B. L. BLAIR.

MACHINE FOR MAKING CEMENT BLOCKS.

APPLICATION FILED SEPT. 18, 1908.

951,099.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

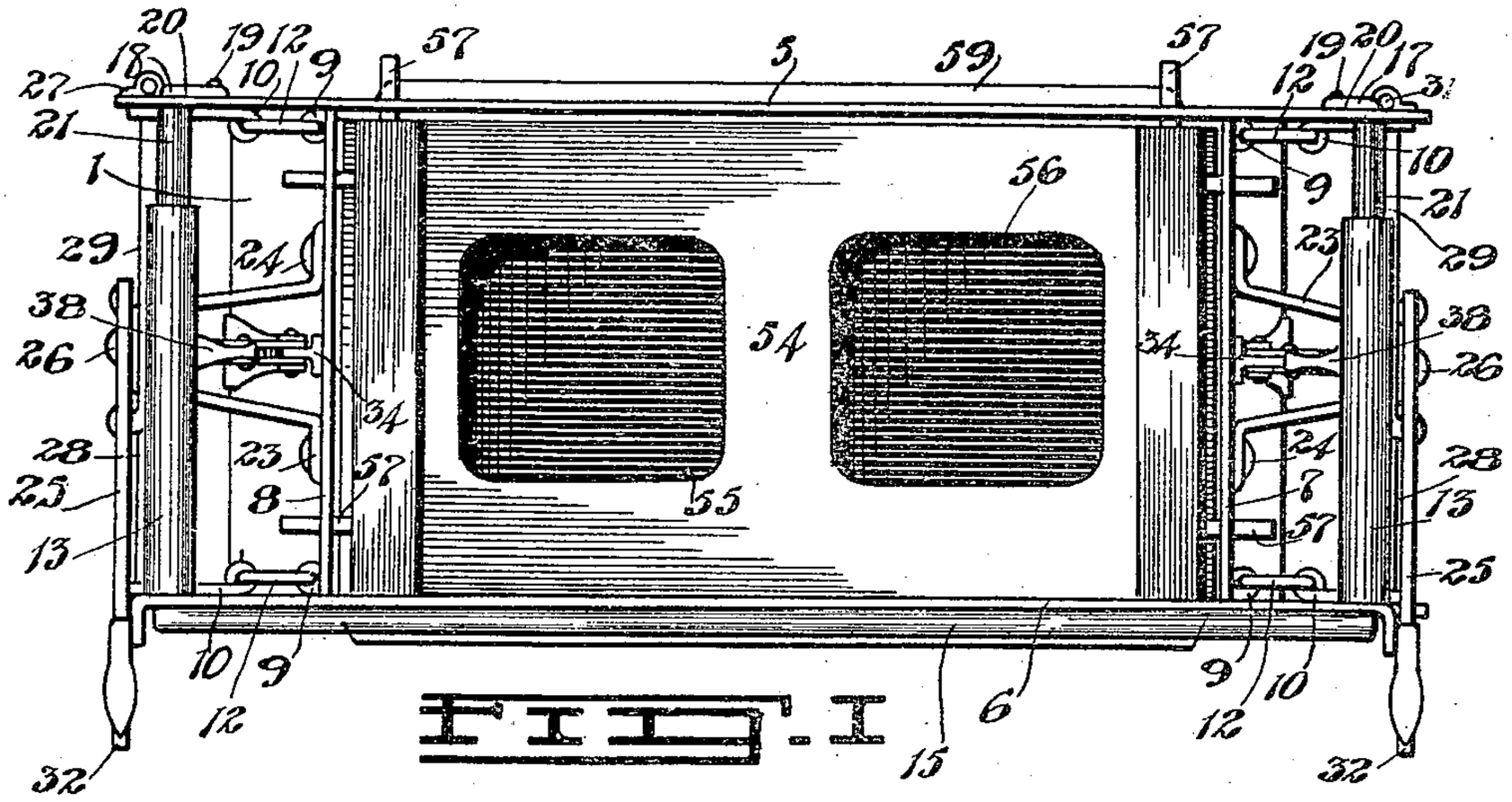

FIG. 1.

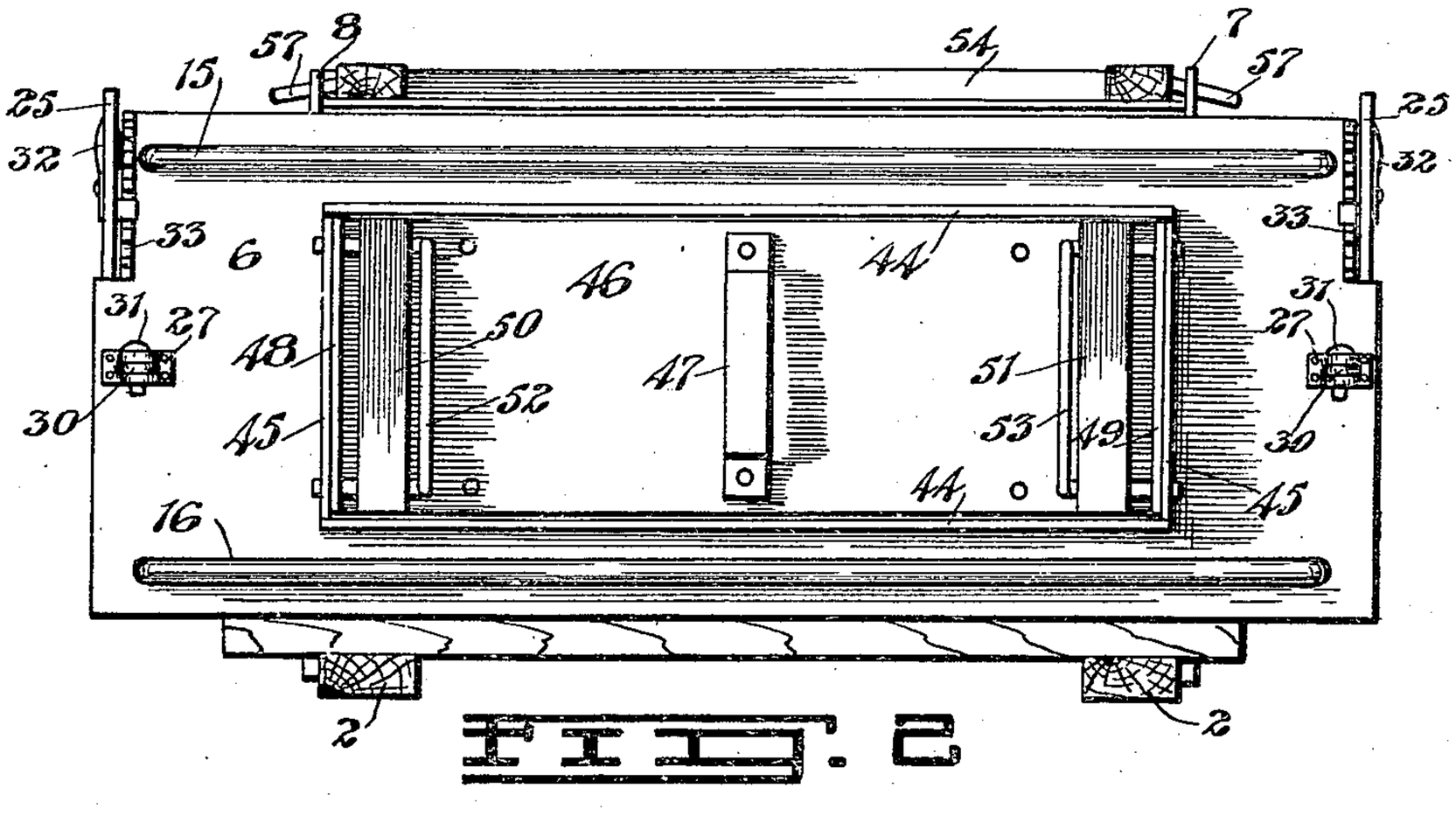

FIG. 2.

WITNESSES

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2 SHEETS—SHEET 2.

FIG. 3.

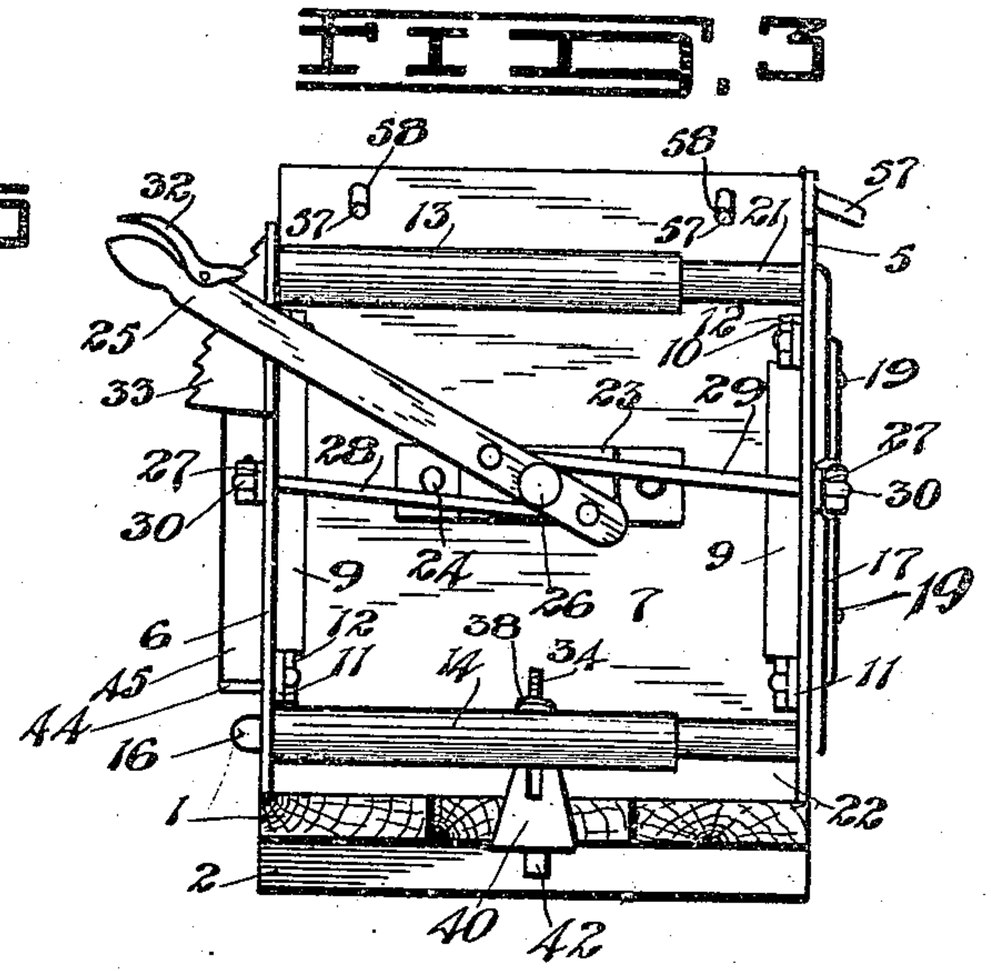


FIG. 5.

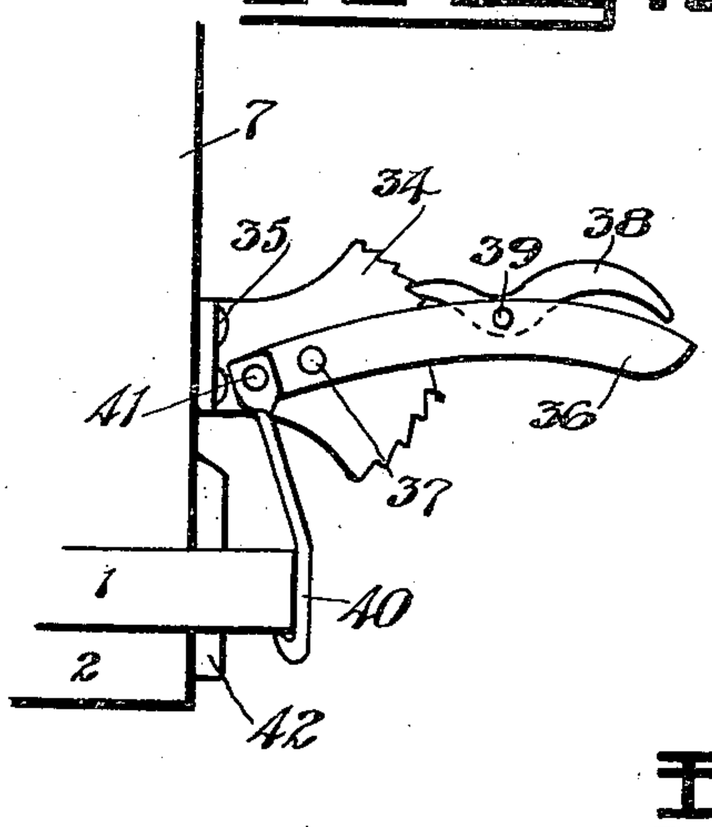
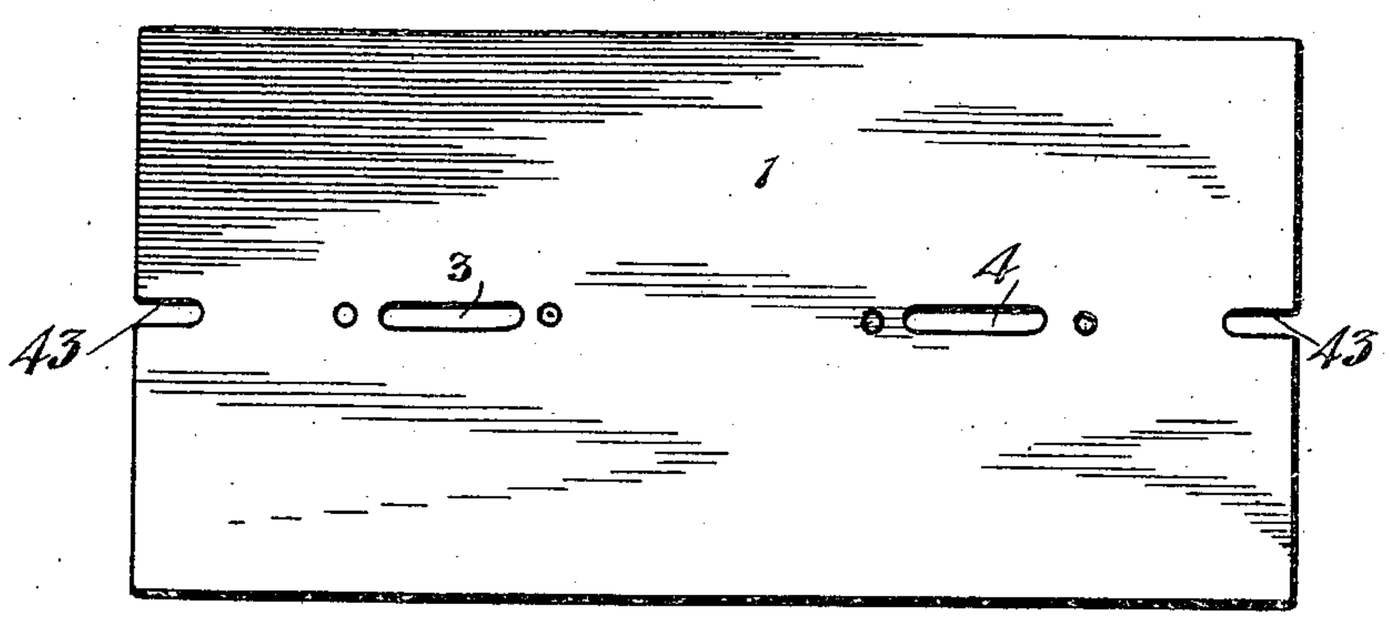


FIG. 4.



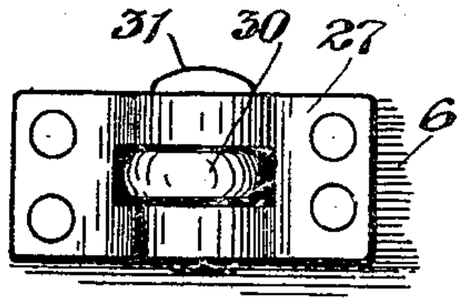


FIG. 6.

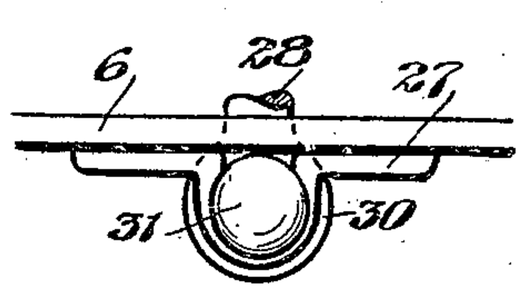


FIG. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

BENJAMIN LEROY BLAIR, OF DRYDEN, ONTARIO, CANADA.

MACHINE FOR MAKING CEMENT BLOCKS.

951,099. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed September 18, 1908. Serial No. 453,616.

To all whom it may concern:

Be it known that I, BENJAMIN LEROY BLAIR, of the village of Dryden, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Machines for Making Cement Blocks, of which the following is the specification.

My invention relates to machines for making cement blocks, particularly to that class of machines which are equally adaptable for making blocks, either face down or face to the side.

The object of the invention is to provide a simple, inexpensive and an easily operated machine in which it is unnecessary to move the block after it has been molded, such machine being in reality an improvement on one already described by me in my application for patent, filed the 23rd day of July, 1908, under Serial #445031, in the United States of America.

It consists essentially in a pallet or base plate, hinged side and end plates resting and guided on the base plate, means for forcing the side plates apart and drawing them together, a removable top and a removable side plate whereby the block may be made face to the side or face down, the parts being arranged and constructed as hereinafter more particularly described.

Figure 1 is a plane view of the machine showing it closed, and in the position in which it is used in making the block face to the side. Fig. 2 is a side elevation of the machine as in Fig. 1. Fig. 3 is an end view of the machine. Fig. 4 is a plane view of the pallet plate. Fig. 5 is an enlarged detailed side elevation of the means employed for securing the end plates to the pallet plate. Fig. 6 is an enlarged detailed side view showing the manner in which the links are connected to the side plates. Fig. 7 is a plane view as in Fig. 6.

In the drawings like characters of reference indicate corresponding parts in each figure.

1 represents the pallet plate, which in actual use is placed horizontally and provided with cross reinforcing strips 2. The plate is provided with similar longitudinal slots 3 and 4 for the purpose of securing the usual cores to the pallet plate. The manner in which this is done is not here enlarged upon, as it is the same as described in the herein before mentioned application, where the slots 8 and 9 correspond to those 3 and 4.

5 and 6 are two side plates held on their edge on the pallet as later described, the height of the member 6 being somewhat greater than that which is necessary for the height of the block desired, and their length somewhat greater than the pallet plate. The plate 5 is higher than the plate 6 in order to receive extending pins as later described.

7 and 8 are end plates placed at right angles to the plates 5 and 6, both of such plates being of a height equal to that of the member 5. The plates 7 and 8 have an extending portion formed at their vertical edges, which is rolled back outwardly at 9, to form with parts later to be described, hinges.

10 and 11 are lugs fastened securely to the inner face and in pairs toward the ends of the side plates 5 and 6, there being an upper and lower lug at each end of the plates. The lugs are provided with eyes through which pass rods 12, which extend across to the end plates and enter the rolled-back portions 9, in this way hinging the side and end plates together.

13, 13 and 14, 14 are tubular rods secured in pairs to the side plate 6; the tubes 13 appearing toward the ends and the top, and those 14 directly below those 13 and toward the bottom.

15 and 16 are rods passing longitudinally of the plate 6 at its outer edge, such rods having their ends bent at right angles and passing into and through the plate, whereby they are received and secured within the hollow center of the sets of tubes 13 and 14, respectively.

17 and 18 are rods secured by bolts 19 to the outer face of the plate 5, such rods having their ends doubly bent in an L-shaped manner to form a bearing face at 20 against the plate, the extending ends 21 and 22 passing through the plate and telescoping with the tubes 13 and 14, respectively.

23 are brackets secured firmly by bolts 24 to each of the end plates 7 and 8, such brackets being placed centrally and at the outer side of the plates.

25 are levers pivotally secured to the brackets by pins 26.

27 are plates fastened securely to the outer face toward the ends of the plates 5 and 6 and substantially in the same horizontal plane as the pins 26.

28 and 29 are links having their inner

ends secured to the levers 25, the one above and the other below the pivotal point. The outer ends of the links are formed with eyes 30, which pass through openings in the plates 5 and 6, and are secured by pins 31 to the plates 27 already referred to. It will thus be seen that the position of the plates 5 and 6 is directly controlled by the levers 25 and the links 28 and 29 and that they can be forced apart or drawn together at will by such levers. The motion of the plates 5 and 6 is transferred directly to the end plates 7 and 8 through the rods 12, so that when the side plates are forced apart the end plates recede from each other and vice versa.

32 are hand latches secured to the levers and positioned so as to engage with toothed plates 33, appearing at the ends of the plate 6. The levers are held in any desired position by the latches engaging with the teeth.

34 are quadrants bolted at 35 centrally and toward the lower edge of the end plates 7 and 8; and 36 are forked levers having their arms spanning the quadrants 34 and secured by pins 37 thereto.

38 are hand latches secured between the arms of the levers by bolts 39 in such a manner that the one end of the latch is free to engage with the teeth of the adjoining quadrant.

40 are claws having their upper ends forked and secured at 41 to the ends of the lever arms.

42 are pins fastened firmly and centrally to the plates 7 and 8 at their lower edges, the one end of each pin passing beyond the edge of the plates.

43 are opposing slots extending inwardly from the center of the ends of the pallet, such slots being formed to receive the pins 42, thereby causing the end plates always to move in a direct line passing longitudinally of the pallet. The levers 36 and claws 40 are for the purpose of releasably securing the end plates and with them the side plates to the pallet.

The plate 6 has its central portions cut away forming a rectangular opening bounded by the outwardly turned flanges 44 and 45, constructed from the material of the plates.

46 is a rectangular plate or cover adapted to enter the rectangular opening, and 47 is a handle secured centrally to the plate. The ends of the plate are flared outwardly at 48 and 49, and cross strips 50 and 51 are secured to the plate, slightly to the side of the outwardly flared ends.

52 and 53 are locking rods passing through the strips 50 and 51, respectively, and into registering openings provided in the flanges 45 and in the outwardly turned ends 48 and 49. In order to remove the plate 46 it is only necessary to withdraw the rods 52 and 53 from the openings.

54 is a second cover having openings 55 and 56 provided therein to receive the core boxes. The latter cover is supplied at its ends and one of its sides with downwardly directed pins 57, which are adapted to enter openings 58, provided toward the upper edge in the plates 5, 7 and 8, respectively. The plate 5 may be pressed or shaped in order to present the necessary ornamental face which is required on cement blocks, or such plate may be formed so that any desired form of face may be applied to the block by inserting a detachable molding plate. This forms no portion of my present invention and may be as desired in any particular case.

In order to better understand the manner in which the machine is used, I will now describe it when used to make a block with the ornamental face to the side. In this case the core boxes are secured to the pallet; and the plates 5, 6, 7 and 8 are closed by adjusting the levers 25. In this position they are secured to the pallet by the claws 40 and levers 36, and the plates appear in position in respect to the pallet, as shown in the drawings. The plate 46 is placed within the rectangular opening, already referred to, closing it; and the cement is placed in the machine in the usual manner from the top, the cover 54 having previously been removed. When the block is set the claws 40 are released and the plates forced apart by the combined motions of the levers and the rods 12 and the block is allowed to set and harden on the pallet, the remainder of the machine being removed.

When it is desired to make a block with the ornamental face down the cover 54 is placed in position and the plates are brought together by operating the levers as already described. The cover 46 is then removed and the machine after having been fastened to the pallet by the claws is turned on its side with the ornamental face down. Cement is then filled in between the plates through the rectangular opening formed by the removal of the cover 46 to a height which brings it level with the edge of the openings 55 and 56. The core boxes are then placed in position and the cement filled in and tamped to the proper level around the core boxes to form the remainder of the block. When the block is complete the machine is turned to the original position and the plates are removed from the block in the manner already indicated. It is to be noticed that when the plates are receding the cover 54 passes away from the pallet, such being caused by the downwardly inclined pins 57. This is necessary in order to leave the block free when making them face down as just described. In order that the cover 54 may be removed when desired the pins 56 are formed so as to screw readily into the cover.

This machine is a great deal cheaper to

construct than the one referred to in my prior application, as it will be noticed the rectangular frame therein provided is entirely done away with, and it has also the advantage of being able to make a block, either face to the side or face down, which it is impossible to do with the former machine.

What I clam as my invention is:

1. In a cement block machine the combination with the supporting pallet having a set of opposing vertically directed side and end plates, hinged the one to the other in such a manner that when the side plates recede the end plates are forced apart, of a quadrant secured to the end plates and a lever having a hand latch engaging with the quadrant and a depending claw adapted to engage with the pallet, as and for the purpose specified.

2. In a cement block machine the combination with the supporting pallet having a set of opposing vertically directed side and end plates, hinged the one to the other in such a manner that when the side plates recede the end plates are forced apart, of quadrants secured centrally to and toward the lower edge of the end plates; a forked lever fastened to each of the quadrants by a bolt passing through the arms of the lever, somewhat backwardly from the ends, said levers carrying each a hand latch designed to engage with the adjoining quadrant, and a depending claw pivotally connected to the ends of the lever arms, as and for the purpose specified.

3. In a cement block machine the combination with one of the side plates, said plate having a rectangular opening therein, bounded by outwardly turned flanges formed of the material of the plate, of a rectangular plate having its ends flared outwardly and adapted to enter the opening, such flared ends and flanges having registering openings provided therein, cross strips secured to the plate toward its ends and locking rods carried by the cross strips and adapted to enter the openings to hold the inserted plate in closed position, as and for the purpose specified.

Signed at Dryden, in the Province of Ontario, this 30th day of July, 1908.

B. LEROY BLAIR.

Witnesses:
MAX SCHELLENBERG,
A. B. ORVIS.