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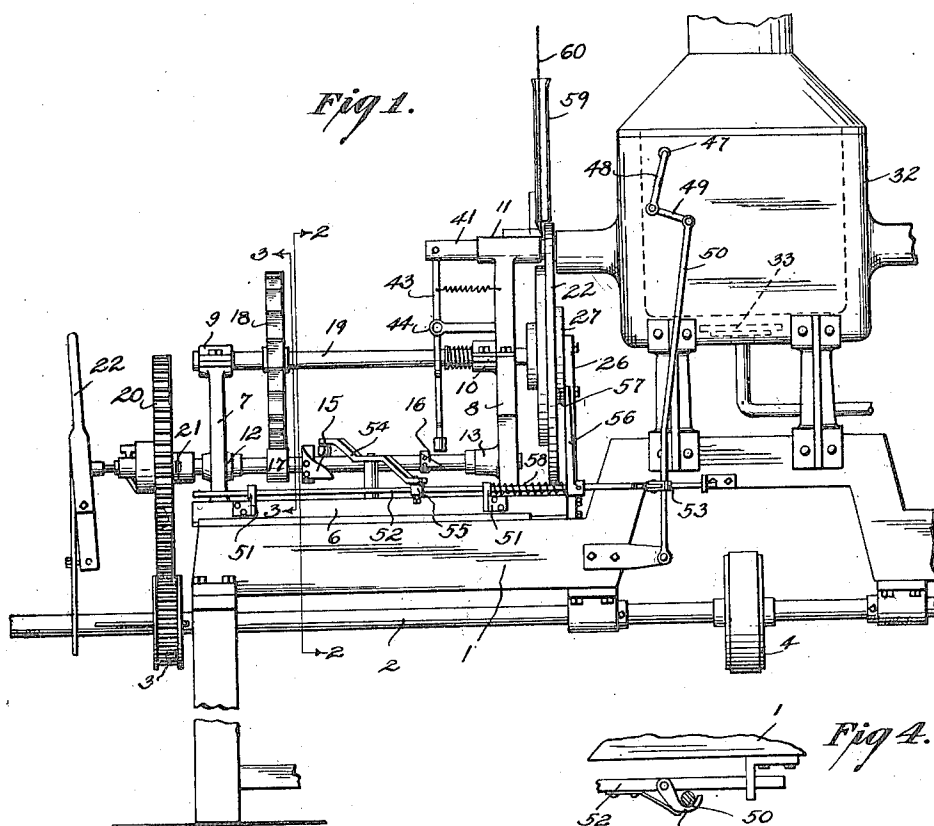
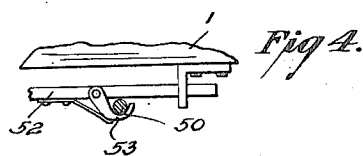
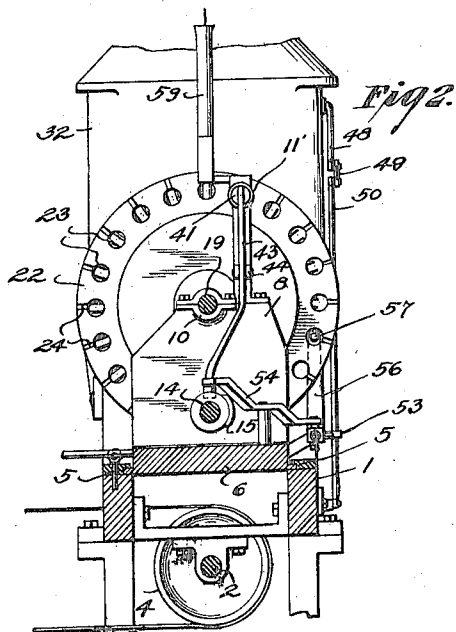
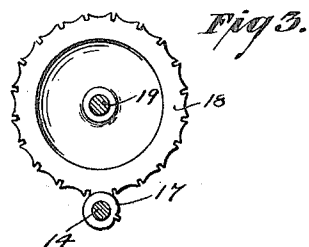
O. G. COOK

1,499,447

MACHINE FOR CASTING LEAD SEALS

Filed Jan. 22, 1923

2 Sheets-Sheet 1



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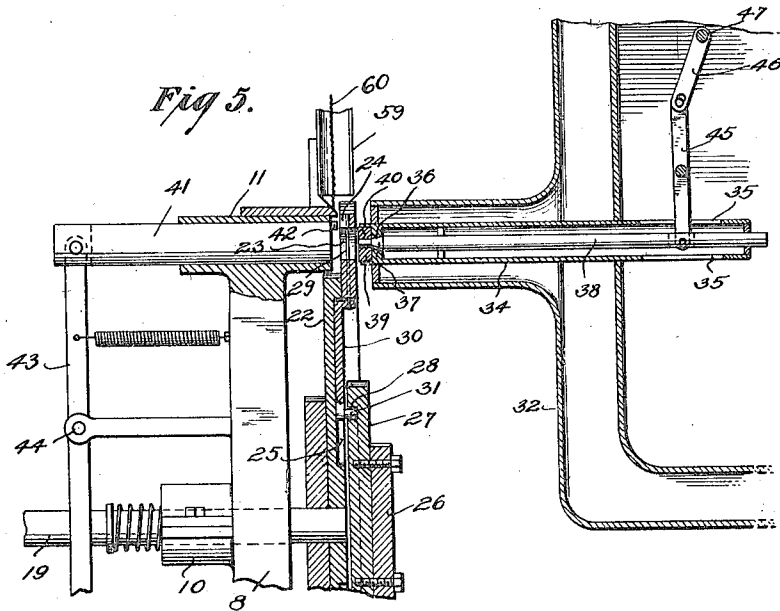
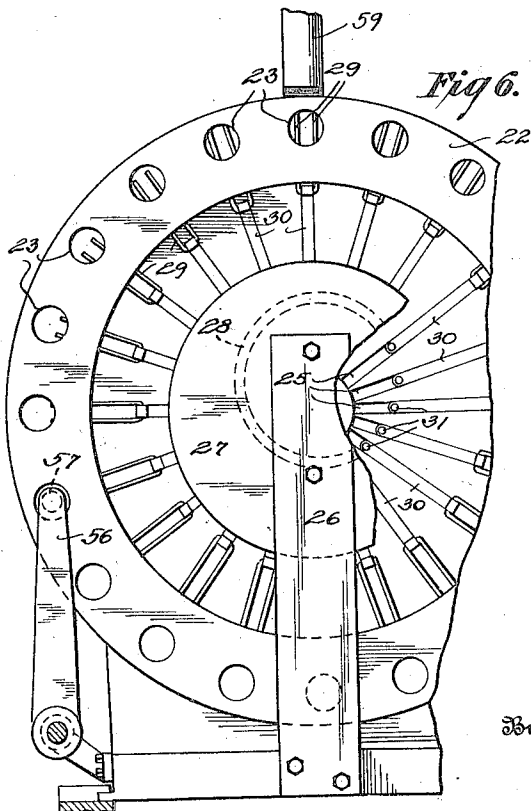
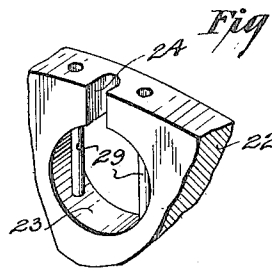
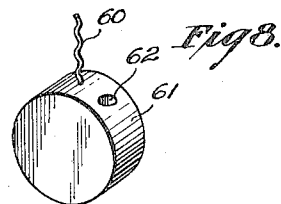
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MACHINE FOR CASTING LEAD SEALS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

ORVAL G. COOK, OF COLUMBUS, OHIO, ASSIGNOR TO THE MAIN-COOK MANUFACTURING COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

MACHINE FOR CASTING LEAD SEALS.

Application filed January 22, 1923. Serial No. 614,141.

To all whom it may concern:

Be it known that I, ORVAL G. COOK, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Machines for Casting Lead Seals, of which the following is a specification.

The present invention is directed to improvements in machines for casting lead seals, and more particularly to that type of seal used for sealing electric and gas meters, and crates or the like.

The primary object of the invention is to provide a machine of this character so constructed that the seal casting molds are carried by a rotary disk, the molds being so constructed that the seal attaching wires can be directed into the molds previous to directing the charge of molten lead into the molds.

A further object of the invention is to provide in conjunction with the molds slidable cores, which when withdrawn from the seals provide openings for the passage and securing of the attaching wires.

A still further object of the invention is to provide novel means for automatically ejecting the seals from the molds after the same have been automatically formed and wired.

With these and other objects in view, as will appear as the description proceeds, the invention consists in the novel features of construction, combinations of elements and arrangements of parts, and hereinafter to be fully described and pointed out in the appended claims.

In the accompanying drawing:

Figure 1 is a side elevation of the machine,

Figure 2 is a sectional view on line 2—2 of Figure 1,

Figure 3 is a sectional view on line 3—3 of Figure 1,

Figure 4 is a detail view of the latch,

Figure 5 is a vertical sectional view through the mold disk and lead feeding tube,

Figure 6 is a fragmentary view of the mold disk,

Figure 7 is a fragmentary perspective view of the molded disk, and

Figure 8 is a perspective view of one of the seals.

Referring to the drawing 1 designates a

leg supported bed having associated therewith a driving shaft 2 upon which is mounted for slidable movement a gear 3, the purpose of which will appear later. Rotary movement is imparted to the shaft 2 by the belt driven pulley 4.

The sides of the bed 1 are provided with guides 5 in which slides the table 6, said table having vertical standards 7 and 8 carried thereby, said standards being provided with bearings 9 and 10, respectively, and rising from the bearing 10 is a bearing 11, said standards being further provided with bearings 12 and 13. Rotatably supported in the bearings 12 and 13 is a shaft 14, said shaft having secured thereto in spaced relation cams 15 and 16, said shaft also having fixed thereto a toothed disk 17 which meshes with the disk 18 fixed to the shaft 19 which is journaled in the bearings 9 and 10. Since the disks 17 and 18, when cooperatively related, produce the well known "Geneva" movement, a detail description thereof is not thought necessary.

In order to rotate the shaft 14, and thus the shaft 19, the former has associated therewith a gear 20 which meshes with the gear 3, there being a clutch device 21 between the gear 20 and shaft 14 which is controlled through the medium of the suitably mounted lever 22, and since the gear 3 is slidable on the shaft 2 the gear 20 can be slid rearwardly, when desired to permit the shaft 14 to remain inactive.

Fixed to the forward end of the shaft 19 is a mold disk 22' having a plurality of circularly aligned open ended molds 23 formed near the periphery thereof, said molds having radial channels 24 formed therein, said disk being further provided with an annular channel 25. A vertical bracket 26 is carried by the forward end of the table 6 and supported by said bracket is a circular plate 27 in which is formed an eccentrically disposed groove 28, the purpose of which will appear later.

Carried by the disk 22' are U-shaped cores 29, said cores being successively slidable into and out of the molds during the rotation of the disk, and in order to impart to the cores the desired sliding movement bars 30 are provided, and occupy the channel 25, the outer ends thereof being connected to the bite portions of said cores, while the inner ends thereof are provided with lugs 31

which are slidably engaged in the groove 28, and since said groove is eccentric it is obvious that as the disk 22' is rotated the cores will be caused to slide transversely of the molds 23.

Mounted on the bed 1 is a tank 32 for containing molten lead, the lead being retained in the proper molten state by a gas burner 33 or in any other suitable manner. Leading from the tank is a tube 34 the rear end of which being slotted, as at 35 to permit the lead to flow into the tube. The outer end of the tube is provided with a seat 36 and cooperative with said seat is a valve 37, the stem 38 of which extends into the tank, said valve serving to control the flow of lead from the tube.

This tube is also provided at its outer end with a disk 39 having a central orifice 40, which registers with a seat 36, said disk lying in close proximity to the disk 32, as clearly shown in Figure 4 of the drawing.

A plunger 41 is slidable in the bearing 11 and has its inner end provided with a finger 42 for movement into and out of the channels 24, the sliding movement of said plunger being controlled by the lever 43, which is pivotally supported as at 44 and has its lower end disposed in the path of movement of the cam 14.

In order to control the sliding movement of the valve stem 38, a lever 45 is pivotally mounted intermediate its ends in the tank 32, and has its lower end pivotally connected to said stem, the upper end of the lever being pivotally connected to the lower end of the link 46 carried by a rock shaft 47 supported transversely of the tank, to one end of which is fixed the upper end of the arm 48. The lower end of the arm 48 is pivotally connected with a link 49 and pivotally connected to the other end of said link is the upper end of a lever 50 which has its lower end pivotally connected with the bed 1.

Spaced brackets 51 are carried by the table 6 and slidably in said brackets is a rod 52, the inner end of which has pivotally and yieldably connected thereto a latch 53 adapted to engage the lever 50 to rock the same when reciprocatory movement is imparted to said rod through the medium of the angle lever 54. The lever 54 is pivotally mounted on the table 6 and has its forward end pivotally connected with the rod 52 through the medium of the block 55, the rear end of said lever being in the path of travel of the cam 15. Thus it will be seen that as the cam 15 is revolved the lever 54 will be rocked, thereby causing the rod 52 to reciprocate and simultaneously rock the lever 50 which positively controls the flow of molten lead from the tank to the molds 23.

Fixed to the rod 52 is an arm 56 which

has its upper end provided with a seal ejecting pin 57. It will be observed that the rod 52 after being moved rearwardly by the action of the cam 15 the lever 54 is automatically returned to its inoperative position by the spring 58 which is disposed between the arm 56 and adjacent bracket 51.

Disposed above the disk 22' is a chute 59 which serves to feed the seal wires 60 through the molds 23 as the disk 22' is rotated, said wires being cut in suitable lengths previous to their delivery to the chute. The wire 60 is shown in Figure 7, embedded in the seal 61.

The operation is as follows:

The shaft 2 being operated rotary movement is imparted to the shaft 14 through the medium of the gears 3 and 20, thereby rotating the disk 17 which intermittently rotates the disk 18, as is usual when the well known "Geneva" movement is employed and consequently the shaft 19 and mold disk 22' is similarly rotated. The rotation of the cam 15 is so timed that the angle lever 54 is rocked to move the rod 52 rearwardly which causes the latch 53 to rock the lever 50, which in turn through the medium of the rock shaft 47 and link 46 moves the valve 37 rearwardly to permit a charge of molten lead to flow through the orifice 40 to the mold 22' coinciding therewith. Previous to the injection of the lead into the mold 22' the wire 60 is guided into the mold 22 and stands endwise in the mold and channel 24, after which the plunger 41 is moved forwardly to close the outer side of the mold to trap the lead therein, and at which time the finger 42 of the plunger occupies the upper end of the channel 24 to clamp the wire 60 and close said channel. It will be of course understood that when the cam 14 engages the lower end of the lever 43 that the plunger 41 will slide forwardly so that its inner end will momentarily be held engaged with the disk 22'. After the molten lead has been trapped in the mold by the plunger 41 and disk 39 of the tube 34, the disk will be rotated through the medium of the shaft 19 until the next mold 22' coincides with the orifice 40 for receiving its charge of lead, the amount of the charge being controlled by the movement of the valve 37. It will be of course apparent that when the uppermost mold coincides with the orifice 40 that the arms of the core 29 will bridge the mold, but as the mold disk gradually rotated the cores will be withdrawn from the mold due to the eccentric groove 28, as is clearly shown in Figure 5 so that when the molds successively coincide with the ejecting pin 57, the completed seal 61 will be ejected from the mold, and since the cores are withdrawn the seals will be provided with a pair of openings 62 for securing the attaching wires 60 before the seal

is distorted into its sealed condition. The shaft 19 has a slight endwise movement to permit the mold disk to have a slight lateral play so that when the inner end of the plunger 41 is impinged against the disk the same will be forced into intimate contact with the disk 39 of the tube 34, thus tightly clamping the mold disk between the plunger and disk 39 to receive a charge of molten lead and retain the same. The disks 17 and 18 are so timed that each mold will be held momentarily stationary when between the plunger 41 and disk 39. Immediately after the pin 57 ejects the completed seal from its mold, the spring 58 will return the rod 52 to its inoperative position.

Owing to the presence of the latch 53 the rod 52 can be disengaged from the lever 50 so that the table 6 can be slid rearwardly, this being necessary at times when it is desired to change the mold disks to form seals of different sizes.

What is claimed is:

1. In a machine for casting lead seals, a rotating disk having open ended molds formed therein, means for closing the ends of the molds, and means for discharging molten lead from one closing means into the molds and in opposition to the other closing means.

2. In a machine for casting lead seals, a disk having a plurality of open ended molds formed therein, means for rotating the disk, slidable means for closing one end of the mold, means for discharging molten lead into the molds, and means operating in opposition to the lead discharging means and slidable closing means for trapping the lead in the molds.

3. In a machine for casting lead seals, a tank for containing molten lead, a tube leading from the tank and coinciding with the molds, a slidable plunger disposed in alignment with the tube, a disk having molds formed therein, means for rotating the disk for successively positioning the molds in alignment with the tube and plunger, and means for directing molten lead from the tube into an aligned mold and against the adjacent end of the plunger.

4. In a machine for casting lead seals, a molten lead conducting tube having a discharge disk carried in one end, a plunger disposed in opposition to the disk, a disk having a plurality of circularly aligned molds formed therein, means for rotating said disk to successively position the molds between the discharge disk and plunger, means for causing the discharge disk and plunger to close the ends of the molds, and means to permit a charge of molten lead to pass through the discharging disk into said mold.

5. In a machine for casting lead seals, a bed, a table mounted thereon for sliding movement, a molten lead containing tank mounted on the bed, a disk having a plurality of molds formed therein, means for conducting molten lead from the tank to the molds, a plunger adapted to be aligned with the molds and in opposition to the lead of the means, means for causing the plunger and lead conducting means to close the molds when lead is discharged from the conducting means into the molds.

In testimony whereof I affix my signature.

ORVAL G. COOK.