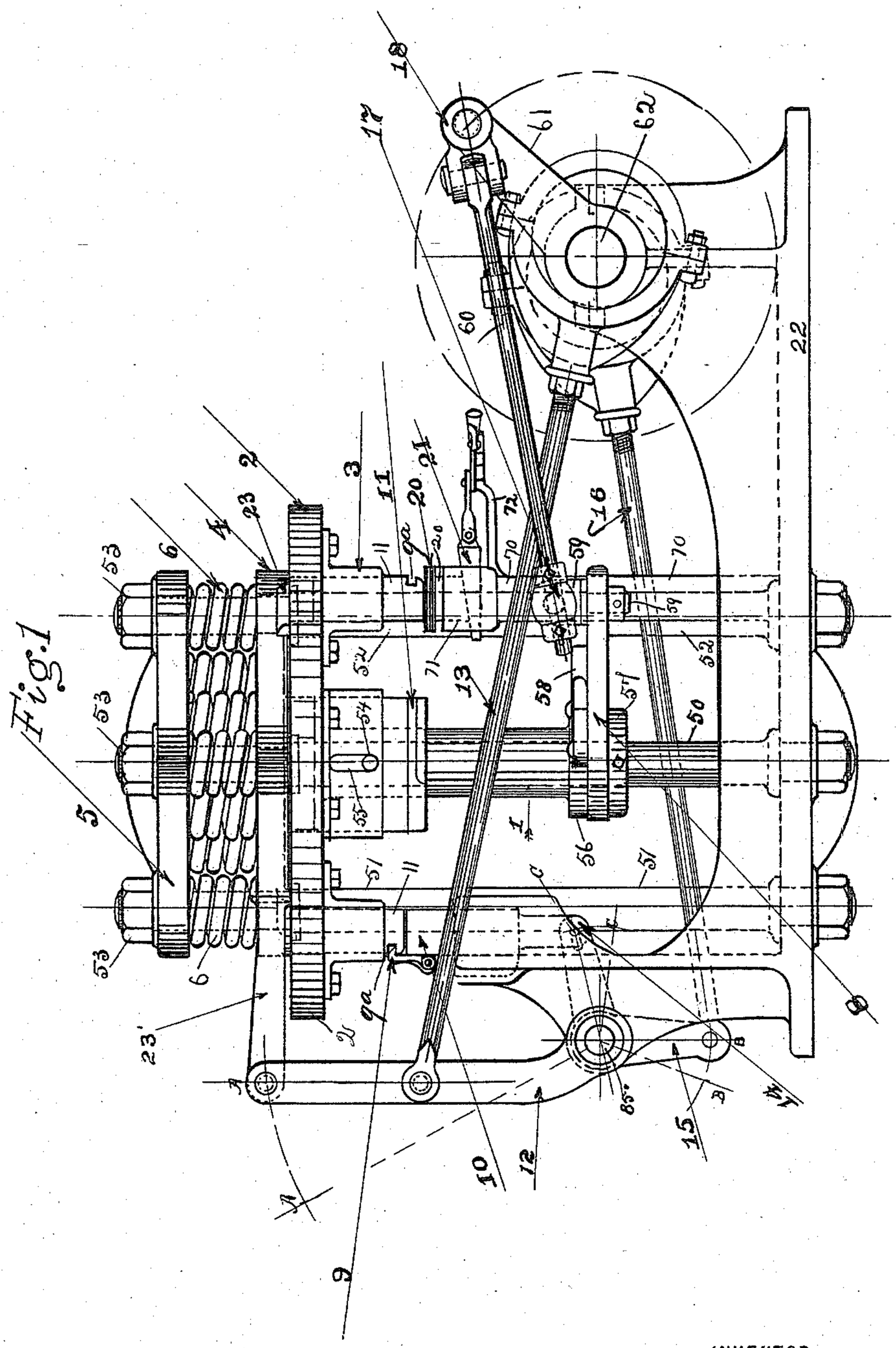
(No Model.) 3 Sheets—Sheet 1.

J. B. SUTCH.

BRICK MAKING MACHINE.

No. 580,562. Patented Apr. 13. 1897.



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(No Model.)

3 Sheets—Sheet 2.

J. B. SUTCH.

BRICK MAKING MACHINE.

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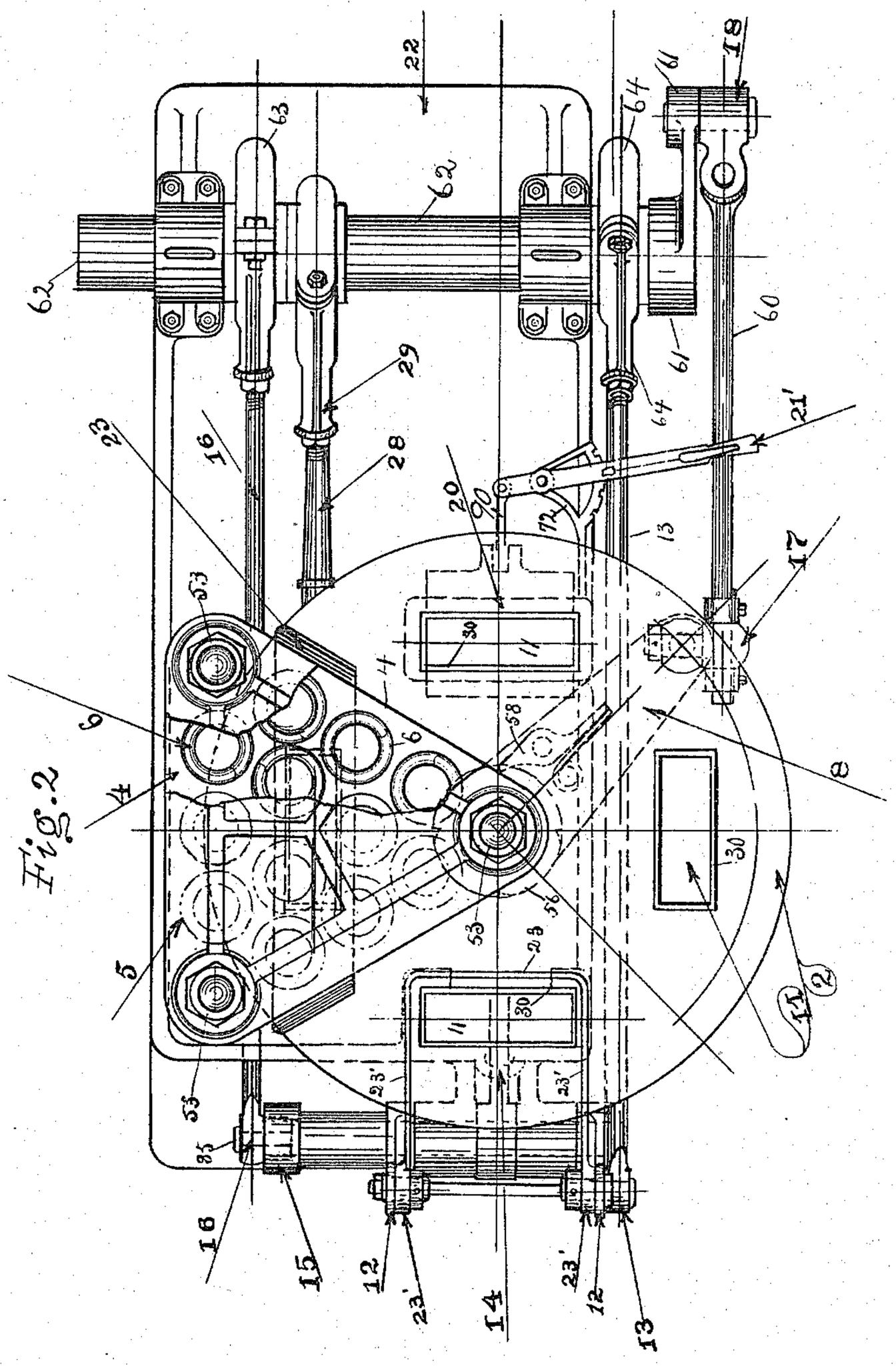

Fig. 2.

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BRICK MAKING MACHINE.

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Fig. 3.

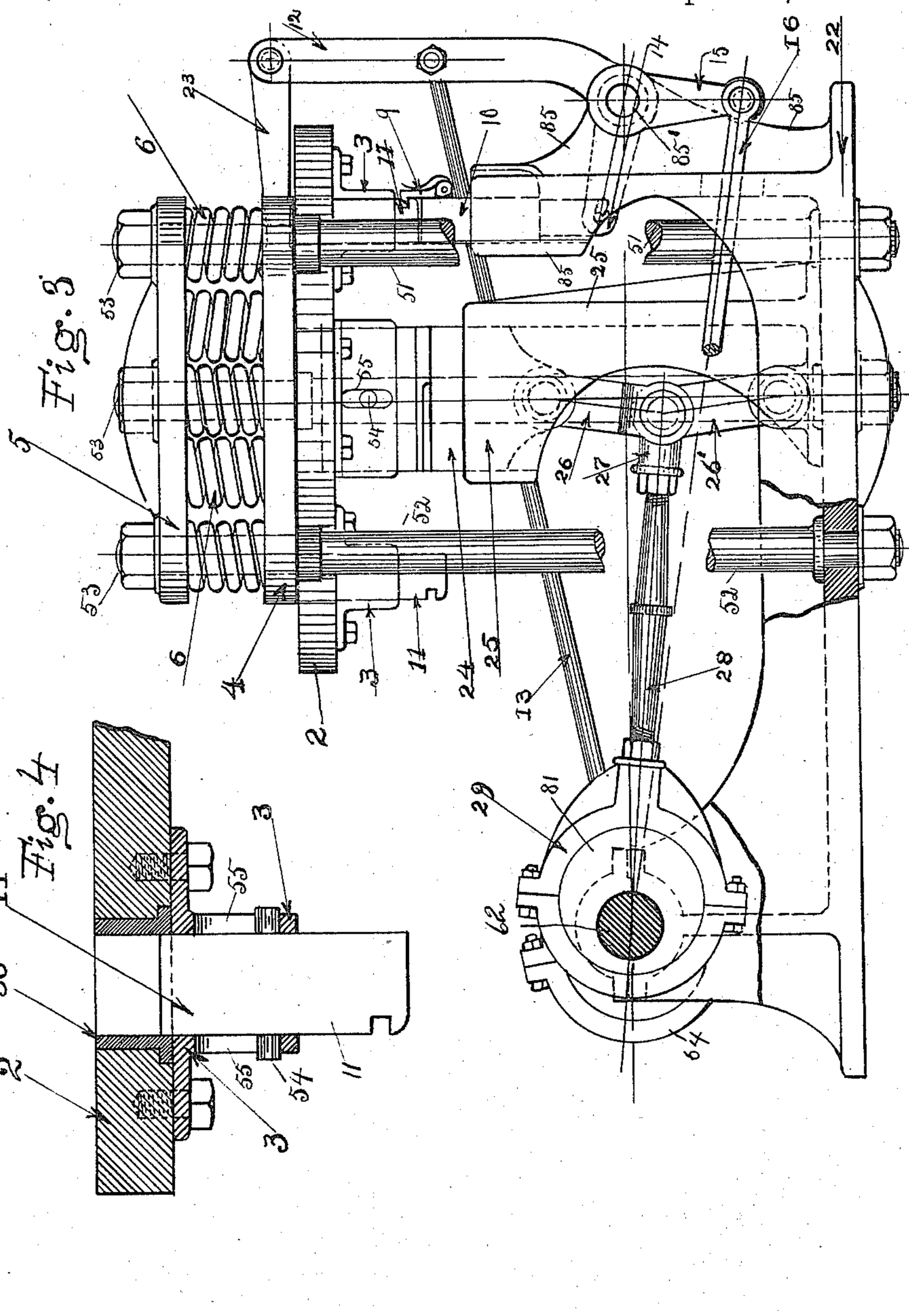
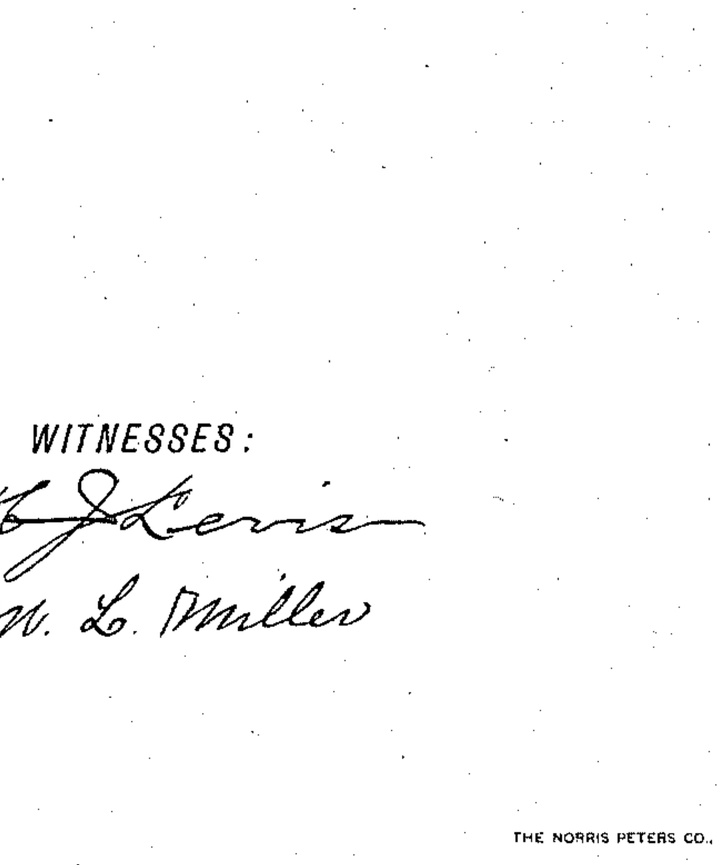


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN B. SUTCH, OF PITTSBURG, PENNSYLVANIA.

BRICK-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 580,562, dated April 13, 1897.

Application filed May 6, 1896. Serial No. 590,418. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. SUTCH, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Brick-Making Machines; and I 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.

My invention relates to improvements in brick-making machines, which improvements will be fully shown and described in the accompanying drawings and specification, in which—

Figure 1 is a side elevation of my improved machine with a portion removed. Fig. 2 is a plan view of the same. Fig. 3 is a view of the opposite side of the machine. Fig. 4 is a sectional view of a portion of the mold-plate and showing the mold and its necessary attachments.

Similar figures refer to similar parts in the several views shown.

Secured to the bed-plate 22 are the vertical columns 50, 51, and 52. The circular mold-plate 2 is loosely mounted upon the vertical column 50. Openings are formed within the said mold-plate and the molds 30 secured therein. The guide-frames 3 are secured to the under side of the mold-plate and have formed therein the oblong slots 55. The loosely-fitted plungers 11 are held within the guide-frames by the pins 54, which project through the slots in the guides. (See Fig. 4.) Loosely mounted upon the columns and in contact with the upper surface of the mold-plate is the triangular pressure-plate 4. Spiral springs 6 are placed over the projecting ends of the columns, and the triangular plate 5 is loosely fitted over the columns and screwed down by the nuts 53. Loosely mounted on the column 50 is the sleeve 1, which is secured fast to the mold-plate. Upon the lower end of the said sleeve is formed the ratchet-wheel 56. The teeth of the said ratchet-wheel correspond in number to the number of molds in the mold-plate, (four in the present instance.) A lever 8 is loosely mounted on the column 50 between the ratchet-wheel and the collar 57 and is provided with the pawl 58 to engage with the teeth of the ratchet-wheel. A pin 59 is loosely secured to the opposite end of the lever 8 and is loosely attached to the coupling 17 upon the end of the rod 60. The coupling 18 is attached to the opposite end of the said rod and is loosely pivoted to the crank 61, which is secured fast to the main shaft 62. The upright frame 25, which is secured to the bed-plate, is provided with slides. Operating within the said frame and slides is the plunger 24. One of the toggles 26 is pivoted to the lower end of the said plunger, and the other toggle, 26′, is pivoted to an eyebolt fastened to the bed-plate. The rod 28 has secured to one end the coupling 27 and is pivoted to the toggles. Upon the other end of the said rod is secured the eccentric-strap 29, which is loosely mounted upon the eccentric 81, formed upon the main shaft. The upright frame 85 is provided with slides and has loosely fitted therein the plunger 10, which is secured at its lower end to the crank-arm 14, the said crank-arm being secured fast to the shaft 85′. The crank 15 is secured fast to the end of the said shaft and is operated from an eccentric formed upon the main shaft 62 by the eccentric-strap 63 and rod 16. Loosely mounted on the shaft 85′ are the arms 12, which have loosely pivoted to their upper ends the scraper or rake-off 23′.

Attached to one of the arms 12 is the rod 13, which is secured to the eccentric-strap 64 and is operated from an eccentric formed upon the main shaft.

A vertical standard 70 is secured to the bed-plate and has formed upon its upper end a hollow box 71, provided with openings in the sides for the reception of the wedge-shaped block 21. Loosely fitted within the said box is the regulating-block 20, the lower end of which is tapered off to suit the wedge. A bracket 72 is secured to the standard and has formed thereon a quadrant and the lever 21′, pivoted thereto. The said lever is connected to the wedge by the rod 90. The object of this arrangement is that when the wedge is moved in or out the regulating-block will adjust the plungers to any distance within the

molds, so that various-sized bricks may be formed without changing the molds. A hardened-steel gib-plate is fitted to the under side of the plate 4 and above the mold.

In the operation of the machine the main shaft is loosely rotated and the mold which is directly over the regulating device is filled with the material to be formed. The lever 8 moves forward and the pawl slides around the ratchet-wheel until the said lever has attained its full stroke. When on its backward stroke, the pawl engages with one of the teeth of the ratchet-wheel and revolves the mold-plate one-fourth of a revolution and brings the mold that has been filled directly over the plunger 24. The said pawl then slides back over the ratchet-wheel on the next forward stroke of the lever, and during the time that the said lever and pawl are on the said forward stroke the mold-plate remains stationary and the toggles 26 and 26′ force up the plunger 24 and mold-plunger 11, pressing the material in the mold into shape. Said plungers then assume their former position and the mold-plate again advances, bringing the next filled mold over the plunger 24 and the mold which contained the pressed material directly over the plunger 10, which comes into action and forces the mold-plunger 11 upward and forces the finished brick on a level with the mold-plate. The scraper or rake-off then comes into action and scrapes or draws the finished brick off onto a table or platform and returns to its former position. In the downward or return stroke of the plunger 10 the small hook 9, which is secured to the plunger, catches in the recess 9^a, formed on the plunger 11, and draws it down into its former position. Each operation of the plungers, mold-plate, &c., is repeated at every revolution of the main shaft.

A suitable hopper may be arranged over the mold, so that each successive mold may be automatically filled.

The machine may also be arranged to have any number of molds and for various objects, such as tile, &c., without departing from the general spirit of my invention.

The object of the spiral springs between the plates 4 and 5 is to press the plate 4 firmly down upon the shoulders formed upon the columns, and should any hard substance accidentally get into the mold the springs will allow the plate 4 to yield, thus forming a means of safety and preventing the breaking of other parts.

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

1. In a brick-machine, the combination of the molds, the mold-plate having the pendent guides, the mold-plungers working in said guides and the molds, the rake-off arranged on said mold-plate, means for actuating said rake-off, the upper and lower plates arranged upon said mold-plate, springs interposed between said upper and lower plates, posts passing through said latter plates, means for actuating mold-plungers and means for operating said mold-plate, substantially as set forth.

2. In a brick-machine, the combination of the molds, the mold-plate having the pendent guides, the mold-plungers working in said guides and molds, the triangular upper and lower plates arranged above said mold-plate, the springs interposed between triangular plates, the rake-off arranged upon said mold-plate, means for actuating said rake-off, the posts passing through said triangular plates, means for intermittently actuating said plungers and means for intermittently rotating said mold-plate, substantially as described.

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

JOHN B. SUTCH.

Witnesses:
ALBERT J. WALKER,
H. J. LEVIS.