(No Model.) 3 Sheets—Sheet 1.

J. GORICH, J. ILG & T. M. CRONIN.

BRICK OR TILE MACHINE.

No. 462,313. Patented Nov. 3, 1891.

Fig. 1.

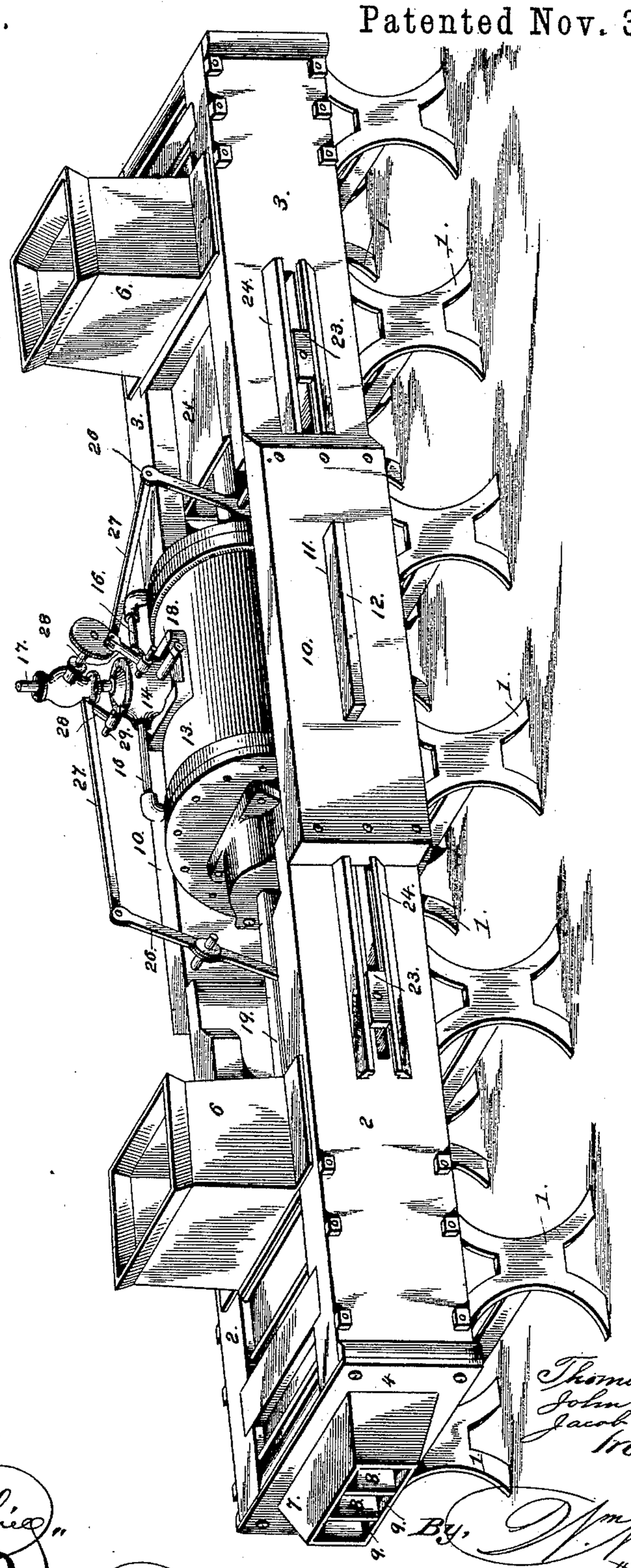

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Fig. 2.

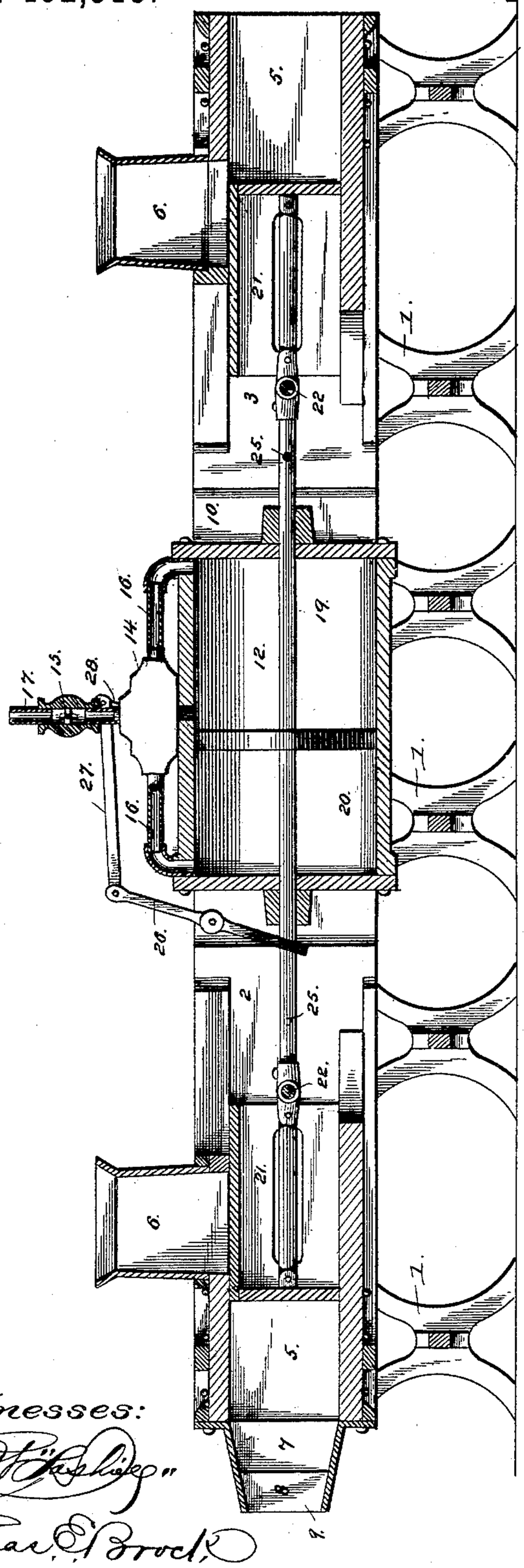

Fig. 3.

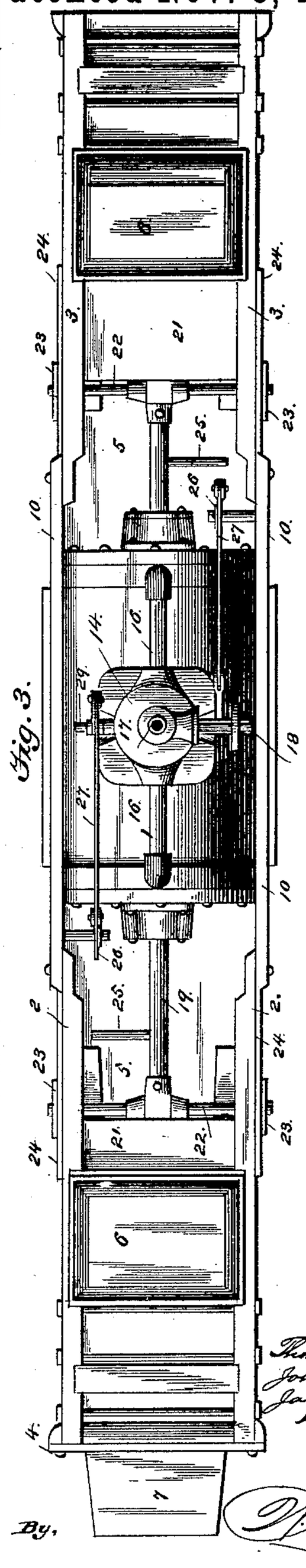

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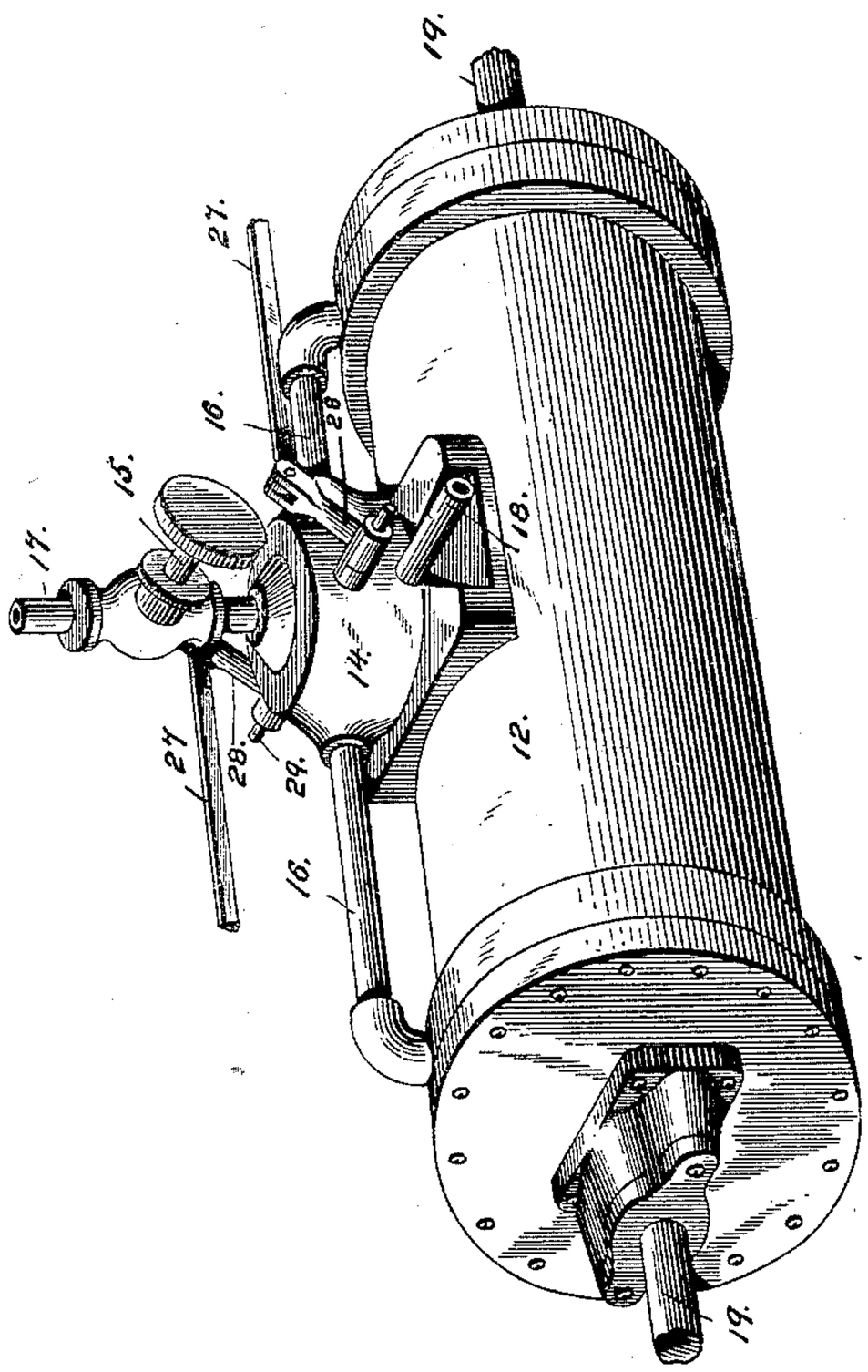
Fig. 4.



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UNITED STATES PATENT OFFICE.

JACOB GORICH, JOHN ILG, AND THOMAS M. CRONIN, OF MORRIS, ILLINOIS.

BRICK OR TILE MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,313, dated November 3, 1891.

Application filed June 8, 1891. Serial No. 395,560. (No model.)

To all whom it may concern:

Be it known that we, JACOB GORICH, JOHN ILG, and THOMAS M. CRONIN, citizens of the United States, residing at Morris, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Brick-Machines; and we do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in brick-machines, and has special reference to what are known as "reciprocating brick-machines."

The leading object of our invention is the provision of a machine which will be automatic and double-acting, whereby the machine will produce bricks more rapidly than machines heretofore used.

Another object of our invention is the provision of a machine which will comprise few parts, thereby rendering the same simple and durable, which will be of compact and convenient size, and which may be easily separated and transported or set in position for use.

Another object of our invention is the provision of a machine which, in addition to being capable of making bricks more rapidly and effectively than previous machines, can be manufactured at a comparatively lower price.

To attain the desired objects the invention consists of a brick-machine embodying certain improved constructions and combinations of parts, substantially as illustrated, described, and specifically defined and distinguished by the claims.

In order that the construction, operation, and advantages of our machine may be fully understood, we would invite attention to the accompanying drawings, in which—

Figure 1 represents a perspective view of our novel and improved brick-machine. Fig. 2 represents a vertical longitudinal section thereof. Fig. 3 represents a plan view thereof; and Fig. 4 represents an enlarged view of the cylinder, valves, and pipes.

Referring by numerals to the drawings, in which similar numerals denote corresponding parts in the several views, the numeral 1 designates the legs or supports of our machine, on which rest the sides 2, which are preferably made in three sections secured together, as by making the frame or sides in this manner the machine can be easily taken apart or put together. The end sections 3 of the frame are bolted firmly together, and to said sections are secured the plates 4, which form the boxes or cases 5, in which the clay is received from the feed-hoppers 6, arranged above said boxes, and communicating with the outer end of the boxes are the mold-cases 7, which are provided with the partitions or strips 8 to form the molds 9. From this construction it will be seen that the clay is placed in the hopper and from the hoppers enters the boxes or receptacles, and therein is acted upon and forced through the molds of the cases and discharged therefrom in the form of bricks, as is evident.

The central sections 10 of the frame or sides are formed with slots or passages 11, in which fit the extensions 12, formed one on each side of the cylinder 13, and in this manner the cylinder is firmly supported between the sides, and the cylinder is arranged centrally of the machine.

Mounted upon the cylinder is the valve-case 14, in which is located what we term a "three-way valve" 15, and from each end of the case leads a pipe 16 for directing the steam to each end of the cylinder, and the steam-supply pipe 17 enters the top of the case, and the exhaust-pipe 18 leaves one side of the case, as clearly shown. From this construction it will be understood that the steam enters the case through the supply-pipe, and by the action of the valve will cause the steam to pass into either end of the cylinder.

Passing through the cylinder is the single plunger-rod 19, which carries the piston 20 and at each end is connected to the followers or plungers 21, which are adapted to work in the boxes 5, and the plunger-rod is provided with cross-arms 22, carrying blocks 23, working in guides or ways 24 of the end sections. The plunger-rod also carries arms 25, arranged on opposite sides and adapted to strike the lower ends of the levers 26, which are con-

nected by means of links 27 with the arms 28 on the valve shaft or stem 29, as clearly shown.

The operation of our machine will be readily understood from the description and drawings, and, stated briefly, is as follows: The clay is placed in the hoppers and is fed to the boxes, and steam passes into the valve-case through the supply-pipe and to one side or end of the cylinder, acting upon the piston, forcing it to the opposite end of the cylinder and causing the plunger on one end of the plunger-rod to force the clay from one box through the molds and discharge the bricks at one end of the machine. The plunger-rod in moving in one direction brings the arm thereon against the lever connected to the valve, which action opens the other side of the valve-case and admits steam to the other end of the cylinder, moving the piston and plunger in the opposite direction and pushing the clay through the molds at the opposite end, thus alternately moving the plunger into one of the boxes and then into the other, as will be readily understood. It will thus be seen that the double action of the plungers is automatic and that the valve operates to admit the steam first to one end of the cylinder and then to the other, thereby causing the machine to make the bricks in a very rapid manner and with an even compression. It will also be seen that the machine is the embodiment of simplicity and durability, can be readily taken apart or set up, and can be manufactured at a price comparatively small for a machine possessing such merit over other machines.

We claim as our invention—

1. In a brick-machine, the combination of a frame, boxes or cases in the ends thereof to receive the clay, a cylinder between said boxes, a plunger-rod having plungers adapted to work in said boxes, a single piston on said rod arranged in the cylinder, and pipes for supplying steam to each end of the cylinder for acting alternately on each side of the piston, for the purpose stated.

2. In a brick-machine, the combination of a frame, boxes one at each end of the frame to receive the clay, a plunger-rod having a plunger at each end adapted to work in said boxes, a single piston carried by said plunger-rod, a cylinder in which said piston works, a valve-case mounted on the cylinder and having a three-way valve therein, steam-pipes leading from the case to each end of the cylinder for admitting steam to each end thereof, and devices operated by the plunger for moving the valve to direct the steam alternately to each end of the cylinder, for the purpose stated.

3. In a brick-machine, the combination of a frame having a mold-box at each end, a hopper for feeding the clay to said boxes, a cylinder arranged between said boxes, a plunger-rod having a piston working in the cylinder and a plunger at each end adapted to work in the boxes, a case on the cylinder, having a three-way valve, arms connected to the valve-stem, and levers connected to said arms and operated upon alternately by the plunger-rod to direct the steam to opposite ends of the cylinder, in the manner and for the purpose named.

4. In a brick-machine, the combination of the frame, the plunger-rod, the boxes, the mold-cases, the cylinder, the piston working therein, and the valve and steam pipes, all arranged for the purpose described.

5. In a brick-machine, the combination of the frame, the boxes, the cylinder between the boxes, the valve-case, valve and supply pipes, the plunger-rod having the plungers and piston, the arms on the plunger-rod, the levers operated by said arms, and the connection between the levers and valve for operating the same, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JACOB GORICH.
JOHN ILG.
THOMAS M. CRONIN.

Witnesses:
F. S. JOHNSON,
DANIEL O'CONNELL.