No. 870,006. PATENTED NOV. 5, 1907.

C. WOLFENDEN.

CONCRETE BLOCK MACHINE.

APPLICATION FILED MAR. 8, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

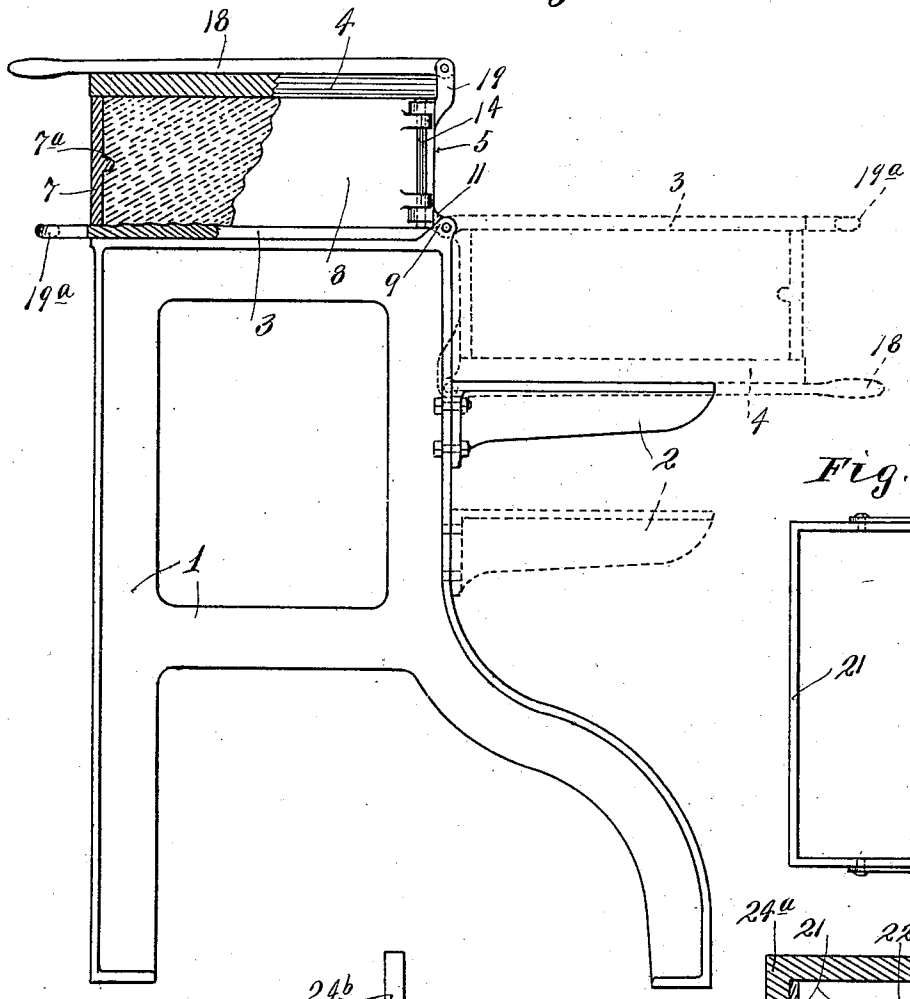
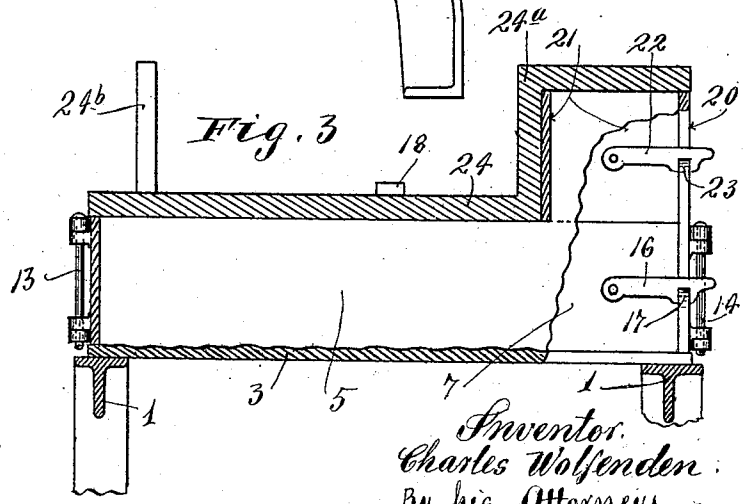


Fig. 4.

Fig. 3



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2 SHEETS—SHEET 2.

Fig. 2.

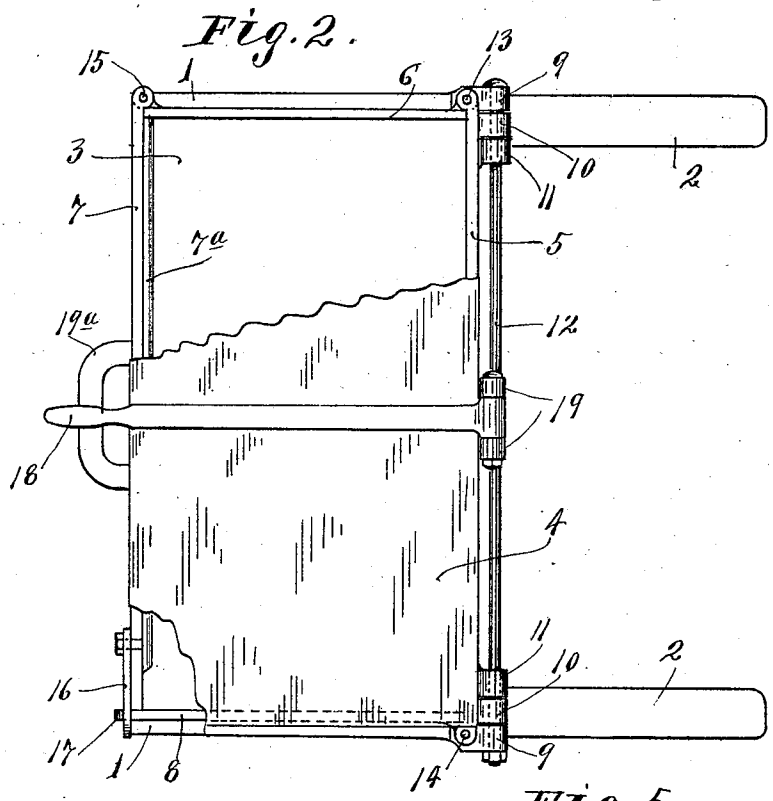
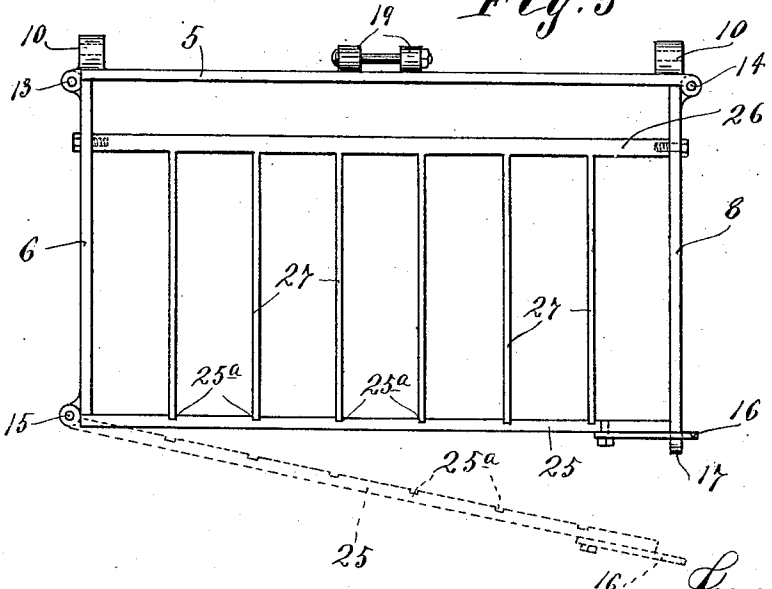


Fig. 5



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UNITED STATES PATENT OFFICE.

CHARLES WOLFENDEN, OF MINNEAPOLIS, MINNESOTA.

CONCRETE-BLOCK MACHINE.

No. 870,006. Specification of Letters Patent. Patented Nov. 5, 1907.

Application filed March 8, 1907. Serial No. 361,209.

To all whom it may concern:

Be it known that I, CHARLES WOLFENDEN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Concrete-Block Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a simple and efficient machine for making concrete blocks and bricks, and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view chiefly in side elevation, but with some parts broken away, some parts sectioned, and some parts indicated by dotted lines, showing my improved machine. Fig. 2 is a plan view of the machine, with some parts broken away. Fig. 3 is a vertical section with some parts shown in full, illustrating a modified form of the machine adapted for forming corner blocks. Fig. 4 is a detail view in plan of one of the parts used in making corner blocks; and Fig. 5 is a plan view illustrating a modified construction, which adapts the machine for making bricks.

The supporting frame of the machine is made up of a pair of laterally spaced pedestal brackets 1 that are adapted to be tied together by tie rods or any other suitable devices (not shown). A pair of pallet board supporting arms or brackets 2 are secured to the front edges of the pedestal brackets 1. One of these supporting arms 2 is adapted to be moved downward and secured in a lowered position, indicated by dotted lines in Fig. 1, for a purpose which will hereinafter appear.

The mold box of the machine is adapted to be turned upside down or from the position shown in full lines into the position shown by dotted lines in Fig. 1. This mold box is made up of a so-called bottom plate 3, a pallet board 4 and four wall plates 5, 6, 7 and 8. The wall plates 5 and 7 are adapted to form, respectively, the top and bottom faces of the block, while the wall plates 6 and 8 are adapted to form the ends of the block. The pedestal brackets 1, bottom plate 3 and wall plate 5 are provided respectively, with hinged lugs 9, 10 and 11, through which a hinge rod 12 is passed, thereby pivotally connecting the said plates 3 and 5 for movements on said rod. The wall plate 6, at one end, is pivotally connected to the adjacent end of the wall plate 5 by a hinged bolt or pin 13, and the end plate 8 is likewise pivotally connected to the other end of said plate 5 by a hinge bolt or pin 14. The wall plate 7 is pivotally connected to the free end of the end plate 6 by a hinge bolt or pin 15. At its free end, the wall plate 7 is provided with a pivoted latch hook 16 that is adapted to engage with the fixed lock hook or lug 17 on the free end of the end plate 8. When the hook 16 is engaged with the lug 17, the four wall plates are rigidly locked together in rectangular arrangement. The pallet board 4 is a loose member and is adapted to be temporarily clamped to the top of the mold by a clamping lever 18 which is pivotally connected at one end to lugs 19 on the upper central portion of the wall plate 5. Underlying the free end of the lever 18, the so-called bottom plate 3 is provided with a projecting hand-piece 19^a. On its inner face, the wall plate 7 is shown as provided with a rib 7^a which will form a groove in the upper face of the block, as may be desirable in making blocks for a continuous air space wall wherein metallic spacing bonds are used.

The machine described is what is known as a face down machine, that is, in which the exposed face whether smooth, rock faced, or other ornamental design, is formed at the bottom of the mold. In the drawings, the upper face of the bottom plate 3 is formed irregular to produce an imitation of rock face.

The concrete made up of the proper mixture of sand, cement and water is introduced into the mold box, while the bottom plate and the four wall plates are in the position shown by full lines in Fig. 1, but at which time, of course, the pallet board 4 is removed. After a block has been properly tamped and formed, and the upper surface thereof troweled off, the pallet board is placed in position on top of the mold and is clamped by means of the lever 18, and the entire mold is then turned upside down or into the position shown by dotted lines in Fig. 1. This movement places the formed block on top of the pallet board and brings the so-called bottom plate 3 at the top of the mold. Said plate 3 is then turned over out of the way, and the latch hook 16 being separated from the lock lug 17, the three wall plates 6, 7 and 8 are moved pivotally so as to release their hold on the block. The pallet board at this time is supported by the two arms 2. The formed block may, of course, be removed and carried away on the pallet board and another pallet board used in the formation of the next block.

In forming corner blocks, the end plate 8 is removed and a wider or higher end plate 20 is substituted therefor, and is connected by means of the same pivotal connection described in connection with the end plate 8. Also, an approximately U-shaped but rectangular extension plate 21 is applied in connection with the upper portion of the end plate 20 to form the laterally extended portion or short end of the block. To the laterally spaced sides of this extension plate 21 latch hooks 22 are pivoted, and these engage lock lugs 23 on the

edges of the upper portion of said end plates 20. Also, in this modification, a pallet board 24 having an offset angular portion 24^a is employed in lieu of the flat pallet board 4 above described. This pallet board 24 is shown as provided with a projecting leg 24^b that is adapted to rest upon the ground and support the pallet board in a horizontal position when said board is turned upside down with the formed block. When making corner blocks, one of the arms 2 is preferably moved down into the position shown by dotted lines in Fig. 1, so that it will engage the under portion of the rectangular extension 24^a while the other arm will engage the body of the said pallet board 24.

In forming corner blocks, the body of the block is first formed and tamped and then the angular extension plate 21 is applied and the upwardly extended end of the block is formed. In practice, the angular extension plate 21 should be removed after the upwardly extended end of the block has been formed but before the pallet board 24—24^a is applied to the block. Otherwise than above indicated, the construction and operation of the machine in making corner blocks is the same as when used to make ordinary straight blocks.

In Fig. 5, a brick making attachment is shown. In this modification, a wall plate 25 is substituted for the plate 7. This plate is like said plate 7 except that it is provided on its inner face with grooves 25^a. A bar or wall plate 26 is secured by screws or otherwise to the end plates 6 and 8. This plate 26 is provided with laterally spaced partition plates 27, the projecting ends of which are adapted to enter the grooves 25^a of the plate 25.

What I claim is:

1. In a machine of the kind described, the combination with a supporting frame, of a bottom plate, two side plates and two end plates, one of which side plates and said bottom plate being pivoted to said frame by axially alined hinges, the said end plates being hinged to the free end of one of said wall plates, a latch for securing the adjacent end of said latter hinged side plate to the adjacent end plate, a pallet board applicable to the top of the mold, a clamping lever hinged to one of said side plates and engageable with said pallet board, and a hand piece projecting from the free edge of said bottom plate and together with said clamping lever affording means for turning the mold upside down with the formed block, substantially as described.

2. In a machine of the kind described, the combination with a supporting frame having projecting supporting arms located below its upper portion, one of said arms being vertically adjustable with respect to the other, of a bottom plate and four wall forming plates connected by hinges, adapting the mold to be opened up and the entire mold to be inverted or turned upside down, an extension plate applicable to one end of said mold for forming corner blocks, a loose pallet board applicable to the top of the filled mold, and means for clamping said pallet board to the mold while the same is being turned upside down, the said supporting arms of which frame are adapted to receive and support the pallet board when the said mold is inverted, substantially as described.

3. In a machine of the kind described, the combination with a supporting frame, of a bottom plate hinged thereto, four wall plates connected to said frame for movement with said bottom plate, an angular extension plate applicable to one end of the mold for forming corner blocks, and an angular pallet board applicable to the top of the body and upwardly extended end portion of the mold, and reversible with the mold, substantially as described.

4. In a machine of the character described, the combination with a supporting frame, of a bottom plate hinged thereto, four wall plates connected by hinges and a latch, and connected to said frame for pivotal movements with said bottom plate, an approximately U-shaped rectangular extension plate applicable to one end of the mold and cooperating with one of the end plates thereof to form the extensions of corner blocks, and an angular pallet board applicable to the top of the body and the extended end portion of the mold and reversible therewith, substantially as described.

5. In a machine of the kind described, the combination with a supporting frame, of a bottom plate hinged thereto, four wall plates in rectangular arrangement connected to said frame and reversible with said bottom plate, one of said four plates being connected for a hinge-like opening movement, a bar secured to the end members of said wall plates and provided with laterally spaced partition plates coöperating with said hinged wall plate to form a multiplicity of bricks or small blocks, and a pallet board applicable to the top of the mold and reversible therewith, substantially as described.

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

CHARLES WOLFENDEN.

Witnesses:
MALIE HOEL,
F. D. MERCHANT.