

June 12, 1928.

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P. ROSENBERGER

METAL CASTING APPARATUS

Filed Feb. 10, 1927

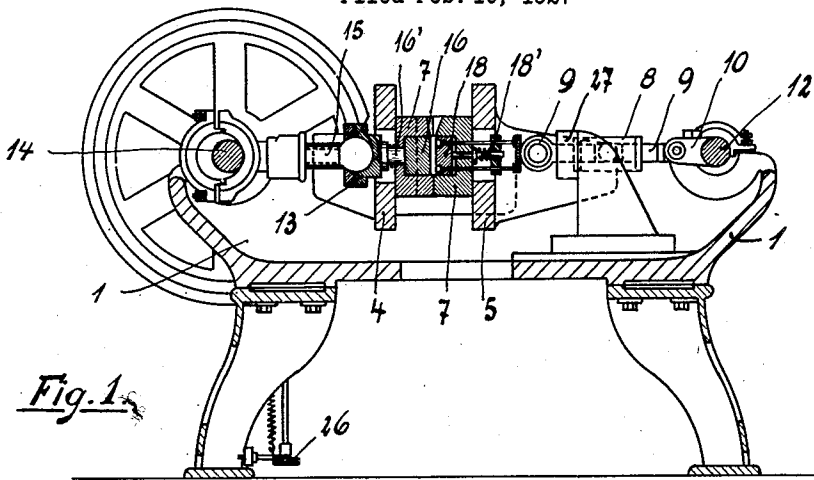


Fig. 1.

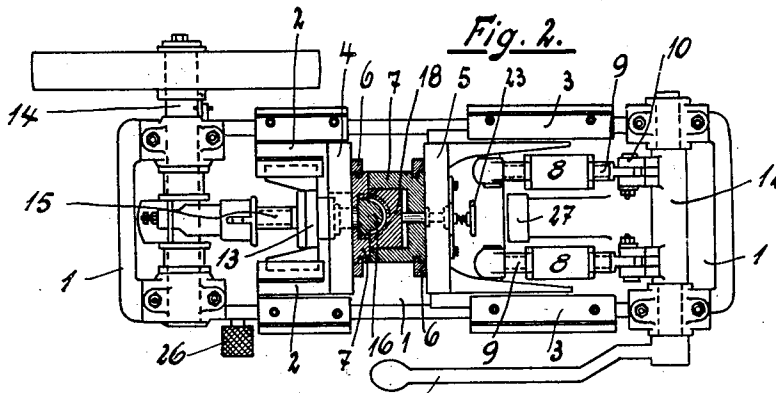


Fig. 2.

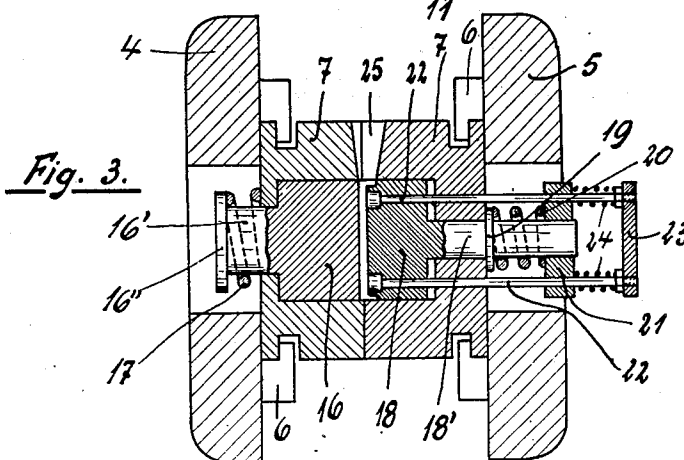


Fig. 3.

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UNITED STATES PATENT OFFICE.

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METAL-CASTING APPARATUS.

Application filed February 10, 1927, Serial No. 167,238, and in Germany February 15, 1926.

The invention relates to apparatus for casting metal, with application of pressure to the casting in the mold.

According to the invention a mold is used, comprising an outer shell and an inner member or members movable within the shell, the inner member or members being moved to apply pressure to the casting. I may arrange that two inner members are first moved collectively, to remove the casting from the gate, whereupon the movement of one of them is stopped and pressure on the other is continued, to compress the casting.

An embodiment of the invention is shown in the accompanying drawing, in which:

Fig. 1 is a vertical section of the machine, and

Fig. 2 a plan view thereof.

Fig. 3 shows the mold in section, to a larger scale.

The frame 1 has guides 2, 3, in or on which two mold holders 4, 5 can be adjusted and fixed. These holders have lugs 6 engaging two mold members 7. These mold members 7 form a kind of shell, and it will be understood that this shell may consist of more than two parts. The holder 5 is connected by two jointed levers 9 to crank arms 10 on a shaft 12. The levers 9 have locking members or turnbuckles 8. The shaft 12 can be rotated by hand, by means of a lever 11 fixed thereto. The holder 4 has an aperture forming a guide-way for a presser 13 actuated by an eccentric on a shaft 14, the presser being connected to a screwed pitman 15 enabling its throw to be regulated. The presser has slidably connected to it, by means of a neck 16' passing through an aperture in one of the mold parts, a member 16, whose head forms part of the mold. A spring 17 is coiled on the neck between a collar 16'' and the mold member 7 into which the neck extends. This spring tends to hold the member 16 against the seat provided therefor in the said mold member 7. The other member 7 has within it a member 18. The latter has a neck 18' passing through an aperture in the member 7. On this neck a spring 20 is coiled between a collar 19 and a bearing 21, which is fixed to the holder 5, and in which the neck can slide. The bearing 21 also serves as a guide for two ejector rods 22, which are slidable in passages in the member 18, and have heads preventing their withdrawal from the said member. The rods 22 are connected to

a crosspiece 23, and between this and the bearing two springs 24 are coiled upon the rods 22. These springs tend to keep the heads of the ejector rods flush with the face of the member 18, as best shown in Fig. 3. In the path of the crosspiece 23, when the holder 5 is moved towards the right of Figs. 1 and 2, there is an abutment 27. The mold has a gate 25.

The shaft 14 is actuatable by treadle mechanism, but it will be understood that alternatively a clutch may be provided, enabling it to be actuated by a motor.

The parts 16 and 18 may, for example, be parts of a mold for casting a portion of a shaft bearing.

With the parts in the position shown in the drawing, metal is poured into the mold through the gate 25. As soon as the metal begins to harden the shaft 14 is actuated, so that the presser 13 urges the part 16 towards the right, together with the casting and the part 18, so that the casting is sheared off the metal in the gate. The part 18 recedes into the part 7 enclosing it, till stopped by the rear or outer portion of this part, and then continued thrust of the presser exerts pressure on the casting. Then the shaft 12 is rotated, to pull the holder 5 towards the right, opening the mold. When the crosspiece 23 strikes the abutment 27 the rods 22 eject the casting.

It will be clear that the numerous means of adjustment provided enable a great variety of castings to be produced in the machine.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a metal casting machine the combination of a mold shell having a gate, two movable mold members within said shell, said shell having a seat for each of said movable members, a spring normally holding one of said movable members away from its seat, a spring normally holding the other movable member against its seat, and mechanism for applying pressure to the last mentioned movable member after casting, whereby said member displaces the casting from the gate and by means of the casting pushes the other movable member against its seat.

2. A mold for use in a metal casting machine, comprising a two-part shell having a gate, and two movable mold members within said shell, each having a neck extending

out of the shell, said shell having seats for said members and apertures for said necks, and the gate being positioned so that it can be covered by one of said movable members
5 by displacing said member from its seat in the shell.

3. In a metal casting machine the combination of a mold shell having a gate, two mold members separately slidable in alignment with each other within said shell, said

shell having a seat for each of said slidable members, resilient means tending to hold one of said slidable members at a distance from its seat, and a presser for urging the other slidable member from its seat past said gate
15 towards said resiliently held member.

In witness whereof I have signed this specification.

PAUL ROSENBERGER.