No. 881,815. PATENTED MAR. 10, 1908.

D. H. MERRITT.

CEMENT BRICK MACHINE.

APPLICATION FILED MAR. 21, 1907.

2 SHEETS—SHEET 1

Fig. 1.

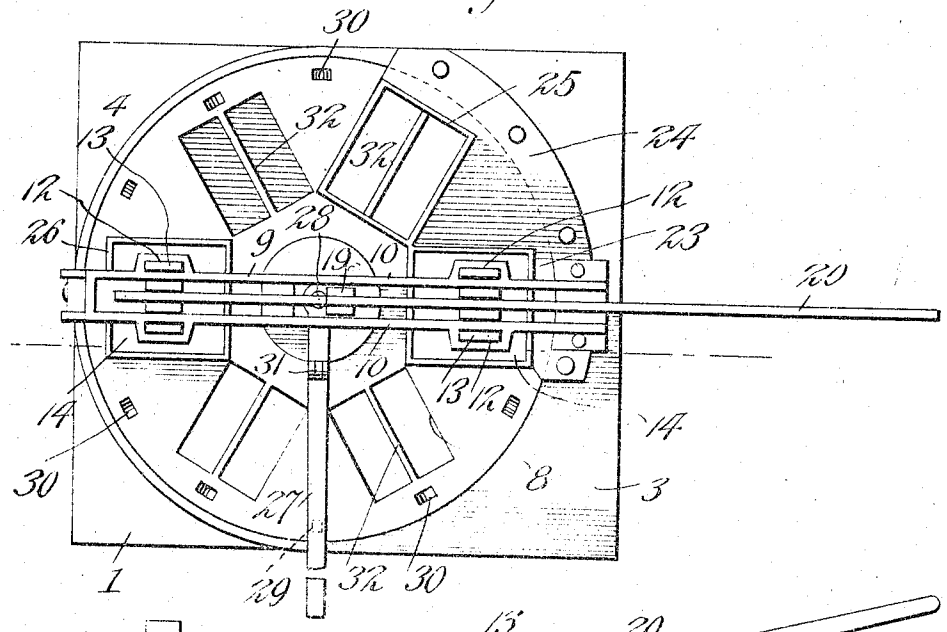

Fig. 2.

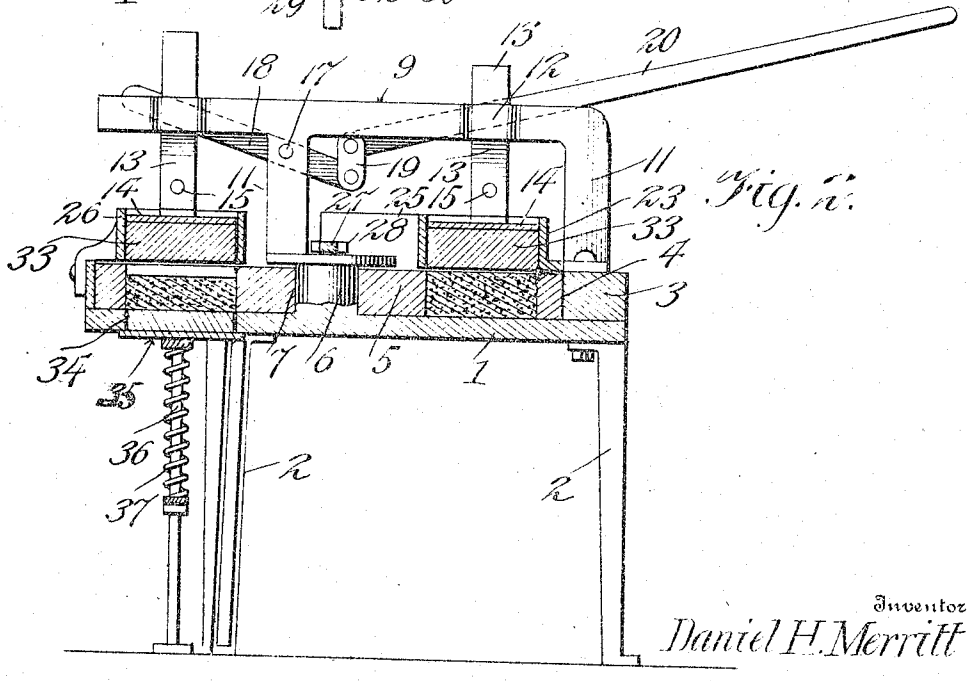

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Fig. 3.

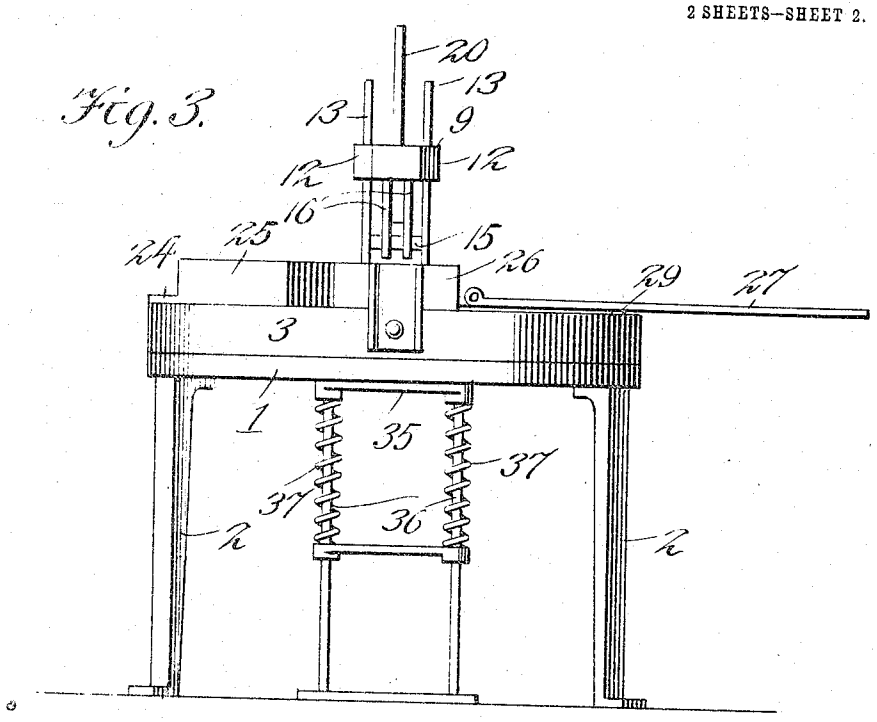


Fig. 4.

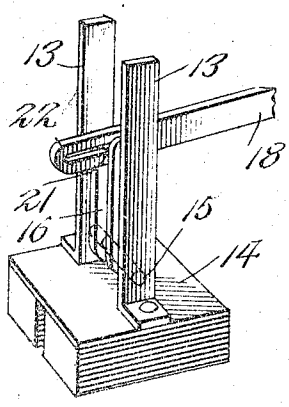
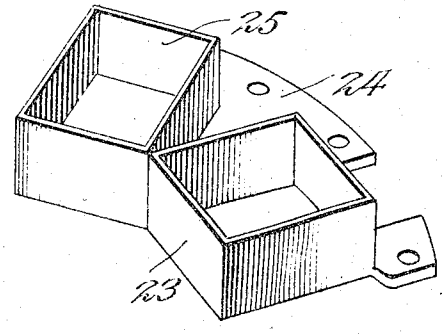


Fig. 5.



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CEMENT-BRICK MACHINE.

No. 881,815. Specification of Letters Patent. Patented March 10, 1908.

Application filed March 21, 1907. Serial No. 363,630.

To all whom it may concern:

Be it known that I, DANIEL H. MERRITT, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented new and useful Improvements in Cement-Brick Machines, of which the following is a specification.

This invention relates to a concrete or cement brick making machine of that type provided with a rotary mold disk in which the bricks are pressed at one point and the finished bricks simultaneously discharged at another point by a common actuating means under the control of the operator.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively easy and inexpensive to manufacture, ready of manipulation, and thoroughly efficient and reliable in use.

A further object of the invention is the provision of a brick making machine having a rotary disk provided with a plurality of mold boxes or chambers and a pair of simultaneously actuated plungers arranged to compact or compress the bricks by one plunger and to discharge the bricks by the other plunger, the disk being rotated step by step to successively bring the mold boxes or chambers under the respective plungers so that the bricks can be formed in rapid succession.

A further object of the invention is to provide a mold plate in which the chambers thereof are adapted to pass over a yieldingly supported pallet upon which the bricks are successively discharged.

With these objects in view and other as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one of the embodiments of the invention, Figure 1 is a plan view of the machine. Fig. 2 is a central vertical section. Fig. 3 is a rear view. Fig. 4 is a perspective view of one of the plungers. Fig. 5 is a perspective view of the feed hopper and pressing plunger boxes.

Similar reference characters are employed to designate similar parts throughout the figures.

Referring to the drawings, 1 designates a flat bed of approximately square form that is supported on legs 2 and has secured on its upper side a plate 3 provided with a circular opening 4 for receiving the mold disk 5. The bed 1 has a central stud or pivot 6 that extends into the central opening 7 of the disk 5 to serve as an axle for the latter. The disk is provided with a plurality of radially disposed mold boxes or chambers 8 that are preferably grouped in pairs, as shown clearly in Fig. 1, in which the concrete or cement is compacted or pressed to form the bricks.

Disposed over the disk is a bracket or frame designated generally by 9 that is composed of spaced members 10 provided with legs 11 secured to the front portion of the plate 3 and to the pivot 6, respectively. This bracket serves to guide the movement of the plungers or pistons of the machine and for supporting the operating lever. On the members 10 are vertically extending guideways 12 arranged over the mold boxes or chambers 8, and movable vertically in the guideways at corresponding ends of the members 10 are pairs of plunger rods 13 of each plunger 14. As shown clearly in Fig. 4, the members 13 are spaced apart and extending horizontally from one to the other adjacent their bottom ends is a pivot 15 on which are links 16 that are connected with the operating levers. Fulcrumed at 17 on the bracket 9 is a short lever 18 that is connected at its inner end by a link 19 with the hand lever 20. The levers 18 and 20 are disposed between the members 11 of the bracket or supporting frame 9 and they are connected with their respective pistons by the links 16, which latter carry at their upper ends a pin 21 movable in a slot 22 of the adjacent lever, as shown more clearly in Fig. 4. By this arrangement, the downward movement of the outer end of the hand lever 20 causes the pistons or plungers to be simultaneously depressed.

Arranged at the front of the machine and supported on the plate 3 is a plunger box 23 for receiving the pressing plunger of the machine, and adjacent the box 23 and mounted on a common base plate 24 is a hopper or filling box 25 so disposed that it will register with one of the mold chambers 8, while another of the latter is registering with the plunger box. Arranged at the rear end of the frame of the machine is a stationary box 26 in which moves the discharge plunger, the location of the box being such that it will reg-

ister with a mold chamber 8 at the same time that the front box 23 registers with another mold chamber, so that the plungers can be moved simultaneously, one for pressing and the other for discharging the bricks.

In order to rotate the mold disk 5, a lever 27 is fulcrumed at 28 so as to move about the axis of the mold disk and adjacent the outer end of the lever is a projection 29 that is adapted to be engaged in any one of the depressions 30 arranged in the mold disk 5, the lever 27 being composed of two sections connected by a hinge 31 for permitting the outer section to be raised and lowered for disengagement from and engagement with the depressions 30. By raising the lever 27 and swinging it toward the front of the machine so as to engage in the appropriate depression 30, the lever is swung rearwardly after its projection is engaged in the depression for moving the disk 5 one step forwardly to form a new brick and simultaneously discharge a finished one. In the present instance, the mold boxes or chambers 8 are each provided with a partition 32, whereby two bricks can be formed in each mold box and the plungers 14 are provided with spaced blocks or weights 33, as shown in Fig. 4, to enter the compartments formed on opposite sides of the partitions 32.

The bed 1 is provided with a discharge opening 34 located under the discharge plunger box 26 for receiving the finished bricks, and arranged in the opening 34 is a pallet 35 movable vertically between rods 36 and yieldingly held in raised position by helical compression springs 37 supported on the rods. As the discharge plunger is depressed, the finished bricks in the mold box under the same are forced out through the mold box and opening 34 to the pallet 35 that simultaneously yields with the depressing of the discharge plunger.

In practice, the concrete or other material of which the bricks are to be made is filled into the hopper box 25 so as to enter the mold chamber 8 that is brought into register therewith and after the mold chamber is filled, the mold disk 5 is rotated one step by the lever 27, thus bringing the filled mold chamber into alinement with the pressing plunger 14. By this movement, a second chamber is brought into alinement with the hopper so that the chamber can be filled while the pressing plunger is actuated, these separate acts being accomplished by separate operators, one attending to the manipulation of the lever 20, while the other attends to the filling of the mold chambers and the receiving of the finished bricks from the pallet. After the brick under the pressing plunger has been formed, the rotary disk 5 is moved another step so that another chamber can be filled and another brick pressed. This operation is repeated until finally the pressed brick or bricks in the first mold chamber has reached the rear of the machine and passed into alinement with the discharge plunger, so that simultaneously with the pressing of the bricks by the front plunger, the finished bricks will be discharged to the pallet 35 at the rear of the machine. Thus it will be seen that the finished bricks or blocks are discharged at the same rate that they are formed and by the simple operation of the lever 20. The movement of the lever 18 is such that the discharge plunger will cause the finished bricks to pass completely out of the discharge opening 34 in the bed 1 so that the finished bricks can be readily removed from the pallet 35. Any suitable means may be employed for holding the pallet depressed during the removal of the bricks, as will be readily understood.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. The combination of a supporting structure, a bed thereon, a pivot on the bed, a mold disk bearing on the bed and revoluble on the pivot, pressing and discharging plungers, guides for the plungers disposed over the disk, means for supporting the guides on the structure, a mechanism for simultaneously actuating the plungers, lever mounted on the pivot and extending radially over the disk, and means on the lever for engaging the disk to turn the same.

2. In a machine of the class described, the combination of a bed, a pivot rising therefrom, a mold disk mounted to turn on the pivot and rest on the bed, a frame supported on the pivot, plungers guided on the frame, levers mounted on the frame for simultaneously actuating the plungers, a member mounted on the pivot for oscillatory movement and arranged to have a ratchet engagement with the disk.

3. In a machine of the class described, the combination of supporting structure, a bed thereon, a pivot on the bed, a mold disk turning on the pivot and bearing on the bed, a frame supported on the said structure at a point above the disk, pressing and discharging plungers, plunger guides overhanging the disks and rigid on the structure, means on the frame engaging the members for guiding the plungers, a lever connected with one of

the plungers and fulcrumed on the frame, an operating lever connected with the other plunger, and a link connecting the levers.

4. In a machine of the class described, the combination of a supporting structure, a bed thereon, a pivot on the bed, a mold disk mounted to turn on the pivot, pressing and discharging plungers, a ratchet lever mounted on the pivot and extending over the top of the disks for engaging to the latter, said lever being composed of flexibly connected parts.

5. In a machine of the class described, the combination of a stationary support, a rotatable member mounted thereon provided with a plurality of mold chambers, an operating lever extending over the rotatable member from the center thereof to a point beyond the periphery and adapted to turn the member, said lever being composed of flexibly connected sections, a stationary plunger guide, a stationary hopper, a supporting plate for the guide and hopper, a second plunger guide mounted on the said stationary support diametrically opposite from the first guide, simultaneously actuated plungers, and means arranged adjacent the second guide for receiving the bricks discharged from the mold chambers.

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

DANIEL H. MERRITT.

Witnesses:

L. HAGEMANN,

H. I. MERRITT.