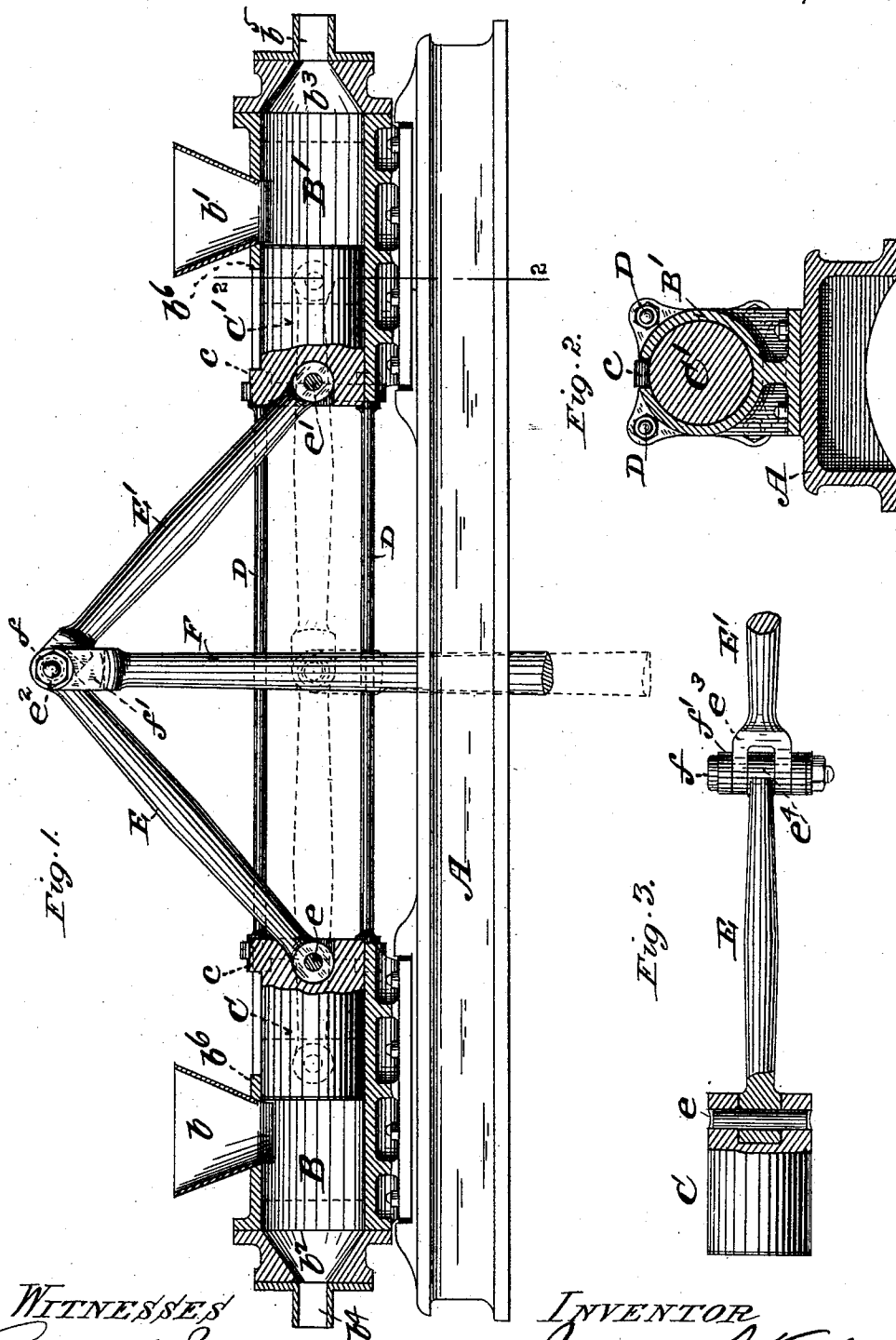


(No Model.)

J. J. KULAGE.
BRICK AND TILE MACHINE.

No. 484,897.

Patented Oct. 25, 1892.



WITNESSES
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UNITED STATES PATENT OFFICE.

JOSEPH J. KULAGE, OF ST. LOUIS, MISSOURI.

BRICK AND TILE MACHINE.

SPECIFICATION forming part of Letters Patent No. 484,897, dated October 25, 1892.

Application filed November 30, 1891. Serial No. 413,594. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. KULAGE, of St. Louis, Missouri, have made a new and useful Improvement in Brick and Tile Machines, of which the following is a full, clear, and exact description.

The improvement relates to duplex reciprocating machines adapted more especially to wet or damp clay; and it consists, mainly, in the mode of operating the plungers, substantially as is hereinafter described and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a sectional elevation of the improved mechanism; Fig. 2, a cross-section on the line 2 2 of Fig. 1; and Fig. 3, a top view, partly in section, showing one of the plungers and a portion of the toggle.

The same letters of reference denote the same parts.

Saving as it is modified or supplemented by the improvement under consideration the machine is of the usual form.

A represents a suitable bed-plate for sustaining the working parts of the machine.

B and B' represent, respectively, the chambers at the ends, respectively, of the machine for receiving the clay to be molded. The clay is introduced into them through the hoppers *b* *b'* and is expelled therefrom through the funnel-shaped ends *b*² *b*³ and dies *b*⁴ *b*⁵ in the usual manner.

C C' represent the plungers which belong to the chambers, respectively. The chambers are suitably secured to the bed-plate, and are also suitably united by means of the tie-rods D, substantially as shown. The plungers are drawn toward each other to enable the clay to be admitted into the chambers and are moved apart from each other to eject the clay from the chambers and effect the desired molding of the clay.

The means for operating the plungers is as follows: E E' represent arms jointed at *e* *e'* to the plungers, respectively, and to each other at *e*², thereby forming a toggle which in expelling the clay from the chambers is straightened, as indicated by the broken

lines in Fig. 1, and which assumes the position shown in the full lines, same figure, when the plungers are withdrawn to admit the clay to the chambers. The toggle can be thus operated by various means, but preferably by means of a rod F, substantially as shown. The rod and the toggle-arms are suitably jointed together by means of the pin *f*, which passes through the fork *f'* of the arm F, the fork *e*³ of the arm E', and the eye *e*⁴ of the arm E. The rod F may extend in any suitable direction from its point of connection with the toggle, and it can be operated by any suitable means. (Not shown.) In expelling the clay the plungers may not move evenly—that is, one plunger may complete its stroke in advance of the other plunger. Accordingly I provide for arresting the outward movement of the plunger when it has reached the proper limit of its stroke and using it as an abutment for supporting the toggle in the further outward movement of the other plunger. This blocking of the plunger can be accomplished in various ways, and I desire not to be limited in this respect. One method is exhibited in the drawings. The plunger is provided with a shoulder *c*, which when the plunger has been moved sufficiently outward encounters a shoulder *b*⁶ upon the chamber in which the plunger is operating, and the plunger is thereby prevented from moving farther outward. Each plunger is similarly provided with a shoulder *c* and each chamber with a shoulder *b*⁶, and in the event one of the plungers reaches the end of its stroke in advance of the other plunger that other plunger continues to move until it is similarly arrested or until the straightening of the toggle has been effected.

I claim—

1. The combination of the chambers, plungers, and the toggle links or pitmen centrally connected together and one connected to each plunger, substantially as set forth.

2. The combination of the chambers, plungers, and the toggle-links or pitmen centrally connected together and one connected to each plunger and independently arrested at the

terminus of the stroke, substantially as specified.

3. The combination of the chambers, plungers, and the toggle-links or pitmen centrally
5 connected together and one connected to each plunger, said plungers having shoulders near their outer ends upon the upper surface to engage shoulders upon the chambers to arrest

independently the plungers at the terminus of the stroke, substantially as specified. 10

Witness my hand this 21st day of November, 1891.

JOSEPH J. KULAGE.

Witnesses:

C. D. MOODY,
A. BONVILLE.