drawing of which

35 Figure 1 is a front elevation of the preferred embodiment of my invention, certain parts being broken away to reveal other parts.

Fig. 2 is a vertical section along the transverse central plane.

40 Fig. 3 is a vertical section taken along the longitudinal central plane.

Like numerals indicate similar parts in the several figures.

45 As shown in the drawings this machine consists essentially of a plurality of molds 1 radially attached to the shaft 2 which is journaled for rotation in the bearings 3 and 4 of the frame castings 5 and 6. The molds 1 are composed of pairs of metallic mold blocks 7 and 8 the adjacent faces 9 of which are accurately finished to adapt them to perfect contact. Formed in the faces 9 of the mold blocks are recesses 10 which constitute the molds into which molten metal may be 55 poured to form the castings 11. The mold

blocks 7 and 8 are provided on their inner ends with hinge lugs 12 to which are attached hinge pins 13 extending transversely of the shaft 2. The hinge pins 13 are rotatably supported in lugs 14 formed on a hub 15 keyed to the shaft 2. Gates 16 extend from the recesses 10 outwardly and are expanded at their outer ends to form pouring basins 17 to receive the metal as it is poured into the molds. Formed on the backs of the mold blocks 7 and 8 are arcuate bosses 18, concentric with the shaft 2 and adapted to engage the rollers 19 mounted upon the flanges 20 and 21 of the frame casting. These rollers 19 are arranged in semi-circles above the shaft 2 and contact with the bosses 18 throughout the upper half of their path of travel to insure the closure of the molds during that part of their rotation.

75 Attached to the frames 5 and 6 below the horizontal central plane are semi-circular angle bars 22, the flanges 23 of which are adapted to engage the heads 24 of the studs 25, fixed to the mold blocks, as they pass through the lower half of their path of travel. The angle bars 22 diverge downwardly to force the descending mold blocks 7 and 8 apart to allow the solidified casting 11 to drop from the mold, and to force the ascending blocks together to reclose the molds preparatory to receiving a new casting. Attached to the frames 5 and 6 are angle bars 26 which support the funnel 27 in the vertical central planes of the machine above the path of travel of the molds to register with the pouring basins 17. The funnel 27 is provided with a clay lining 28 and serves to receive the molten metal from the pouring ladle 29 and to guide it to the molds 1. In order to insure completely filling the molds, I have provided means to intermittently rotate the shaft 2 to move the molds successively into position under the funnel and to allow them to remain stationary in that position a sufficient time for pouring. This intermittent motion is imparted by a gear 30 fixed to the shaft 2 having groups of teeth 31 alternating with blank spaces 32 and corresponding in number and angular arrangement with the molds 1. The gear 30 is driven by a gear 33 having a single group of gear teeth 34 corresponding with the teeth of a group 31, and a blank rim 35 adapted to sliding contact with 110

the blank spaces 32 of the gear 30. The gear 33 is mounted upon a shaft 36 journaled in suitable bearings 37 and 38 and is driven at a uniform velocity through the worm wheel 39 and worm 40 by a suitable motor 41. As the gear 33 revolves the teeth 34 engage the teeth of the groups 31 to turn the gear 30 through a part of a revolution. When the blank 35 engages any one of the blanks 32 the gear 30 is locked against further rotation until the gear 33 has completed a full rotation when the teeth 34 engage the teeth of the next group 31 to impart another fractional revolution to the gear 30.

By this arrangement of gearing the molds revolve with an intermittent motion, affording an opportunity to pour molten metal into each mold to fill it, and as the molds move from the pouring position at the top of their orbit to the discharging position at its bottom, sufficient time is afforded for the solidification of the metal in the molds before they are opened to allow the castings to drop out.

What I claim is

1. In a casting machine, the combination of a supporting frame, a horizontal shaft journaled in the frame, a spider fixed to the shaft, a plurality of oppositely disposed molds blocks hinged to the spider, molds formed in adjacent faces of the blocks, rollers carried by the frame adapted to engage the mold blocks to close the molds, studs fixed to the mold blocks adapted to engage a flange of the frame to open the molds, and means to rotate the shaft.

2. In a casting machine, the combina-

tion of a supporting frame, a horizontal shaft journaled in the frame, a spider fixed to the shaft, a plurality of oppositely disposed mold blocks hinged to the spider, molds formed in adjacent faces of the blocks, rollers carried by the frame adapted to engage the mold blocks to close the molds, studs fixed to the mold blocks adapted to engage a flange of the frame to open the molds, and means to intermittently rotate the shaft.

3. In a casting machine, the combination with a mold supporting element adapted to move through a fixed orbit, of pairs of oppositely disposed mold blocks hinged to said supporting element, molds formed in adjacent faces of the blocks, rollers at one part of the orbit adapted to engage the mold blocks to close the molds, and flanges at another part of the orbit adapted to engage the mold blocks to open the molds.

4. In a casting machine, the combination with a mold supporting element adapted to intermittent movement through a fixed orbit, of pairs of oppositely disposed mold blocks hinged to the supporting element, molds formed in adjacent faces of the blocks, rollers at one part of the orbit adapted to engage the mold blocks to close the molds, and flanges at another part of the orbit adapted to engage the mold blocks to open the molds.

In testimony whereof I affix my signature, in the presence of two witnesses.

DAVID G. ANDERSON.

Witnesses:

J. M. KITTLE.

H. R. PAUSCH.