No. 839,418. PATENTED DEC. 25, 1906.

B. POULSON.

CEMENT BLOCK MACHINE.

APPLICATION FILED MAR. 12, 1906.

2 SHEETS—SHEET 1.

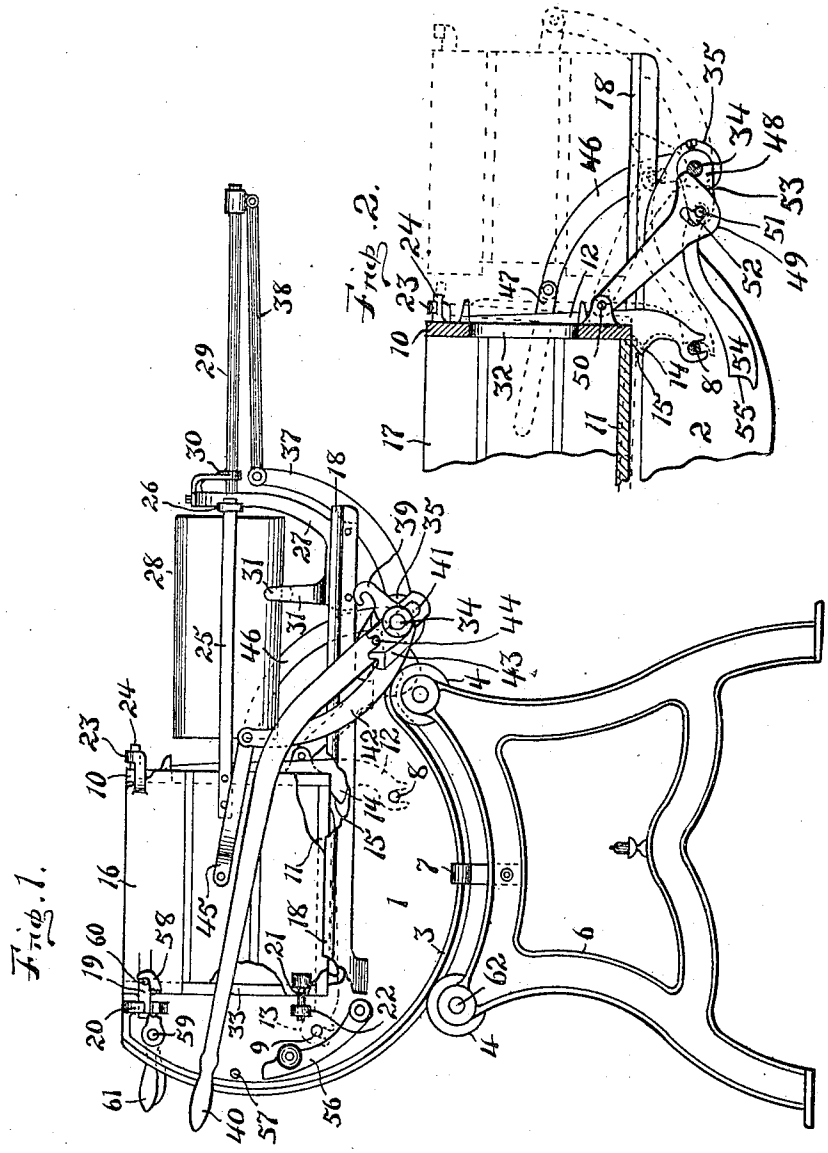


Fig. 1.

Fig. 2.

WITNESSES:

M. Mattler

Wm N. Bennett

Britton Poulson INVENTOR

BY A. G. Bennett

ATTORNEY

THE NORRIS PETERS CO., WASHINGTON, D. C.

No. 839,418. PATENTED DEC. 25, 1906.

B. POULSON.

CEMENT BLOCK MACHINE.

APPLICATION FILED MAR. 12, 1906.

2 SHEETS—SHEET 2.

Fig. 4

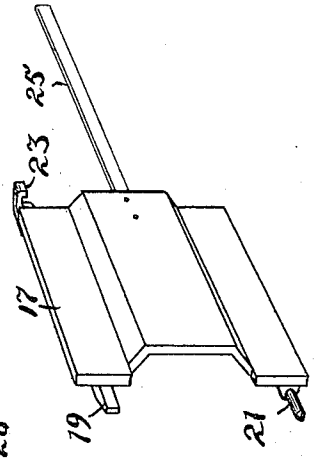
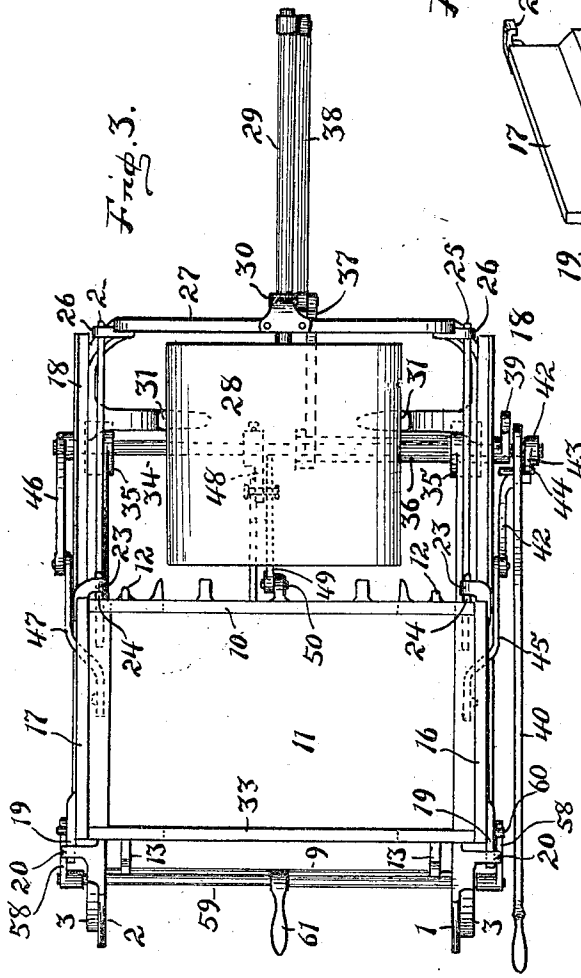


Fig. 3.



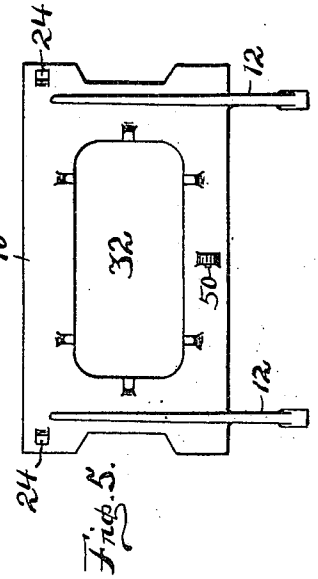


Fig. 5.

WITNESSES:

M. Mattler.

Wm H. Burnham

Britton Poulson INVENTOR

BY A. G. Burns

ATTORNEY

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BRITTON POULSON, OF FORT WAYNE, INDIANA.

CEMENT-BLOCK MACHINE.

No. 839,418. Specification of Letters Patent. Patented Dec. 25, 1906.

Application filed March 12, 1906. Serial No. 305,475

To all whom it may concern:

Be it known that I, BRITTON POULSON, a citizen of the United States of America, and a resident of Fort Wayne, in the county of Allen 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 improvements in cement-block machines; and the object thereof is to afford a device of the class named which will be simple in operation and by means of which cement blocks may be formed of a mixture carrying considerable moisture. I accomplish this by the construction illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of the machine with parts cut away. Fig. 2 is a detail view in section, showing the connection of the stripping-plate with the operating-shaft. Fig. 3 is a plan view of Fig. 1. Fig. 4 is a perspective view of one of the end plates, and Fig. 5 is a back view of the stripping-plate.

Similar numerals of reference indicate corresponding parts throughout the several views, and referring now to the same, 1 and 2 are the end castings of an oscillatable frame, each of which has a circular flange 3 projecting from its outer face and which rides upon wheels 4, the latter being mounted upon a base 6. Guide-lugs 7 are secured to the base and engage, respectively, flanges 3 and hold the frame in proper relation with the base. The end castings are rigidly connected together, and transverse rods 8 and 9 extend from one casting to the other and afford supports, respectively, for the stripping-plate 10 and face-plate 11, the former having extending arms 12, which connect with the rod 8, and the latter having similar arms 13, which connect with the rod 9, so that both plates are adapted to swing upon their respective rods. The arms 12 have each a forwardly-projecting lug 14 at its juncture with the lower edge of the plate 10, and the inner side of the plate 11 rests upon said lugs and is supported thereby. The front faces 15 of the lugs 14 recede, so that when the plate 10 is swung rearwardly the plate 11 will then rest upon the receding faces of the lugs and will thereby become lowered in position.

At the ends of the plates 10 and 11 are sliding end plates 16 and 17, respectively, which operate in guides 18 in connection with the corresponding end castings. The upper forward ends of the end plates each have a projecting lug 19, which extends into a corresponding lug 20 on the adjacent casting, and the end plates are thereby held from spreading. Each of the end plates has also a forwardly-projecting pin 21 at its lower forward end, which extends into a corresponding lug 22 on the adjacent casting. These pins tend to hold the end plates inwardly when the latter are in closed position. The upper rear end of each end plate has an overhanging hook 23, which engages a corresponding lug 24, which projects rearwardly from the adjacent rear side of the plate 10, and the end plates are thereby prevented from spreading.

Guide-bars 25 are secured, respectively, one to each of the end plates and extend rearwardly therefrom, the rear ends thereof extending through corresponding lugs 26, which project from a bracket 27, the latter being supported at the rear ends of the guides 18. The guide-bars 25 are of spring metal, and the lugs 26 are set in position to hold the bars slightly inward, which has the effect of pressing the end plates at their rear ends against the ends of the plate 10 and also of spreading the forward ends of the end plates.

A sliding core 28 is fixed upon a rod 29, which extends through a guide 30, and rests 31 project beneath the sides of the core and serve as a support and guide therefor. The core is adapted to be moved through an opening 32 in the stripping-plate and extend also at its forward end into a pallet 33, the latter being removable and located opposite the plate 10 between the forward ends of the end plates.

An operating-shaft 34 is mounted in bearings 35 at the respective rear ends of the castings 1 and 2, and a sleeve 36 is loosely mounted upon said shaft and extends through the adjacent bearing 35 and is adapted to oscillate upon said shaft and in said bearing. The inner end of the sleeve has fixed thereon an arm 37, which has connection with the rear end of the rod 29 by means of another rod 38, and when the sleeve is oscillated the core will accordingly be moved forward or backward. At the outer end of the sleeve is fixed a hook 39, and upon the shaft 34, adjacent the hook, is mounted an operating-lever 40, having an elongated slot 41, through which said shaft extends, the slot affording the lever lengthwise move-

ment. Upon the end of the shaft 34 adjacent the outer face of the lever 40 is fixed an arm 42, which is so curved inwardly as to extend in a plane adjacent the inner side of the lever 40, and said arm has a slotted lug 43, which ranges adjacent the outer face of the lever 40 and is adapted to become engaged by a lateral pin 44, which projects from both sides of said lever. The inner end of the pin 44 is adapted to be brought into engagement with the hook 39, and this may be done independent of the engagement of the pin with the lug 43 by disengaging the pin from the latter and manipulating the lever 40 so as to bring the inner end of the pin into connection with said hook. The upper end of the arm 42 has connection with the adjacent end plate 16 by means of a connecting-bar 45 and is adapted to slide the same upon the corresponding guide 18 when the arm is moved rearwardly. The arm 42 has fixed relation with the operating-shaft 34, and another arm 46 is also rigidly fixed at the opposite end of said shaft and has connection with the corresponding end plate 17 by means of a connecting-bar 47. It should appear that when the shaft 34 is oscillated both end plates will be actuated accordingly.

Upon the shaft 34 at a point thereon between the bearings 35 is fixed a crank 48, which has operating relation with a dog 49, the latter having pivotal connection with the back of the stripping-plate 10, as indicated at 50. The connection between the crank and dog is by means of a pin 51, projecting from the former and extending into an L-shaped slot 52 in the latter. The dog has a curved face 53, which acts against the shaft 34, by means of which the dog becomes pressed toward the plate 10 and forcibly holds the latter in normal position. The slot 52 is made in the peculiar form shown to admit of a partial turn of the shaft 34 before the dog shall have reached that point where the crank has the effect of moving the dog rearwardly, and thus the plate 10 will be detained in normal position until the end plates 16 and 17 and core 28 have been withdrawn from normal or forward position.

A pendent latch 54 is attached to the pin 51 on the crank 48, and when the frame is oscillated upon the base, so that the rear ends of the core and end plates are uppermost and said core and end plates are lifted to their open position, said latch will swing by gravitation, so that its end 55 will rest against the transverse rod 8, and thus lock said end plates and core in open position. When the frame is returned to normal position, the latch is removed from locked position by manipulating the lever 40 to slack the tension of said latch against said rod, so that the former will gravitate from engagement therewith.

A latch 56 is pivoted in connection with the casting 1 and is adapted to pass over the guide 7 when the frame is oscillated, as hereinbefore mentioned, and engage the rear side of the guide, and thereby hold said frame in its adjusted position until released by lifting said latch. A stop 57 projects from the side of the casting 1 and is adapted to limit the oscillating movement of the frame by coming into contact with the forward side of the guide 7.

In the operation of this invention the frame is placed in horizontal position, as shown in Fig. 1, and the end plates are moved forward into closed position and locked in place by means of hooks 58, which are fixed upon the outer ends of a lock-shaft 59 and which engage corresponding pins 60, which project, respectively, from the outer faces of the lugs 19 on the outer faces of the end plates. The hooks 58 are manipulated by turning the shaft 59, the latter having a handle 61 fixed thereon. The stripping-plate 10, pallet 33, and end plates 16 and 17, together with the face-plate 11, form the walls of a mold, and this mold is filled with a suitable concrete composition to a depth level with the lower edge of the opening 32 in the stripping-plate. The core 28 is then moved forward into the mold, its forward end extending into the pallet, and the remaining vacant portion of the mold is tamped full of said composition, the top being leveled off and troweled, as desired. The frame is then oscillated upon the base to its vertical or discharge position and is there held by the latch 56. By suitably actuating the lever 40 while the frame is in vertical position the core and end plates will become lifted because of their respective connections therewith, and said core and end plates will be held in their uppermost positions by the engagement of the latch 54 with the rod 8, and likewise the stripping-plate will be lifted because of its engagement with the crank 48. While the parts are in the positions just described, the pallet, together with the molded block of concrete, may be removed from the frame.

A feature of this invention is that because of the peculiar means of connection between the stripping-plate and shaft 34 the former will be retained in normal position until the end plates and core have been withdrawn, and in this manner the molded block of concrete is held between the pallet, face-plate 11, and stripping-plate 10 while the core and end plates are started in their withdrawal movement, and thus the concrete block is protected from becoming shattered. When the core and end plates have cleared from contact with the molded block, the stripping-plate 10 becomes lifted, as described, and the face-plate recedes from the adjacent face of the block because of the slack afforded by the slanting faces 15, which support the same.

Another feature of this invention is that the

forward ends of the end plates when released from connection with the lugs 20 and 22 spring slightly outward because of the action of their respective spring-guides 25, and therefore the end plates recede from the adjacent ends of the molded block, and their withdrawal is therefore made without a tendency to disturb the block.

It is obvious that the machine thus constructed has the advantages afforded by the horizontal position of the face-plate when molding the block, together with the further advantages of withdrawing the core and end plates vertically. Thus the operator is enabled to use a concrete mixture charged to a considerable degree with moisture, and especially does this appear when comparison is made with methods wherein the core is withdrawn horizontally, because that part of the block above the core tends to collapse if too moist when unsupported by the core. After the mold has been filled and the block has been properly formed therein the frame is oscillated upon the base to its vertical position, as hereinbefore described, and as it reaches this position the handle 61 strikes against a transverse shaft 62, connected with the base, this having the effect of turning the lock-shaft 59 so that the hooks 58 become disengaged from their connection with the corresponding end plates, so that the latter may be lifted as above described.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus of the class described, an oscillatable frame suitably supported upon a base; a stripping-plate in pivotal connection with the frame and having forwardly-projecting lugs; a swinging face-plate one end of which is supported upon said lugs; sliding end plates one each at the corresponding ends of the stripping-plate and face-plate; a pallet removably arranged in the frame opposite the stripping-plate and between said end plates; a core mounted in connection with the frame and adapted to be slid into proper relation with the stripping-plate and pallet; and an operating-shaft mounted in the frame having respective connections with the end plates and core to actuate the same.

2. In apparatus of the class described, an oscillatable frame having pivoted therein a stripping-plate and face-plate, the rear edge of the latter having connection with the former at the lower edge thereof to be supported thereby; sliding end plates at the respective ends of the face-plate and stripping-plate; a removable pallet arranged in the frame opposite the stripping-plate and between the end plates; means in connection with the end plates to lock respectively in connection with the stripping-plate and frame; a core mounted in connection with the frame and adapted to be slid into proper relation with the stripping-plate and pallet; and means in connection with the frame having actuating relation respectively with the end plates and core.

3. In apparatus of the class described, a frame having in connection therewith a face-plate and stripping-plate; a removable pallet supported in the frame in a position opposite the stripping-plate; sliding end plates respectively at the outer ends of said stripping-plate, face-plate and pallet, said end plates having spring guide-bars, the rear ends of which extend through suitable lugs in connection with the frame, each tending to hold the rear end of the corresponding end plate against the adjacent end of the stripping-plate and to spring the forward end thereof outwardly; and means in connection with the end plates and stripping-plate to actuate the same.

4. In apparatus of the class described, a frame having in connection therewith a swinging stripping-plate, the latter having forwardly-projecting lugs with receding faces; a swinging face-plate having pivotal connection with the frame and with its swinging inner edge resting upon said lugs to be supported thereby; sliding end plates arranged respectively adjacent the corresponding ends of the face-plate and stripping-plate, and having locking means in connection with the stripping-plate and frame; a removable pallet arranged in the frame opposite the stripping-plate and between the forward ends of said end plates; and an operating-shaft having means in connection with said end plates and stripping-plate to actuate the same.

5. In apparatus of the class described, an oscillatable frame having in connection therewith a mold comprising a stripping-plate, face-plate, pallet, end plates and core, the stripping-plate and face-plate each having swinging relation with the frame, and the end plates and core having sliding relation therewith; and an operating-shaft having respective connections with the end plates, core, and stripping-plate to actuate the same, and having also a latch in connection therewith adapted to become engaged in connection with the frame when the latter is in vertical position and the end plates and core have been withdrawn.

6. In apparatus of the class described, a mold suitably formed in connection with a supporting-frame, and having sliding end plates and a sliding core; an operating-shaft in connection with the frame, having arms in fixed relation with its ends which have actuating relation with the end plates; a sleeve loosely mounted upon the shaft, having an arm fixed at its inner end which has actuating relation with the core, and having at its other end a hook; and a lever having adjustable connection with the shaft and hav-

ing also means in connection therewith to severally engage and actuate said hook and the arm at the adjacent end of the shaft.

7. In apparatus of the class described, a frame having in connection therewith a mold comprising a swinging stripping-plate, face-plate, pallet, sliding end plates and core; an operating-shaft in connection with the frame having actuating relation with each of the end plates and core; a crank fixed on said shaft; and a dog in connection with the stripping-plate and crank, having a curved face which acts against the shaft and thereby causes the dog to hold the stripping-plate in closed position until the end plates and core have been withdrawn.

8. In apparatus of the class described, a supporting-base; an oscillatable frame mounted upon the base, and having in connection therewith a mold, parts of which consist of sliding end plates; an oscillating lock-shaft mounted in the frame, having a hook at each of its ends adapted to engage and lock the corresponding end plates when the latter are in closed position, and having also fixed thereon a handle; and means in connection with the base to engage and actuate said handle when the frame is oscillated to its vertical position and thereby release said hooks from their engagements with said end plates.

9. In apparatus of the class described, an oscillatable frame having in connection therewith a mold, parts of which consist of sliding end plates and a sliding core, each of which is mounted in connection with the frame and is movable therewith; and means also in connection with the frame for independently actuating the end plates and core.

10. In apparatus of the class described, an oscillatable frame suitably mounted upon a base and having a mold, parts of which consist of sliding end plates, sliding core, and a swinging stripping-plate; mechanism in connection with the frame to actuate said end plates, stripping-plate and core; and a swinging latch in connection with said mechanism adapted to become engaged in connection with the frame when the latter is in vertical position and thereby lock said end plates, stripping-plate and core in open position, the said latch being also adapted to gravitate from its locking connection with the frame when the latter is in horizontal position.

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

BRITTON POULSON.

Witnesses:
W. G. BURNS,
M. METTLER.