C. E. PHILLIPS.

CONCRETE BLOCK MACHINE.

APPLICATION FILED AUG. 7, 1908.

939,543.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.

Fig. 2.

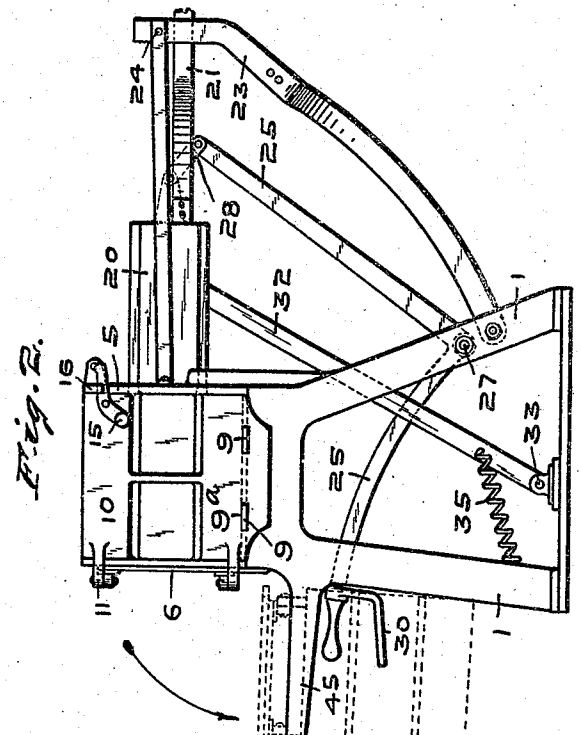
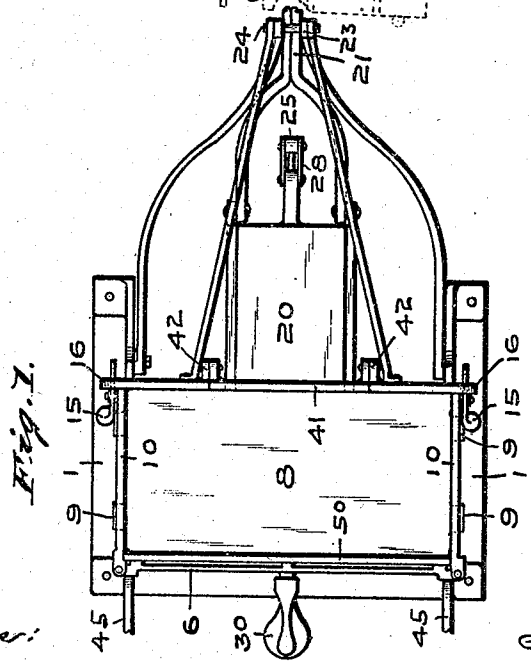


Fig. 1.



Witnesses:

L. B. Moerner

Wm Hurte.

Inventor

Charles E. Phillips,

By Minturn & Moerner

ATT'YS.

C. E. PHILLIPS.

CONCRETE BLOCK MACHINE.

APPLICATION FILED AUG. 7, 1908.

939,543.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 2.

Fig. 4.

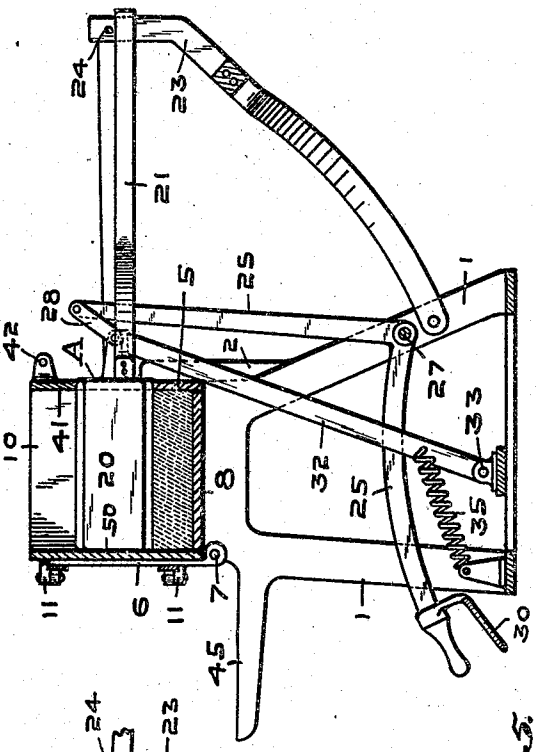


Fig. 5.

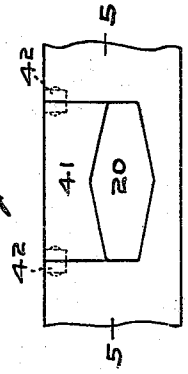
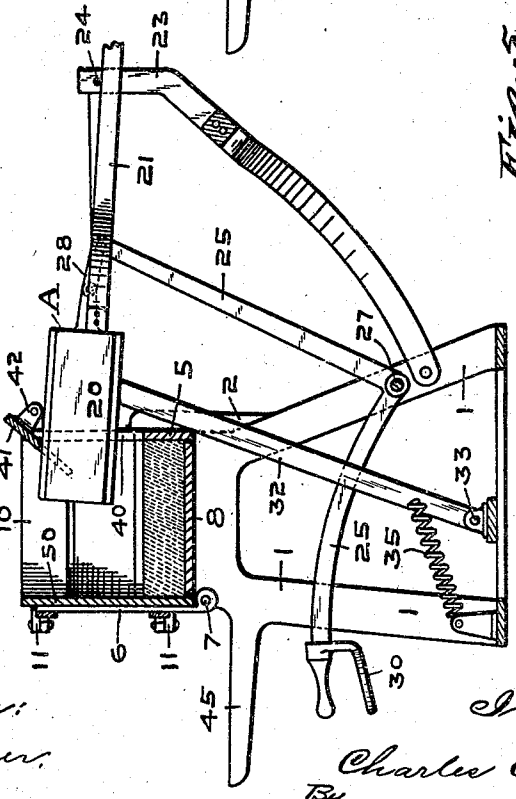


Fig. 3.



Witnesses:

C. B. Moomer.

Wm Hurte.

Inventor.

Charles E. Phillips,

By Minturn & Hoomer

ATT'YS.

UNITED STATES PATENT OFFICE.

CHARLES EDGAR PHILLIPS, OF INDIANAPOLIS, INDIANA.

CONCRETE-BLOCK MACHINE.

939,543. Specification of Letters Patent. Patented Nov. 9, 1909.

Application filed August 7, 1908. Serial No. 447,496.

To all whom it may concern:

Be it known that I, CHARLES E. PHILLIPS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cement-Block Machines, of which the following is a specification.

This invention relates to machines for manufacturing hollow cement building blocks. With machines of this character wherein the molds are partly filled with cement before the cores are inserted, it ofttimes happens that too much cement is first introduced into the molds so that the top of the cement will project into the path of the incoming cores, causing the cement to be rolled up in front of the cores and forced against the sides of the molds. Thus, the cement interferes with the cores and prevents them from moving into proper position until the cement which has been rolled up in advance of the moving cores is removed. Much time is lost in removing the cement, besides reducing the capacity of the machines.

The object of this invention is to provide means whereby the forward ends of the cores are first elevated or raised into an inclined position before entering the molds, so that the cores will not come into contact with the cement and thus be able to drop into normal position at the end of said inward movement.

Referring to the accompanying drawings which are made a part hereof, Figure 1 is a top or plan view of the invention. Fig. 2 is a side elevation of the construction shown in Fig. 1. Fig. 3 is a transverse section of the machine on the line A—A on Fig. 1, showing the core elevated at its front end and partly moved into the mold. Fig. 4 is a view similar to Fig. 3 except that the core is shown occupying its innermost position. Fig. 5 is a fragmentary detail view in elevation of the gate formed within the back plate of the mold.

In the drawings, 1 constitutes the supporting frame of the machine which is provided with the integral standards 2. This frame supports the mold-box in which the cement blocks are formed. The mold-box is rectangular in form and comprises a back plate 5, which is mounted in a fixed manner to the standards 2 of the supporting frame 1. The opposite or front side of the mold comprises the plate 6 which is pivotally secured to the supporting frame 1, at 7. The floor of the mold-box comprises the plate 8 which is notched at the ends to form ears 9 which engage the slots 9^a in the end plate 10. The ends of the mold-box are formed of the plates 10, and these plates are pivotally secured at 11 to the front plate 6. These end plates 10 are also provided with the slots 9^a to receive the ears 9 on the bottom plate 8, and it will be seen that by the several connections the front-plate 6, bottom plate 8 and end plates 10 may be simultaneously swung on the pivots 7 to turn the finished block. The front-plate 6, bottom plate 8 and the end plates 10 are held in assembled relation with the back plate 5, as during the molding of the blocks, by means of the pawls 15 which are pivotally mounted on the end plates 10 and engage the hooks 16 secured to the back plate 5.

In the manufacture of cement blocks for building purposes it is the practice to form such blocks with one or more openings, extending through the blocks, which openings are formed by means of one or more movably actuated cores which are operated in various ways, the common practice being to move them in a horizontal plane into and out of the molds. As the lower portion of the block, in these machines, is first formed by partially filling the molds up and to the point of entrance of the cores, and as the work is generally carried forward with haste, the workmen are apt to place too much cement into the molds so that the movement of the incoming cores is interfered with. To remedy this defect I provide the core 20 with means to permit it to be elevated above the cement when entering the mold. This peculiar movement of the core is accomplished by means of the rocker-arm 25 and the lever 32. The core 20 is provided with the rigid guide-rail or tail-piece 21 which extends rearwardly, and to prevent lateral movement the tail-piece passes between the two uprights 23. The core 20 is moved into the mold by means of the rocker-arm 25, which is secured to the rock shaft 27, the latter being movably mounted in the supporting frame 1. The arm 25 is so shaped that the portion in the rear of the shaft 27 extends upwardly and rearwardly of the core 20, and connection is made with the latter by means of the link 28, which connection will admit of a different movement of the

two parts. The remaining portion of the arm 25 extends forward to the front of the machine where it is provided with the foot-plate 30 upon which the operator places his foot. It will be seen that as the forward end of the arm 25 is depressed the core 20 is forced to travel into the mold.

The machine is also provided, as before stated, with the core elevating lever 32 which is pivoted to the frame 1 at 33. This lever extends upwardly with its upper end terminating slightly above the lower edge of the path traveled by the core. The lever is normally held against the back edge of the mold by means of the spring 35. See Figs. 3 and 4. With the core 20 lying in normal horizontal position within the mold, the core will be withdrawn from the mold in a horizontal plane by elevating the forward end of the rocker-arm 25. As the core starts outwardly from the mold the end A will engage the edge of the lever 32 near the top, and force said lever to move backwardly until the swinging of the arm, caused by its pivotal mounting, moves or carries the upper end out of the horizontal plane or path traveled by the core, at which time the upper end of the lever will move in under and bear against the under surface of the core. Thus, when the rocker-arm 25 is again depressed, causing the core to be moved into the mold, which movement also moves the core more perpendicularly over the pivotal connection 33 of the lever 32, and as the latter is somewhat longer than the distance between said pivot and the plane in which the core travels the latter, as a matter of course, will be forced upwardly above the normal plane and be carried by said lever 32 until the movement of the latter is arrested by engaging the edge of the mold. Further depression of the rocker-arm 25 causes the core to continue to move inwardly until the end A drops off of the upper end of the lever 32; the end A of the core, during the operation, being held below the plane of the opposite end of the core by reason of the engagement of the tail-piece 21 with the pin 24 which passes transversely through the uprights 23.

The rear plate 5 of the mold-box is provided with an aperture or core-hole 40 to permit the core 20 to move into and out of the mold, and since the core is elevated when entering the mold, and since the back plate must fit snugly around the core when the latter is lying in normal operating position so as to impart a smooth surface to the block, provision must be made to allow of this irregular travel of the core. This is accomplished by means of a gate 41 which is formed by separating that portion of the back plate 5 above the core-hole 40. The gate 41 is hinged to the main body of the back plate by means of the hinges 42. When the core is elevated the gate swings inwardly at the bottom (as shown in Fig. 3) and said gate returns to normal position when the core finally moves in its normal horizontal position within the mold, as shown in Fig. 4. With the core now in operating position the unfilled or remaining portion of the mold is filled to complete the block. After the block is completed the first operation consists in elevating the arm 25 which causes the core 20 to be removed from the mold in a horizontal plane. After the core has been removed from the mold the pawls 15 are unhooked from the catches 16 which releases the front-plate 6, bottom plate 8 and end plates 10, thus allowing the mold to turn over and rest upon the horizontal brackets 45 of the supporting frame where it can be opened to free the finished block. The mold-box is also provided with the pallet-board 50 which is inserted into the box and stands vertically alongside the front-plate 6. It will be noted that when the finished block is turned over on its side it will rest upon the pallet-board, the latter forming a supporting base to enable the new block to be removed from the machine.

Having thus fully described my said invention, what I desire to secure by Letters Patent, is—

1. A machine of the above specified class comprising the supporting frame, a mold box supported by said frame, a movable core adapted to be laterally moved into said mold box, means adapted to move said core into the mold box, and means adapted to move said core into an inclined position with relation to the horizontal during said inward movement into the box mold.

2. A machine of the above specified class comprising the supporting frame, a mold box supported by said frame, a movable core adapted to be laterally moved into said mold box, means adapted to be moved into said mold box, means adapted to prevent lateral movement of the core during said inward movement, and means adapted to move said core into an inclined position with relation to the horizontal during said inward movement into the box mold.

3. A machine of the above specified class comprising the supporting frame, a mold box supported by said frame, a movable core adapted to be moved into said mold box, means for moving said core into the mold box, means adapted to elevate said core above its normal path of travel during said inward movement, and means arranged in said mold box to permit said core to be elevated.

4. A machine of the above specified class comprising the supporting frame, a mold box comprising the back-plate rigidly fixed to the supporting frame, a front plate pivotally secured to said supporting frame, end

plates pivotally secured to said front plate and provided with slots, a bottom plate adapted to engage the slots and be carried by said end plates, means for securing the front and end plates to the rear plate, a movable core adapted to be moved into the mold box, means for moving said core into the mold box, means adapted to elevate said core during said inward travel, and means arranged in said mold box to permit said core to be elevated.

5. A machine of the above specified class comprising the supporting frame, a mold box pivotally mounted on said frame, a movable core, means adapted to laterally move said core into and out of the mold box, a lever moved to its initial position by the outward travel of the core, said lever adapted to move said core into an inclined position with relation to the horizontal during the inward travel of said core into the mold box, and means adapted to normally hold said lever against the core.

CHARLES EDGAR PHILLIPS.

Witnesses:
EVERETT L. DEUPREU,
JAY A. EGBERT.