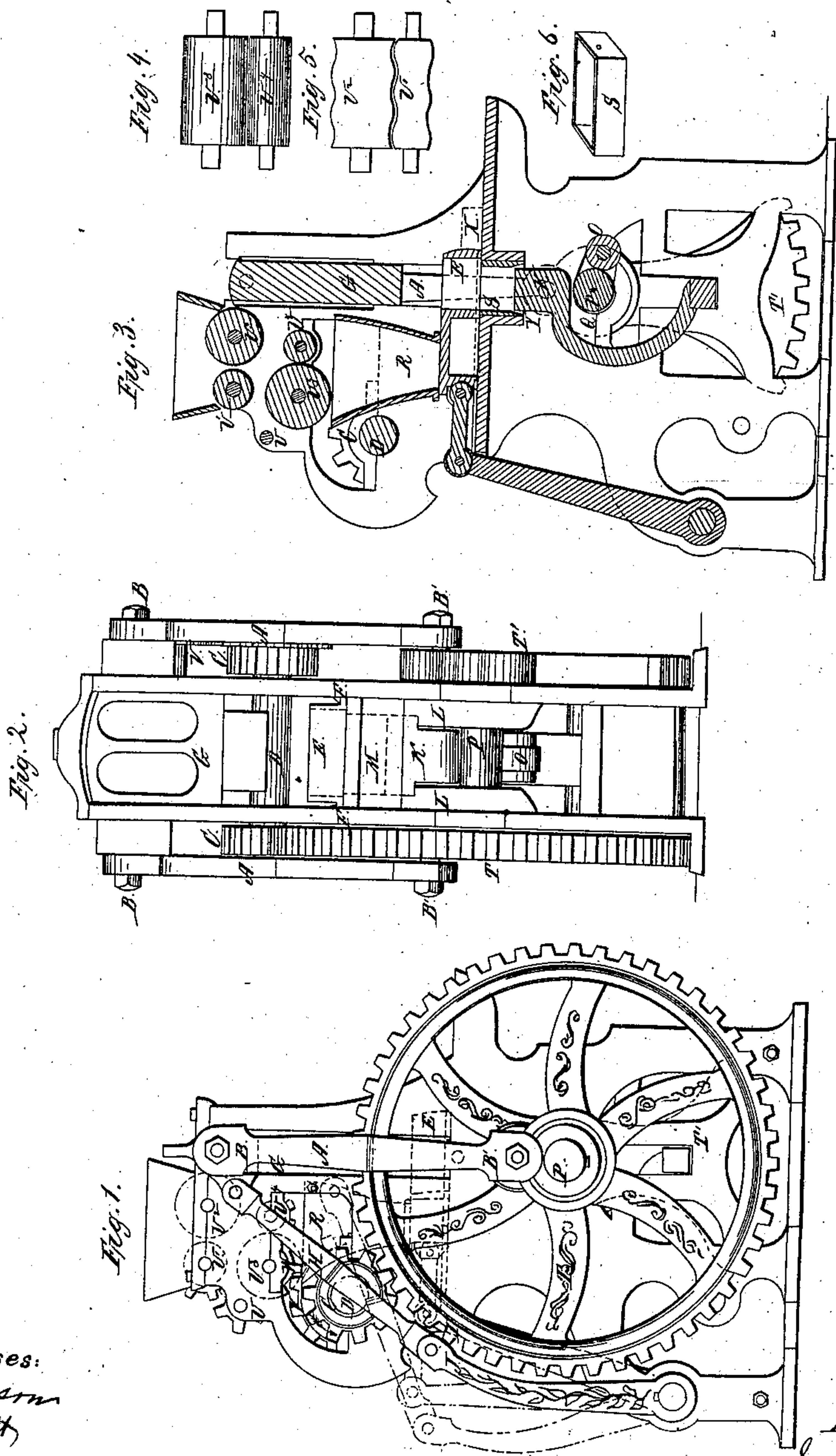


*J. Sangster,
Brick Machine,*

Nº 62,781,

Patented Mar. 12, 1867.



*Witnesses:
Oscar Johnson
L. J. Mott*

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United States Patent Office.

JAMES SANGSTER, OF BUFFALO, NEW YORK.

Letters Patent No. 62,781, dated March 12, 1867.

IMPROVED BRICK MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES SANGSTER, of Buffalo, in the county of Erie, and State of New York, have invented certain new and useful improvements in and on Brick Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed specification, in which—

Figure 1 is a side elevation.

Figure 2, a front view.

Figure 3, a vertical longitudinal section.

Figures 4 and 5 represent the crushing rollers.

Figure 6 is a perspective view of the inside of the mould.

The nature of my invention consists in, first, the arrangement and combination of the mechanism for giving the necessary motions to the charger and pressing piston of a brick machine, by means of which the employment of cams, so objectionable in machinery for making bricks, is rendered unnecessary; second, in the employment of rollers for crushing or grinding the clay, when one or more sets of said rollers are made of a serpentine form, or so turned as to have a number of concentric grooves for purposes to be more clearly hereinafter described; third, in the arrangement and construction of the mould by means of which one mould, after being worn, may be easily and quickly exchanged for a new one; fourth, in constructing the mould near the bottom so that the opening becomes wider or larger, thereby leaving room, after the lower piston has descended, for ventilation during the operation of filling with clay; fifth, in the employment of a counterbalance for equalizing the motion of the machinery.

Like letters in the several figures represent similar parts.

A A represent the connecting-rods or arms for moving the pressing piston; they are connected to the piston G at the joints B B, and to the driving-wheels or cranks at the joints B' and B'. C and C represent the driving-wheels or pinions, which are fastened to the shaft D. E is the charger which slides in grooves in the sides of the machine, which are shown in the front view, in fig. 2, and marked F F. The charger receives its motion from the piston G, the arms H I and J. R is the hopper which supplies it with clay. The lower piston is represented by the letter K; it is so constructed as to descend by its own weight to its resting place on the projections L L; it receives its motion from the friction-roller O, which is attached to the shaft P. M represents the mould-bed, and S, in the section view, fig. 3, is the mould-box; it is fastened in place by means of screws. A perspective view of said mould, separate from the mould-bed, is shown in fig. 6. T represents a large spur-wheel which is driven by one of the pinions C, and T', a segment of a wheel similar in diameter to the wheel T. The segment T' engages only at or about the time the pressure is being given to the brick or clay; it also acts as a counterbalance to the weight of the piston G, thereby equalizing the motion and lessens the power necessary to drive the machine. The crushing-rollers are represented by the letters U¹, U², U³, and U⁴; they receive their motion from the wheel V, which engages with smaller wheels attached to the shaft of each roller, and to the wheel on the shaft U. One set of the rollers shown is made with concentric grooves or depressions, similar or equivalent to those shown in fig. 5; the object being to cause the clay to be forced and fall through said rollers in thin bent or curved flakes, which in turn pass through straight rollers, and, not being elastic, are broken and crumble into dust. The mould S is made flaring to afford ventilation while filling, as shown at Y, in fig. 3. The machine is constructed of iron and brass.

Its operation is as follows: In fig. 1, the piston G is represented as raised to its highest point, which position brings the charger to its farthest point forward, and directly over the mould S, which is now filled with clay from said charger, and the brick previously formed is pushed forward by the front of the charger on to the front part of the mould-board M, as shown in fig. 3, at X. A movement of the pinion C, (which is given in a large machine, by means of a pulley and belt on one end of the shaft D,) in the direction of the arrow, brings the piston G downward, which imparts the necessary motion to the charger by means of the arms H J and I, the upper end of the arm I being jointed or connected to it, as shown in Figs. 1 and 3. As said motion of the pinion continues, the charger moves backward, leaving the mould S full of clay, and the opening in said charger passes under the opening in the hopper R, from which it is again filled with clay. In the mean time the piston

G has completed its movement downward and pressed the brick, and is now beginning to ascend; and the lower piston, which is represented by the letter K, lifts the brick up just in time for the charger in its motion forward to push it off; the lower piston now drops down, and the mould is again filled as before.

I do not claim as my invention the charger E, receiving its clay from a hopper for filling the mould; neither do I claim the piston K for lifting up the brick in time to be pushed off by the charger as it moves forward. But what I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the arms H I and J, and the piston G, when constructed substantially as described.
2. The grooved rollers, when used in combination with plain or straight rollers, as and for the purposes described.
3. The construction of the lower part of the mould, by means of which the piston K, as it descends, leaves the necessary ventilation, as described.
4. The segment 'T', when constructed substantially as and for the purposes described and set forth.
5. I claim the arms A A, and crank-wheels T and T', when used to give the reciprocating motions to the pressing piston of a brick machine, substantially as described.

JAMES SANGSTER.

Witnesses:

G. T. MIATT,
OSCAR FOLSOM