E. CASTAÑEDA.

DISK CASTING MACHINE.

APPLICATION FILED FEB. 15, 1912.

1,052,651.

Patented Feb. 11, 1913.

Fig. 3.

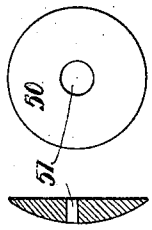


Fig. 1.

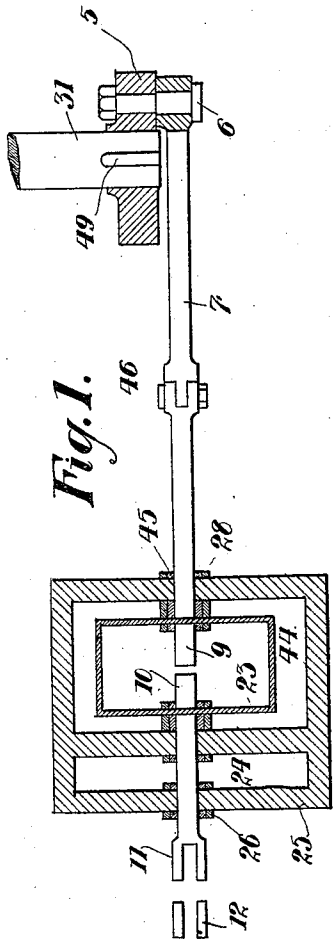
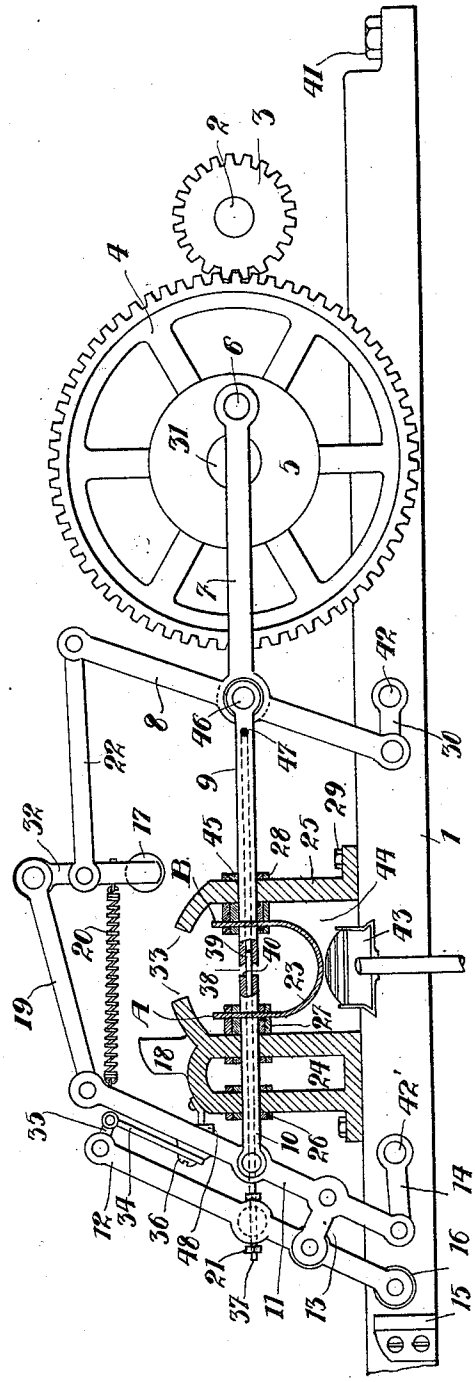


Fig. 2.



Witnesses:
E. G. McGee.
H. S. Morris.

Inventor:
Eduardo Castañeda
By Emile Raimel Cke
Attorney.

UNITED STATES PATENT OFFICE.

EDUARDO CASTAÑEDA, OF MONTEREY, MEXICO.

DISK-CASTING MACHINE.

1,052,651. Specification of Letters Patent. Patented Feb. 11, 1913.

Application filed February 15, 1912. Serial No. 677,659.

To all whom it may concern:

Be it known that I, EDUARDO CASTAÑEDA, citizen of the United Mexican States, residing at Monterey, State of Nuevo Leon, Mexico, have invented certain new and useful Improvements in Disk-Casting Machines, of which the following is a specification.

This invention relates to a casting machine for making articles of lead such as disks, seals and similar devices, and comprehends a machine with a melting pot in which a quantity of molten lead is contained, the molding members being carried horizontally through the sides of the pot, and immersed in the lead. The molding members are closed together and will confine some of the lead between the ends, and once the members have been brought outside the pot they are caused to separate so as to drop the casting by withdrawing an axially carried core from one of the molding members and thereafter both members are reciprocated and enter the pot for a new operation. This I attain by the machine illustrated in the accompanying drawing in which—

Figure 1 is a horizontal cross section of the machine, parts being removed; Fig. 2, is a sectional side elevation; Fig. 3 is a plan, and a vertical section of a cast lead disk made by the machine.

Secondary parts and the framing have been omitted for the sake of clearness, hence only those parts appear which directly carry out the various steps included in the operation of the machine.

In the drawings, (1) denotes the base of the machine which is fastened in place by screws (41), and has disposed transversely over one end thereof a short shaft (2) provided with a pinion (3), the other end of the axis may carry a handle or any other connection for transmission of power. The shaft (2) operates a transverse shaft (31), a spur wheel (4) driven by the pinion (3) receiving the power. The hub (5) of the wheel (4) is keyed, as at (49), upon the shaft (31) and carries a wrist pin (6) to which is connected one end of a link (7). The link (7) at its other end is connected to a pin (46) on a coupling rod (8), the latter being supported at its lower end by a radius link (30), mounted on the frame as at (42). The upper end of the rod (8) is joined to a horizontal link (22) which is in turn connected to an oscillatory rod (32). The rod (32) has a forked lower end which carries a roller (17), employed to cause the separation of the molding members when it strikes against the stop buffer (18). The upper end of the vertical rod (32) is joined to the connecting rod (19) which imparts movements to the lever (11) employed to reciprocate the hollow mold stem (10). The lever (11) is supported by the radius link (14) which turns upon the pin (42^1) attached to the base (1). A spring (34) is fastened by the screw (36) to the front edge of the lever (11), the spring being connected at its upper end to the link (35) which joins with the coöperating lever (12). A core (37) slides within the stem (10) and projects beyond the flat molding end (40) of said stem. The end of the core attached to the lever (12) is adjustable by means of the check-nuts (21).

The core operating lever (12) is forked at its lower end and carries a roller or pulley (16) which strikes against the buffer (15) fixed upon the base (1). The core-operating lever (12) is pivotally connected to an arm (13) which projects forwardly from the rod (11) near its lower end.

Between the stem-operating lever (11) and the vertical connecting rod (32) is a retractile coil spring (20) which causes lever (11) to move toward the molding stem (9). Said stem (9) forms a companion part to the stem (10) and has a concave molding surface, this surface and the molding end (40) of stem (10) uniting, during the operation of the machine, in producing a closed internal cavity.

The main body (25) of the machine is mounted on the base (1) being secured by screws (29); it comprises a chamber (24) for collecting the castings, and a larger chamber (44) for molten lead introduced in through the mouth (33). A pot (23) is arranged within the chamber (44), and the stems (9) and (10) pass through the opposite sides of this pot and through the walls of the chamber (44). The stems are protected by refractory packings (45) arranged in sleeves (27) and (28) which also extend through the opposite side walls of the chamber (44) and the pot (23). The collecting chamber (24) has a sleeve (26) with fireproof packing through which the stem (10) slides.

The stem (9) has an axial bore (39)

and at its outer end is connected by the pin (46) to the rod (8). Adjacent the outer end of the stem (9), a hole (47) is provided, to promote the circulation of air through the stem, for the purpose of cooling the latter and the end portion of the core (37). A stop (48) is provided upon the upper wall of the collecting chamber (24) to limit the inward movement of the stem operating lever (11).

Below the pot (23) is a lamp (43) for keeping the lead in molten state.

In the Fig. 2, two molding stems (9) and (10) are separated, and in this open position lead may flow through the space (38) between the molding surfaces and around the core.

The machine is operated from the pinion (3) which imparts movement to the spur wheel (4) and thereby to the various correlated mechanisms which effect the movements of the stems (9) and (10). The stem (9) is reciprocated horizontally through both sides A and B, of the pot (23). When the stem (9) is moved toward the left and through the side B the stem operating lever (11) retracts the stem (10) until its molding surface comes within the collecting chamber (24), which is the position it must take when the crank pin (6) stands nearest to the casting pot. At the same time, the molding end of the stem (9) is also positioned within the collecting chamber (24) and in close contact with the end of the stem (10), to hold a disk in the internal cavity thereby defined. During this relation the lower end of the core operating lever (12) has engaged the stop buffer (15) which operates said lever to retract the core (37), thereby permitting the finished disk to drop into the chamber (24). When the pin (6) moves away from the pot, all the connecting rods will return to the position shown in Fig. 2, and as the rollers (16) and (17), are free of the stop buffers (15) and (18), in this movement the springs (34) and (20) may freely operate and thereby cause the projection of the core (37) into the stem (9), as shown at (39). The stop buffer (48) arrests the advance of the lever (11) and the stem (10) but the stem (9) still moves a short distance to provide a clearance between the ends of the stems through which the molten lead may flow. The next revolution of the spur wheel (4) repeats the operations described.

What I claim is:—

1. In a machine for casting disks, a melting pot, a pair of opposed mold stems reciprocatory through the sides of said pot and having their opposing ends conjointly movable to a position outside of the pot and to a position within the pot, means for reciprocating said stems, and means for arresting the movement of one of said stems during the movement of their ends into the pot.

2. In a machine for casting disks, a melting pot, a pair of opposed mold stems, a core slidable within one of the stems and engageable in the other stem, means for conjointly reciprocating the stems to bring their opposing ends to a position within and a position without the pot, means for retracting said core when said stem ends are without the pot, means for arresting the movement of the core-carrying stem during the movement of said stem ends into the pot, means for engaging the core with the other stem during the movement of said stem ends into the pot, and means for holding said stem ends in contact during the movement of said ends outside of the pot.

3. In a machine for casting disks, a melting pot, a pair of opposed mold stems reciprocatory through the sides of the pot, a core slidable in one of the stems, the other stem having an axial bore to receive the free end of the core, means for conjointly reciprocating the stems to bring their opposing ends to a position within and a position without the pot and including resiliently connected operating levers, a spring-held core-operating lever carried by and movable relatively to the operating lever of the core-carrying stem, means for operating the core-operating lever to retract the core when the stem ends are outside of the pot, and means for arresting the movement of the core-carrying stem during the movement of the stems into said pot.

4. In a machine for casting disks, a melting pot, a pair of opposed mold stems reciprocatory through the sides of said pot and having their opposing ends conjointly movable to a position within and a position without the pot, means for holding said stem ends in contact during their movement out of the pot, and means for separating said ends at the limit of such movement.

5. In a machine for casting disks, a melting pot, a pair of opposed stems reciprocatory through the sides of the pot to bring their opposed ends to a position inside and a position outside of said pot, said ends constituting complemental molding surfaces, and means for operating said stems.

6. In a machine for casting disks, a melting pot, a pair of opposed stems reciprocatory through the sides of the pot to bring their opposed ends to a position inside and a position outside of said pot, said ends constituting complemental molding surfaces, means for operating said stems, means for holding said ends in contact during their movement into the second-named position, means for separating said ends on reaching that position, means for holding said ends in contact during their return movement into the first-named position, and means for

separating said ends on reaching said first-named position.

7. In a machine for casting disks, a melting pot and a collecting chamber arranged side by side, a pair of opposed stems reciprocatory through said pot and chamber to bring their opposed ends from a position within the pot to a position within the chamber and vice versa, said ends constituting complemental molding surfaces, means for operating said stems, means for holding said ends in contact during their movement from the pot into the chamber, and means for separating said ends on reaching their position in said chamber.

8. In a machine for casting disks, a melting pot, a pair of opposed molding stems, one of which is provided with a movable core engageable in the other, means for reciprocating said stems through the pot to bring their opposed ends to a position inside and a position outside of said pot, means for holding said ends in contact during their movement into the second-named position, means for separating said ends on reaching said position, and means for withdrawing said core from said other stem at such time.

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

EDUARDO CASTAÑEDA.

Witnesses:
A. E. GARNA,
J. J. TREVINO.