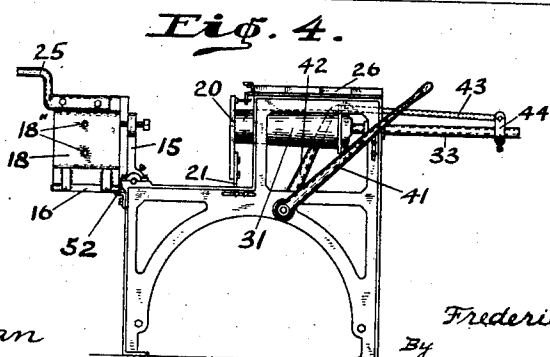
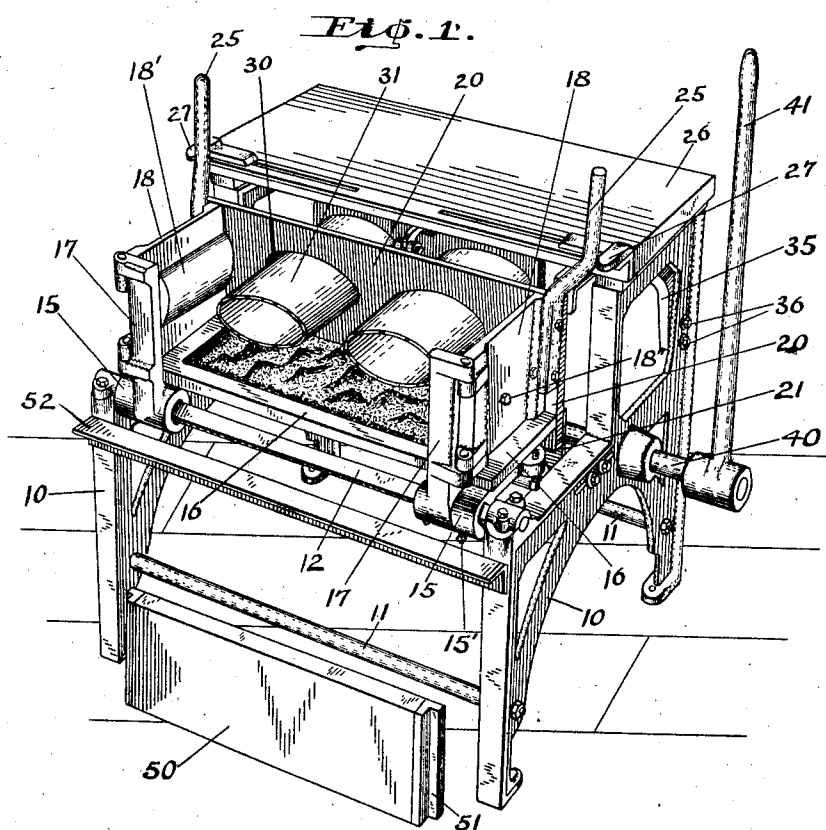


No. 830,620.

PATENTED SEPT. 11, 1906.

F. A. STARE.
CEMENT BLOCK MACHINE.
APPLICATION FILED NOV. 6, 1905.

2 SHEETS—SHEET 1.



Witnesses
Fred A. Duncan
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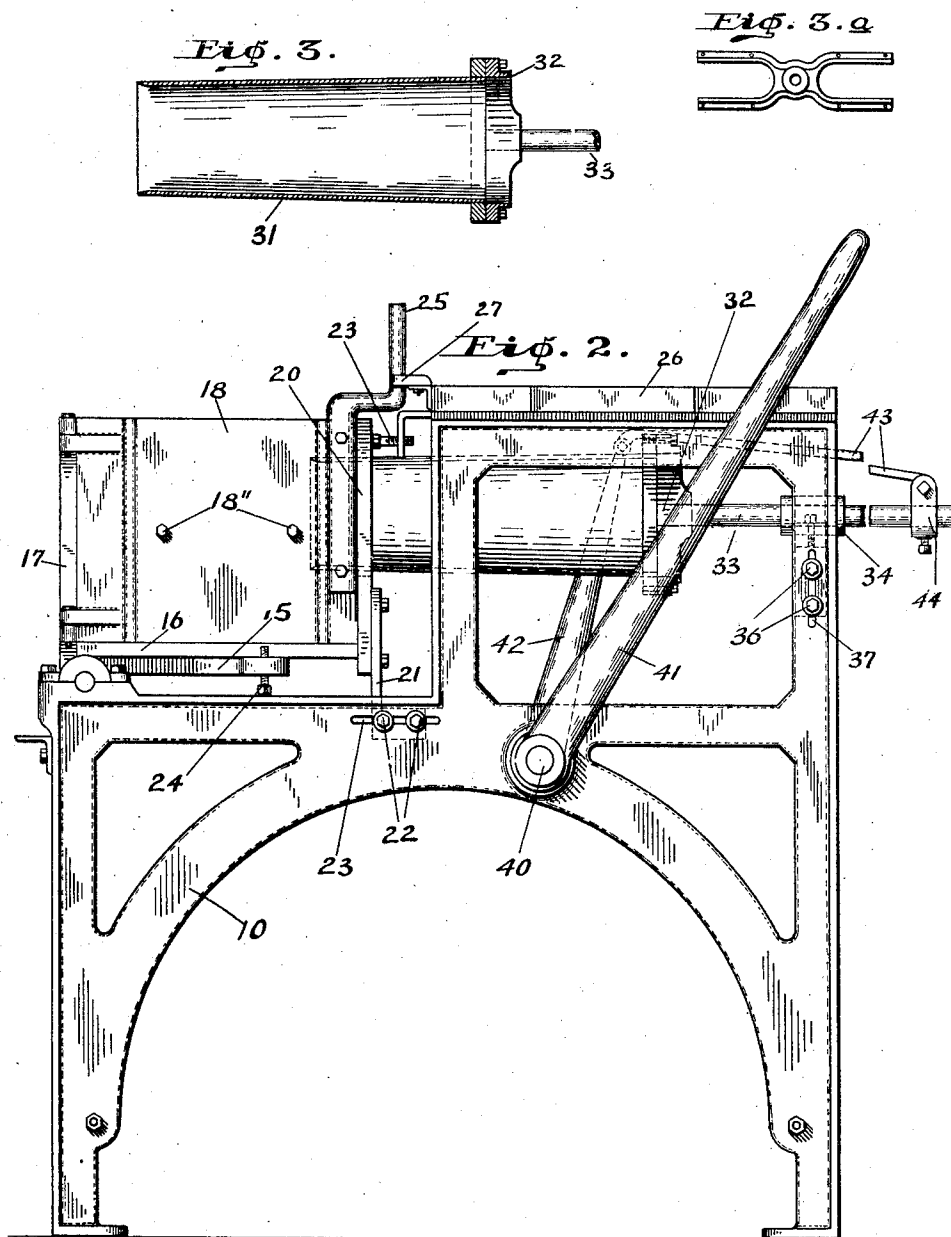
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UNITED STATES PATENT OFFICE.

FREDERICK A. STARE, OF FRANKFORT, INDIANA.

CEMENT-BLOCK MACHINE.

No. 830,620.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed November 6, 1905. Serial No. 286,064.

To all whom it may concern:

Be it known that I, FREDERICK A. STARE, a citizen of the United States, residing at Frankfort, in the county of Clinton and State of Indiana, have invented certain new and useful Improvements in Cement-Block Machines, of which the following is a specification.

The object of my invention is to produce a simple machine for making concrete building-blocks, the construction being such, however, as to permit the construction of a large number of different size of blocks without complication of parts.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of a machine embodying the invention, the pallet having been removed. Fig. 2 is a side elevation of the machine; Fig. 3, a sectional detail of one of the cores; Fig. 3^a, a detail elevation, on a smaller scale, of the cross-bar to which the hollow cores are attached; and Fig. 4, a side elevation, on a smaller scale, showing the mold swung to discharging position.

In the drawings, 10 10 indicate a pair of side frames connected by suitable braces 11. Journaled at the front corner of the frame thus formed is a shaft 12, the middle of which is polygonal in cross-section. Sleeved upon shaft 12, so as to be longitudinally adjustable thereon, but so as to rotate therewith, are two arms 15 15, which are adapted to receive the face-plate 16 of the mold, said arms being held in longitudinal adjustment on the shaft 12 by any suitable means, such as set-screws 15'. Also secured to the shaft 12 and axially adjustable thereon, but rotatable therewith, are two arms 17 17, which are arranged on the shaft 12 between the arms 15 and at right angles to said arms. A convenient method of securing the proper angular position of the arms 17 relative to the arms 15 is to provide the hubs of the several arms with openings somewhat larger than the polygonal portion of the shaft 12 and after setting the arms in proper relation obtain a proper fit on the shaft by means of Babbitt metal. Hinged upon each arm 17 is a plate 18, the two of which form the ends of the mold. The lower edges of plate 18 swing slowly over the plane of the upper face of the plate 16. Blocks 18' are detachably secured to the inner faces of the end plates 18 by suitable bolts 18".

Mounted between the frames 10, immediately to the rear of the rear edge of the plate

16, is a back plate 20, which is secured at its lower edge to brackets 21, horizontally adjustable toward and from the shaft 12 by means of bolts 22, passing through slots 23, formed in the frame 10. In order to accurately square up the plate 20 and face-plate 16, I provide adjusting-screws 23, against which the upper edge of plate 20 may abut, and adjusting-screws 24, which are carried by the arms 15 and rest upon the frame 10 when the parts are in operating position.

Secured to each end plate 18 is a handle 25, by means of which the parts carried by shaft 12 may be turned forward.

The upper rear portions of the two frames 10 are connected by a top plate 26, upon which are arranged two fingers 27 27, which are adjustable toward and from each other, as shown, and which serve to engage the handle members 25 when the parts are in molding position and accurately determine the position of the end plates 18. The back plate 20 is provided with suitable perforations 30, through which cores 31 may be projected, said cores being detachably secured to a bar 32, carried by a shaft 33, which is axially reciprocable through a bearing 34. Bearing 34 is carried by a bracket 35, vertically adjustable between the frames 10 by means of suitable bolts 36, passing through slots 37. I prefer to make the cores 31 hollow and sharpen their forward ends, as shown in Fig. 3, for a purpose which will appear.

Journaled in the two frames 10 is a shaft 40, to the outer end of which is secured an operating-lever 41. Attached to the middle portion of the shaft 40 is an arm 42, which extends upward and has pivoted to it a link 43, which extends back to the rear end of the shaft 33 and is pivotally attached thereto by means of a longitudinally-adjustable bracket 44. By making the link 43 of considerable length it will be noticed that the swing of arm 42 will not materially throw the link out of substantial parallelism with the shaft 33, so that it will exert practically a direct pull on the shaft.

In order to complete the mold, I provide a plurality of pallets 50, which are adapted to fit upon and between the arms 17 in opposition to the back plate 20 and are chambered, as at 51, at each end, so as to furnish space for the fingers to permit withdrawal of the pallet and block thereon. These pallets may be made of any desired material, preferably wood. The face-plate 16 may be provided

with any ornamental surface, so as to form any desired character of outer face of the block to be formed. In order to form a support for the various parts of the mold when the completed block is made and ready to be discharged, I provide an angle-iron 52, which extends between the standards 10 in front of and slightly below the shaft 12.

It will be noticed that the arms 15 and 17 may be independently adjusted lengthwise of the shaft 12, so that any desired length of block may be obtained without other change of parts. Of course where the face-plate having an ornamental portion is used if a shorter block is desired it may be necessary to substitute a different face-plate; but this may be readily done, as the face-plate merely rests upon the arms 15. In order to obtain a block of less thickness, it is merely necessary to adjust the face-plate 20 toward the shaft 12 by means of the adjustable bracket 21 and to then substitute shorter gates 18. If a half-block is desired, one or the other of the cores 31 may be detached and one arm 17 shifted on the shaft 12 to the desired medial position, the fingers 27 being correspondingly adjusted to hold the parts in proper relation. If a thinner form is desired, a thinner back plate 20 may be attached to the brackets 21, narrower gates 18 substituted, and the core-supporting bracket 35 lowered to fit the new back plate. It will therefore be seen that a wide range of size of blocks may be had without the necessity of a material change in the machine, the difference being obtained by mere adjustment of parts or a substitution of some of the minor parts.

In operation the parts will be assembled as shown in Fig. 1, the pallet 50, however, being placed in position between the arms 17 at right angles to the face-plate 16. The cores 31 are then retracted to the position indicated in Fig. 4, whereupon the mold is filled with concrete up to or slightly above the level of the lowest portions of the core-openings 30. The cores are then projected into the mold, their sharpened ends serving to cause the molds to pass readily through any surplus concrete, the surplus passing into the cores and in course of time being forced out through the back ends. The mold is then entirely filled. The cores 31 are then retracted, and the operator by grasping handles 25 may swing the shaft 12 upon its axis, so as to bring the parts to the position shown in Fig. 4. Thereupon the ends 18 may be folded down and the pallet 50, with the formed block thereon, may then be readily removed, the parts reassembled, a new pallet inserted, and the operation repeated.

I claim as my invention—

1. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, two independent pairs of arms carried by said shaft one pair of said arms serv-

ing as a support for a mold face-plate, the said face-plate, a pair of end-gates hinged respectively to the other pair of said arms, and a relatively stationary back plate carried by the frame in position to cooperate with the face-plate and end-gates.

2. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, two independent pairs of arms carried by said shaft one pair of said arms serving as a support for a mold face-plate, the said face-plate, a pair of end-gates hinged respectively to the other pair of said arms, a back plate carried by the frame in position to cooperate with the face-plate and end-gates, and means for adjusting said back plate toward and from the shaft.

3. In a cement-block machine, the combination, with a suitable frame, of a shaft journaled therein, two independent pairs of arms mounted on said shaft and independently adjustable longitudinally thereof, a face-plate supported by one pair of arms, a pair of end-gates hinged respectively to the other pair of said arms, and a relatively stationary back plate carried by the frame.

4. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, two pairs of arms mounted on said shaft and independently adjustable longitudinally thereof, a face-plate supported by one pair of arms, a pair of end-gates hinged to the other pair of said arms, a pallet removably supported between said last-mentioned arms, a back plate carried by the frame, and means for adjusting said back plate toward and from the shaft.

5. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein and having a polygonal middle portion, face-plate-supporting arms mounted on said shaft and having polygonal openings fitting the middle portion of said shaft and permitting longitudinal adjustment of the arms on the shaft, the face-plate supported by said arms, independent end-plate-supporting arms having polygonal openings fitting the middle portion of said shaft and permitting longitudinal adjustment thereof, an end plate hinged to each of said last-mentioned arms to cooperate with the face-plate, and a back plate carried by the frame, substantially as and for the purpose set forth.

6. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein and having a polygonal middle portion, face-plate-supporting arms mounted on said shaft and having polygonal openings fitting the middle portion of said shaft and permitting longitudinal adjustment of the arms on the shaft, the face-plate supported by said arms, end-plate-supporting arms having polygonal openings fitting the middle portion of said shaft and permitting longitudinal adjustment thereof, an end plate hinged

to each of said last-mentioned arms to cooperate with the face-plate, a back plate carried by the frame, and means for adjusting said back plate toward and from the shaft.

5 7. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, two pairs of arms carried by said shaft one pair of said arms serving as a support for a mold face-plate, the said face-plate, 10 end-gates hinged to the other pair of said arms, a relatively stationary back plate carried by the frame in position to cooperate with the face-plate and end-gates, core-forming means, and means for projecting said 15 core-forming means through the back plate over the face-plate.

8. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, two pairs of arms carried by said 20 shaft one pair of said arms serving as a support for a mold face-plate, the said face-plate, end-gates hinged to the other pair of said arms, a back plate carried by the frame in position to cooperate with the face-plate and 25 end-gates, means for adjusting said back plate toward and from the shaft, core-forming means, and means for projecting said core-forming means through the back plate over the face-plate.

9. In a cement-block machine, the combination, with a suitable frame, of a shaft journaled therein, two pairs of arms mounted on said shaft and independently adjustable longitudinally thereof, a face-plate supported 35 by one pair of arms, a pair of end-gates hinged to the other pair of said arms, a relatively stationary back plate carried by the frame, core-forming means, and means for projecting said core-forming means through 40 the back plate over the face-plate.

10. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, two pairs of arms mounted on said shaft and independently adjustably longitudinally thereof, a face-plate supported by 45 one pair of arms, a pair of end-gates hinged to the other pair of said arms, a pallet removably supported between said last-mentioned arms, a back plate carried by the frame, and 50 means for adjusting said back plate toward and from the shaft, core-forming means, and means for projecting said core-forming means through the back plate over the face-plate.

11. A cement-block machine comprising a 55 suitable supporting-frame, a shaft journaled therein and having a polygonal middle portion, face-plate-supporting arms mounted on said shaft and having polygonal babbitted openings fitting the middle portion of said 60 shaft and permitting longitudinal adjustment of the arms on the shaft, the face-plate supported by said arms, end-plate-supporting arms having polygonal openings fitting the middle portion of said shaft and permitting longitudinal adjustment thereof, an end

plate hinged to each of said last-mentioned arms to cooperate with the face-plate, a back plate carried by the frame, core-forming means, and means for projecting said core-forming means through the back plate over 70 the face-plate.

12. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein and having a polygonal middle portion, face-plate-supporting arms mounted 75 on said shaft and having polygonal babbitted openings fitting the middle portion of said shaft and permitting longitudinal adjustment of the arms on the shaft, the face-plate supported by said arms, end-plate-supporting 80 arms having polygonal openings fitting the middle portion of said shaft and permitting longitudinal adjustment thereof, an end plate hinged to each of said last-mentioned arms to cooperate with the face-plate, a back plate carried 85 by the frame, and means for adjusting said back plate toward and from the shaft.

13. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, face-plate-supporting arms carried 90 by said shaft, the face-plate, end-plate-supporting arms also carried by the shaft, one of said arms being longitudinally adjustable on the shaft, an end plate hinged to each of said last-mentioned arms, means carried by the 95 main frame for engaging said end plates and positioning them when in mold-forming position, one of said engaging means being adjusted to correspond with the adjustment of the adjacent end-plate arm, a pallet-board 100 mounted between the end plates, and a back plate carried by the main frame.

14. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, face-plate-supporting arms carried 105 by said shaft, the face-plate, end-plate-supporting arms also carried by the shaft, one of said arms being longitudinally adjustable on the shaft, an end plate hinged to each of said last-mentioned arms, means carried by the 110 main frame for engaging said end plates and positioning them when in mold-forming position, one of said engaging means being adjusted to correspond with the adjustment of the adjacent end-plate arm, a pallet-board 115 mounted between the end plates, a back plate carried by the main frame, core-forming means, and means for projecting said core-forming means through the back plate.

15. A cement-block machine comprising a 120 suitable supporting-frame, a shaft journaled therein, face-plate supporting arms carried by said shaft, the face-plate, end-plate-supporting arms also carried by the shaft, one of said arms being longitudinally adjustable on 125 the shaft, an end plate hinged to each of said last-mentioned arms, means carried by the main frame for engaging said end plates and positioning them when in mold-forming position, one of said engaging means being ad- 130

justed to correspond with the adjustment of the adjacent end-plate arm, a pallet-board mounted between the end plates, a back plate carried by the main frame, and means 5 for adjusting the back plate toward and from the shaft.

16. A cement-block machine comprising a suitable supporting-frame, a shaft journaled therein, face-plate-supporting arms carried 10 by said shaft, the face-plate, end-plate-supporting arms also carried by the shaft, one of said arms being longitudinally adjustable on the shaft, an end plate hinged to each of said last-mentioned arms, means carried by the 15 main frame for engaging said end plates and positioning them when in mold-forming posi-

tion, one of said engaging means being adjusted to correspond with the adjustment of the adjacent end-plate arm, a pallet-board mounted between the end plates, a back 20 plate carried by the main frame, core-forming means, means for projecting said core-forming means through the back plate, and means for adjusting the back plate toward and from the shaft. 25

In witness whereof I have hereunto set my hand and seal, at Frankfort, Indiana, this 1st day of November, A. D. 1905.

FREDERICK A. STARE. [L. s.]

Witnesses:

HARRY C. SHREVEYTON,
EARL F. GRUBER.