

No. 820,129.

PATENTED MAY 8, 1906.

M. RICE.
CONCRETE BLOCK MAKING MACHINE.

APPLICATION FILED MAY 31, 1905.

2 SHEETS—SHEET 1.

Fig. 1

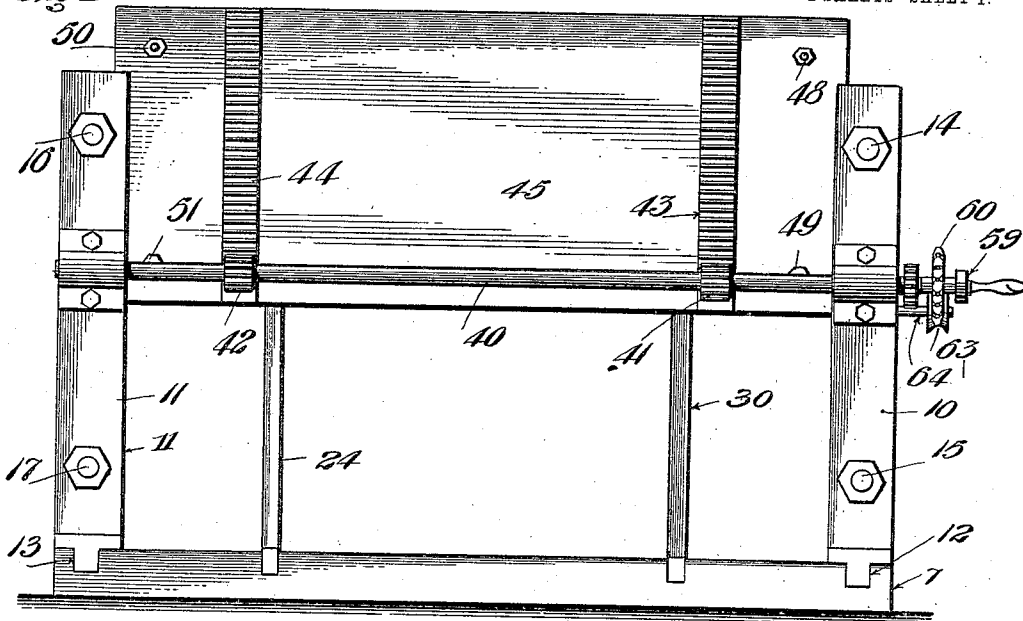
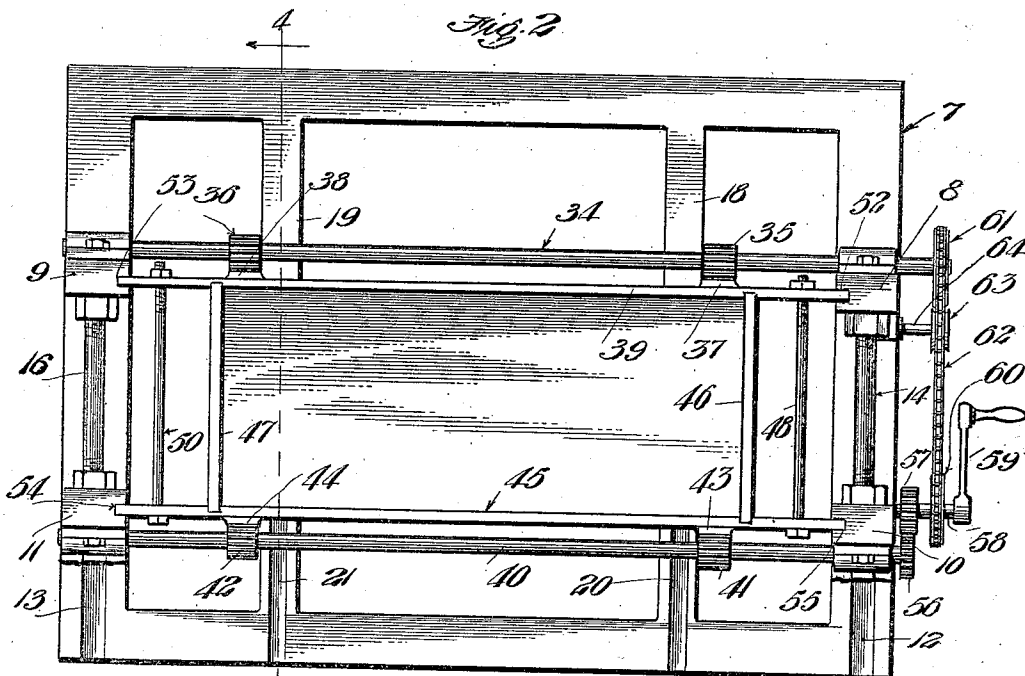


Fig. 2



Witnesses

Samuel A. Shaw,
Myrtle A. Jones.

Inventor
Marion Rice

by Hazard & Harpham
Attorneys.

No. 820,129.

PATENTED MAY 8, 1906.

M. RICE.
CONCRETE BLOCK MAKING MACHINE.
APPLICATION FILED MAY 31, 1905.

2 SHEETS—SHEET 2.

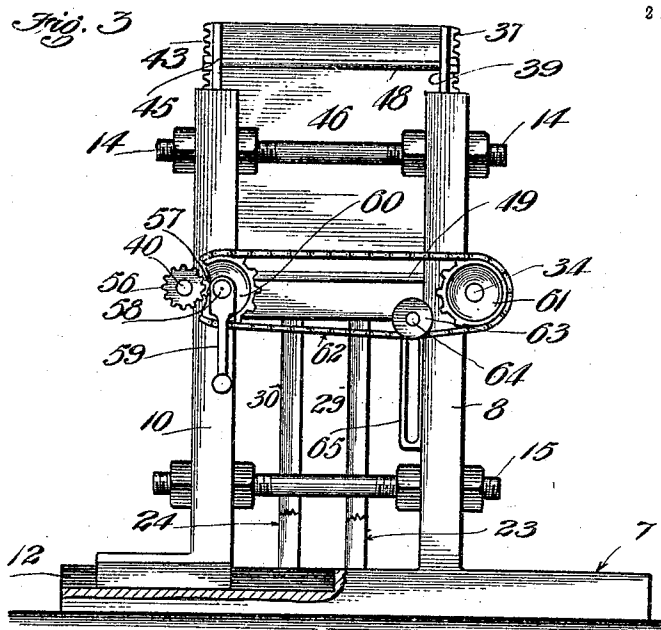
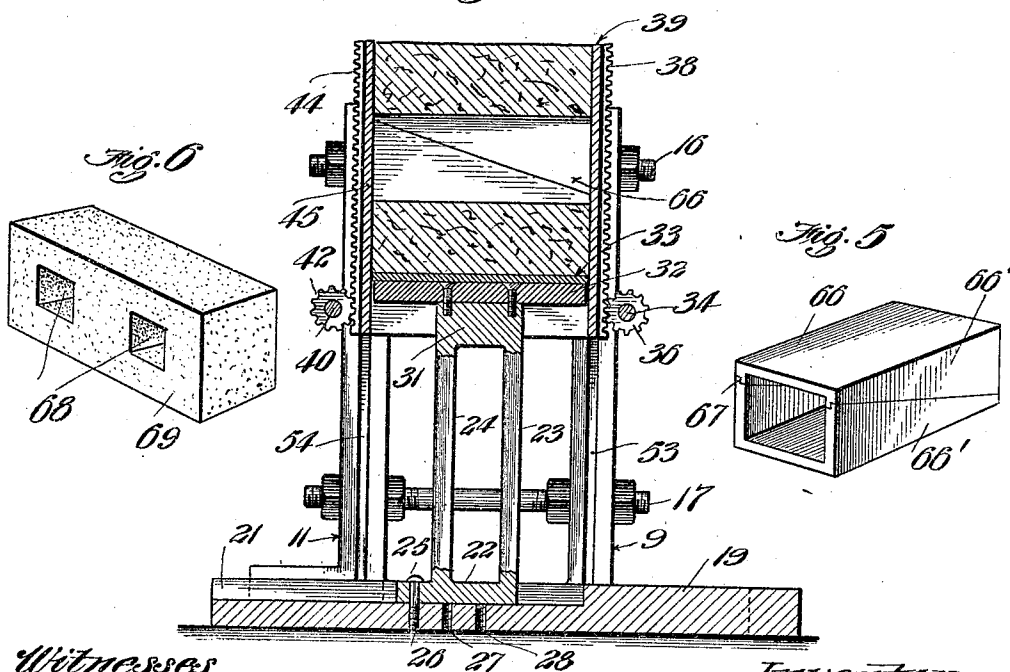


Fig. 4



Witnesses
Edmund A. Shauver
Myrtle A. Jones

Inventor
Marion Rice
by Hazard & Harpham
Attorneys.

UNITED STATES PATENT OFFICE.

MARION RICE, OF LOS ANGELES, CALIFORNIA.

CONCRETE-BLOCK-MAKING MACHINE.

No. 820,129.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed May 31, 1905. Serial No. 263,149.

To all whom it may concern:

Be it known that I, MARION RICE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Concrete-Block-Making Machines, of which the following is a specification.

My invention relates to a machine for making concrete blocks for building purposes; and the object thereof is to provide a machine for that purpose which can be adjusted to make blocks of different sizes, in which the sides of the mold-box can be quickly removed from the sides of the block, so as to enable the ready removal of the block, and which can again be quickly replaced in position to form a new block without the disassembling of parts, and in which hollow blocks may be formed with equal facility with solid blocks, and in which any desired configuration of facing may be given to the block when in its plastic state. I accomplish these objects by the machine described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is a plan thereof. Fig. 3 is an end elevation showing the operating mechanism by means of which the sides and ends of the mold-box are moved. Fig. 4 is a section on the line 4 4 of Fig. 2 looking in the direction indicated by the arrows. Fig. 5 is a perspective view of the core-box for making hollow blocks. Fig. 6 is a perspective view of a completed concrete block with holes there-through.

In the drawings, 7 represents the base of the machine, at one side of which are rigidly secured the corner-posts 8 and 9. On the other side of the base are the corner-posts 10 and 11, the lower ends of which are movable in grooves 12 and 13 in the end members of the base. Corner-posts 8 and 10 are secured together by bolts 14 and 15, whose ends are threaded and provided with nuts thereon on both sides of the corner-posts, so as to enable the movable corner-post to be adjusted toward or from the corner-post which is rigidly secured to the base. Corner-posts 9 and 11 are secured together in like manner by bolts 16 and 17. To the side members of the base are secured the cross-beams 18 and 19, which have grooves 20 and 21 in their upper surfaces. The base-bar 22 of standards 23 and 24 is mounted in groove 21 and is held in place therein by a screw 25, which passes into

a threaded hole 26 in the cross-beam 19. Similar holes 27 and 28 are provided in said cross-beam, so that the position of standards 23 and 24 may be adjusted to bring them closer to the rigid upright when the mold-box is narrowed, as hereinafter explained. A like adjustment is provided for the standards 29 and 30 at the other end of the machine. Standards 23 and 24 are connected at the top by the cross-bar 31, and standards 29 and 30 are likewise provided with a cross-bar connecting them at the top. To these cross-bars is secured a bed-plate 32, which bed-plate supports the facing-plate 33 of the mold-box. A shaft 34, mounted in bearings secured to the rigid corner-posts, is provided with pinions 35 and 36, which mesh with racks 37 and 38, which racks are secured to the side board 39 of the mold-box. A shaft 40, mounted in bearings and carried by the movable corner-posts, is provided with pinions 41 and 42, which mesh with racks 43 and 44, secured to the side board 45 of the mold-box. The end boards 46 and 47 are carried in grooves in the side board, as best shown in Fig. 2, and the side and end boards are held together by bolts 48, 49, 50, and 51. The ends of the side boards of the mold-box are carried in grooves 52, 53, 54, and 55 in the corner-posts. On the outer end of the shaft 40 is a gear 56, which meshes with gear 57 of the same size, which last gear is mounted upon shaft 58, carrying an operating-crank 59. Shaft 58 is revolvably mounted in a bearing secured to corner-post 10, and there is mounted thereon a sprocket-wheel 60 of the same size as sprocket-wheel 61, which last sprocket-wheel is mounted upon the outer end of shaft 34. These sprocket-wheels carry a chain 62, whereby both wheels are caused to move at the same rate of speed when motion is imparted thereto. A chain-adjusting pulley 63 is mounted upon a shaft 64, the end of which shaft is adjustably secured in bearing-plate 65, secured to corner-post 8.

I have shown my machine adjusted for forming blocks of the largest size which the machine is capable of making, and in the operation thereof the plastic concrete is fed into the mold-box and tamped therein in the usual manner. When it is not desired to have a solid block, I provide a hollow core-box 66, which is formed of two halves having their side boards 66' V-shaped, as shown in Fig. 5. The meeting edges of these sides are

provided with offsets 67 to prevent lateral play of the sides upon each other. When these core-boxes are used, after the required quantity of cement is tamped into the mold-box a number of these core-boxes are then placed in the mold-box, so as to make apertures 68 in the finished block 69, as best shown in Fig. 6, and the concrete is tamped around them until the mold-box is full. As soon as the box is filled and leveled off the operator operates crank 59 to cause the pinions which mesh with the racks on the sides of the mold-box to rotate to carry the sides and ends of the mold-box downwardly until they are below the facing-plate which formed the bottom of the mold-box. The facing-plate, with the completed block thereon, can then be removed and placed on the drying field and the facing-plate can be removed therefrom and again used. The sides and end boards are then moved back to the desired position. By making the surface of the facing-plate of any desired configuration ornamental effects may be produced in the completed blocks. When it is desired to make blocks of a narrower width, by changing the end boards, base, and facing plates the side boards may be adjusted toward each other, thereby narrowing the width of the mold-box. When this is done, the chain-adjusting pulley is moved to take up the slack in the chain and shorter rods are used to unite the ends of the side boards. By making the core-boxes in two parts with V-shaped sides, as shown in Fig. 5, as soon as a finished block is placed on the drying field the core-boxes can be removed from the block and used in forming other blocks. These core-boxes or other-shaped boxes or blocks may be also used for shortening the length of a stone. It will also be seen that by this construction a stone of any thickness or length may be formed and that by having different-sized end boards, face-plates, and bed-plates the machine can be readily changed from one size to another without delay and without expense. This is particularly desirable because in erecting buildings the walls of the lower story are always the thickest, and as the building is erected each succeeding story is provided with blocks of a less thickness than the story below it. My machine enables me to make this change without loss of time and without expense. Another advantage of this construction arises from the fact that the bottom of the mold-box is furnished with a facing-plate which gives form to the face of the block as used in the walls of a building. Another advantage of this construction arises from the fact that by turning the side and end boards downwardly below the completed blocks they are never in the way when the completed block is to be removed from the machine and are readily returned to position to form new blocks.

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

1. In a molding-machine, the combination with a base having transverse grooves therein and provided with corner-posts erected on the base, corner-posts having their lower ends located in grooves in the base and adjustable therein and bolts extending through opposite corner-posts and providing means for adjusting and bracing them apart, of a body-plate, standards adjustable in grooves in the base and to which the body-plate is removably secured, sliding side boards guided by the corner-posts, and means for moving said side boards simultaneously.

2. In a molding-machine, the combination with a base having transverse grooves therein and provided with corner-posts erected on the base, corner-posts having their lower ends located in grooves in the base and adjustable therein and bolts extending through opposite corner-posts and providing means for adjusting and bracing them apart, of a body-plate, standards adjustable in grooves in the base and to which the body-plate is removably secured, sliding side boards guided by the corner-posts, and means for moving said side boards simultaneously, said means consisting of racks on the side boards, shafts journaled in boxes on the corner-posts, pinions on these shafts engaging the racks, and means for transmitting motion from one shaft to the other whereby they are simultaneously rotated in opposite directions.

3. In a molding-machine, the combination with a base, corner-posts and standards extending upwardly therefrom and supported thereby and means extending across from one corner-post to another for maintaining their relative positions, of side plates guided by and having vertically-sliding connection with the corner-posts, end plates connected with the side plates, means for securing the side plates together, the side plates having vertically-disposed racks on their outer sides, shafts journaled in boxes on the corner-posts and provided with pinions which mesh with the racks, and means for turning the shafts simultaneously in opposite directions whereby to slide the side and end plates in one direction or the other.

4. In a molding-machine, the combination with a base, corner-posts and standards extending upwardly therefrom and supported thereby and means extending across from one corner-post to another for maintaining their relative positions, of side plates guided by and having vertically-sliding connection with the corner-posts, end plates connected with the side plates, means for securing the side plates together, the side plates having vertically-disposed racks on their outer sides, shafts journaled in boxes on the corner-posts and provided with pinions which mesh with

the racks, and means for turning the shafts simultaneously in opposite directions whereby to slide the side and end plates in one direction or the other, and a body-plate secured on the upper ends of the standards and a facing-plate resting on the body-plate.

5. In a molding-machine, the combination with a base, corner-posts and standards extending upwardly therefrom and supported thereby and means extending across from one corner-post to another for maintaining their relative positions, of side plates guided by and having vertically-sliding connection with the corner-posts, end plates connected with the side plates, means for securing the side plates together, the side plates having vertically-disposed racks on their outer sides, shafts journaled in boxes on the corner-posts and provided with pinions which mesh with the racks, and means for turning the shafts simultaneously in opposite directions whereby to slide the side and end plates in one direction or the other, a body-plate secured to the upper ends of the standards, and hollow core-boxes comprising two halves, the side boards of which are V-shaped and provided at their meeting edges with offsets to prevent lateral play of said edges upon each other, said core-boxes extending across from one side plate to the other.

6. In a molding-machine, the combination with a base, corner-posts, standards, a body-plate supported at the upper ends of the standard, of side plates guided by and having

sliding connection with end posts, means for moving them up and down, with respect to the body-plate, and core-boxes made in two halves having V-shaped sides, said core-boxes extending from one side to the other and the sections removable from the block formed from both sides thereof.

7. A molding-machine comprising a base; two vertical corner-posts rigidly secured to said base; two movable corner-posts adjustably secured to said rigid corner-posts, each of said corner-posts having vertical grooves in their opposite faces, the grooves in the rigid posts facing each other, and the grooves in the movable posts facing each other; a mold-box having side boards whose ends project into the grooves in said corner-posts; end boards secured between said side boards; an elevated stationary supporting bed-plate; a facing-plate on said bed-plate adapted to form a closure for the opening between the side and end boards; racks secured to said side boards; shafts mounted in bearings secured to the outer sides of said corner-posts; pinions on said shafts adapted to mesh with said racks; and means to cause the simultaneous and equal rotation of said shafts.

In witness that I claim the foregoing I have hereunto subscribed my name this 25th day of May, 1905.

MARION RICE.

Witnesses:

G. E. HARPHAM,
MARGARETE C. NICKELESON.