Sheet 1-2 Sheets.

J. K. Lemon,

Brick Machine,

No. 47,209. Patented Apr. 11, 1865.

Fig 1.

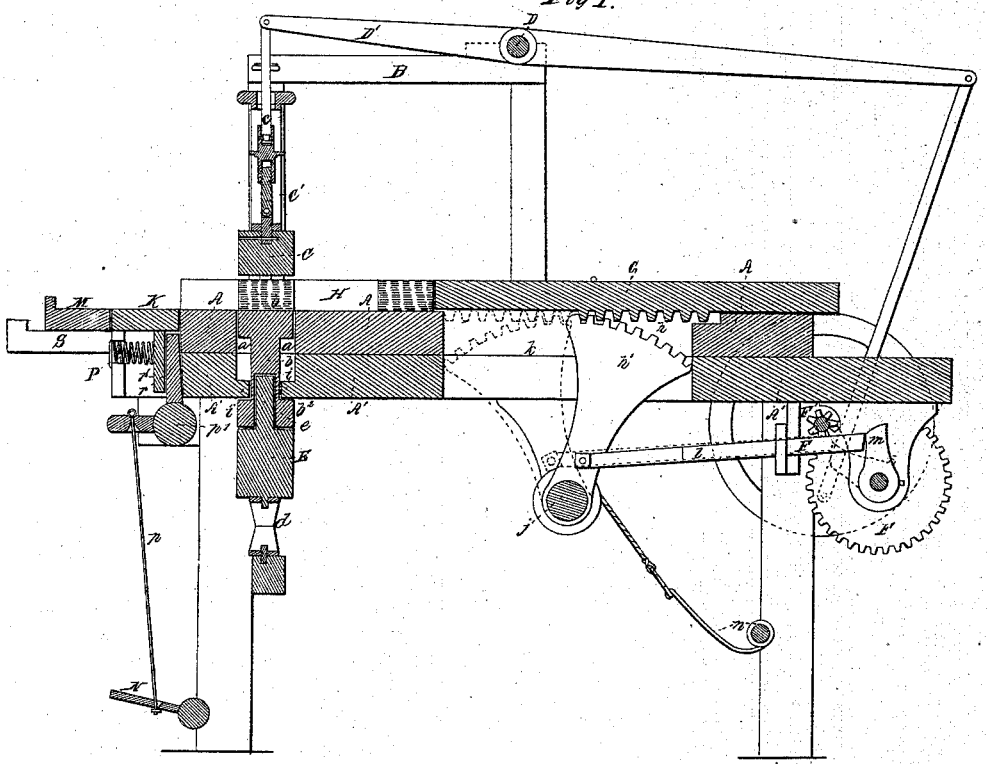
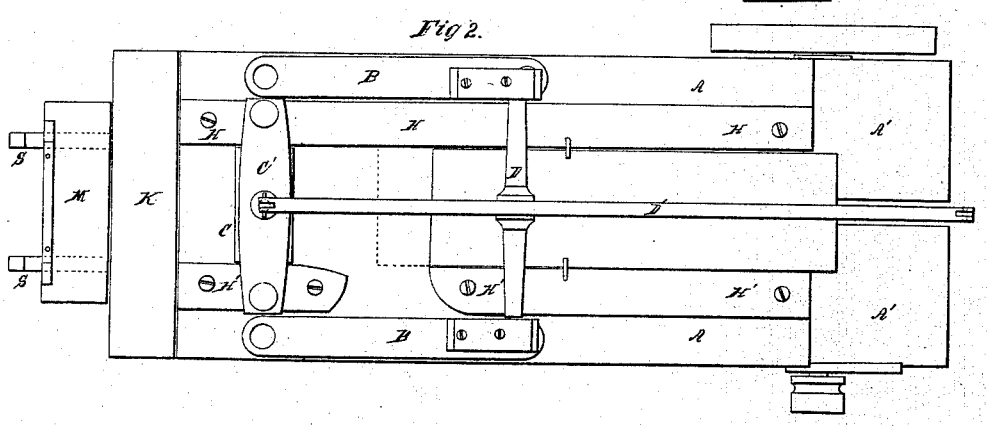


Fig 2.



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Sheet 2 - 2 Sheets.

J. K. Lemon,

Brick Machine,

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Fig 4.

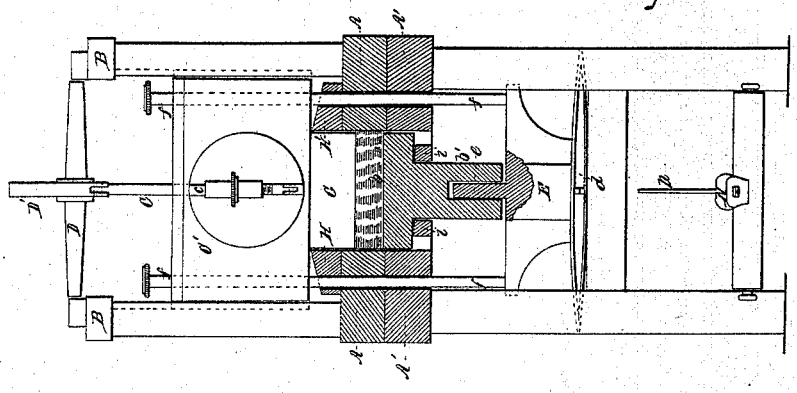


Fig 3.

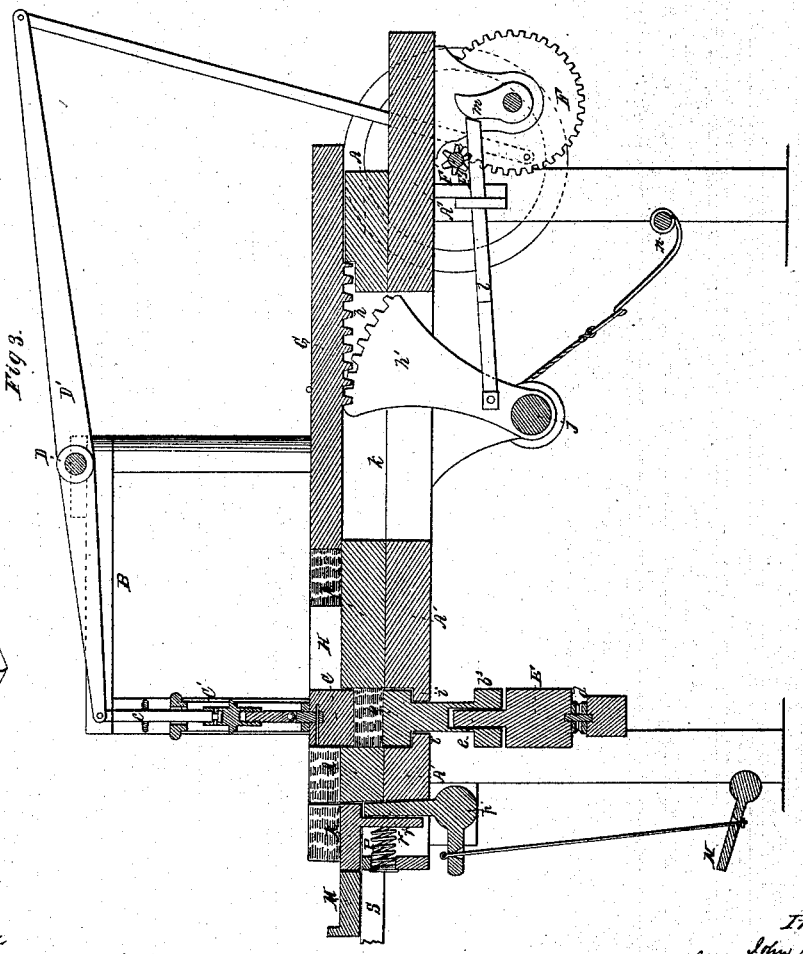
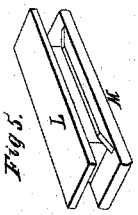


Fig 5.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN K. LEMON, OF ALLEGHENY CITY, PENNSYLVANIA.

IMPROVED MACHINE FOR PRESSING BRICK.

Specification forming part of Letters Patent No. **47,209**, dated April 11, 1865.

To all whom it may concern:

Be it known that I, JOHN K. LEMON, of Allegheny City, county of Allegheny, and State of Pennsylvania, have invented a new and Improved Machine for Pressing Brick; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, Sheet 1, is a vertical longitudinal section through the machine, showing a brick in a position to be forced into the pressing-box. Fig. 2 is a top view of the brick-press. Fig. 3, Sheet 2, is a sectional view of the machine, showing the several parts thereof in position for pressing a brick. Fig. 4, Sheet 2, is a vertical transverse section through the machine, exposing the press and movable bed between which the bricks are pressed. Fig. 5, Sheet 2, shows the boards which are used in removing the bricks from the machine.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to novel machinery for pressing green bricks, in which I employ a reciprocating follower in conjunction with a movable bed in such manner that both of these parts can be adjusted and set at any desired distance apart, according to the thickness required of the bricks. Said movable bed is actuated by means of the follower and also a spring in such manner that the pressed bricks are forced out of the press-box simultaneously with the retrocession of the follower, and brought into a position for being moved out of the way by a reciprocating follower which is arranged to work in a plane at right angles to the plane of the pressing follower, as will be hereinafter described. Provision is also made for affording said movable bed a firm foundation independently of its spring during the pressing operation, as will be described. Provision is also made for facilitating the removal of the pressed bricks from the machine and for preventing their surfaces from being injured during said removal.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A A′ represent the beds of a table which contains the contrivances for moving the bricks beneath the follower of the press, pressing them, and discharging them upon a shelf, to be removed from the machine. B represents a frame which is erected upon the beds of the table for guiding the follower C, and supporting the horizontal transverse shaft D of an oscillating lever, D′, which gives a vertical reciprocating movement to the follower. The follower-block C is very slightly smaller than the press-box *a*, into which it enters during the act of pressing a brick, as shown in Figs. 3 and 4. This block C is secured to a vertically-reciprocating frame, C′, which is guided between the forward posts of the frame B, and which is connected to the short arm of the lever D′ by means of a rod, C, which is provided with a contrivance for extending or contracting said rod, according to the throw which it is desired to give the lever D′.

The press-box *a* is a rectangular cavity made through the bed A and partially through the bed A′, as shown in the sectional views, Figs. 1, 3, and 4. This box contains a follower, *b*, which has a contracted extension, *b′*, formed on its lower side, that passes through a hole through the bottom of the press-box and terminates in a cylindrical enlargement, b^2. When the follower *b* is down, as shown in Figs. 3 and 4, it rests upon the bottom of the press-box, which affords it a firm, unyielding foundation, and in this position it is forced by the downward movement of the follower C in the act of pressing a brick, which is indicated in red lines in Figs. 3 and 4. When the follower *b* is up, as shown in Fig. 1, its top surface is in a plane with the surface of the upper bed, A, of the table, in which position it is forced and sustained by an elliptic spring, *d*, which is sustained upon a cross-bar arranged beneath the beds of the table, and which acts upon said follower through the medium of a cross-head, E, which is connected to the lower portion of the follower *b* by means of a stem, *e*, which merely serves as a guide for steadying and centering the parts.

In descending, the follower-frame C′ acts upon the cross-head E through the medium of two adjustable screw-rods, *f f*, which pass vertically down through said frame C′ and through the beds A A′ and press upon the extremities of the arms of the cross-head E, as shown in Fig. 4. These rods are adjustable

for the purpose of increasing or diminishing the distance between the two followers while in the position shown in Figs. 3 and 4, and thus regulating the thickness of the bricks. The rods *f f* depress the follower *b* by pushing down the cross-head and allowing this follower to descend by its own gravity, together with the follower C. By such an arrangement there is no pressure brought upon the green brick until it is confined within the press-box *a* and the follower *b* sustained upon its base *i i*. Then, follower C moves nearer the follower *b* and the pressing of the brick takes place, During this pressing action the rods *f f* continue to depress the cross-head E, and consequently to compress the elliptic spring *d*, leaving the follower *b* supported upon the shoulder portions *i i*. When the follower C has been forced down to its fullest extent, it begins to rise out of the press-box and allows the spring *d* to come into play and force the follower *b* to the surface of the bed A, as shown in Fig. 2.

The lever D′, which actuates the follower, has its long arm connected, by means of a pitman, D^2, to a spur-wheel, F, which is rotated by means of a pinion, F′, that is keyed on the main driving-shaft F^2. The pitman is connected by means of a wrist-pin to the face of the large spur-wheel F, so that this will operate as a crank for vibrating the lever D′.

G represents a follower, which is sustained upon the horizontal face of the bed-plate A and guided in its longitudinal reciprocating movements by means of the parallel guides or ledges H H′, which extend from end to end of the bed A, so as to serve also as guides for the bricks in their passage to the pressing-box to be pressed, and in their passage from this box to a movable slide, K. The ledge H′ has an opening through it, or a space between its sections, for the purpose of enabling the attendant to introduce bricks, one at a time, in front of the follower or feeding-board G, as indicated in red lines, Figs. 1 and 2.

On the bottom of the follower G is a rack, *h*, which receives the teeth of an oscillating segment, *h′*, that is keyed to a shaft, *j*. The toothed segment oscillates within a slot, *k*, which is made through the two beds A A′, and moves the follower G back and forward a sufficient distance to receive a brick in front of it, and to move this brick forward and leave it upon the top of the follower *b*, as indicated in red lines, Fig. 1. The shaft *j* of the oscillating segment is rocked by means of a rod, *l*, which is acted upon by a toe, *m*, on the shaft of the spur-wheel F, and a spring, *n*, which is connected to a pulley on shaft *j* by means of a cord or chain, as shown in Figs. 1 and 3. The toe *m* moves the follower G forward, and the spring *n* returns it to its original position.

At the forward termination of the parallel guides H H′ the bed A is cut out to receive a transverse strip, K, which may be termed a "separator," as it is used for separating the bricks as they come from the press-box *a*, to admit of the introduction between them of a thin board, L, (represented in Fig. 5,) in order to enable the attendant to slide the bricks one at a time, and without injuring them, upon a shaft, M. The surface of the strip K is level with the surface of the bed A, and this strip is moved in a longitudinal direction or toward the shelf M by means of a treadle, N, and a spring, P. The treadle N is connected, by means of a rod, *p*, to a rock-shaft, *p′*, having an arm, *r*, projecting from it and acting upon an arm, *r′*, projecting from the strip K when the treadle is depressed. When the treadle N is released, the spring P will return the strip to its former position, or the position shown in Figs. 1, 2, and 3. It is not necessary to move the separating-strip a great distance, as it is only required to separate the brick which is to be removed from the machine a sufficient distance to introduce behind it the thin board L, by means of which the brick is drawn upon the removable shelf M and carried off upon this shelf.

In the operation of my machine the bricks are moved up to the press-box and then moved forward upon the separating-board K by the follower G, which moves the pressed bricks away from the press-box at the same time that it moves a green brick in a position to be pressed.

Each boy who attends the machine is provided with a shelf, M, and a board, L. The former he places upon the brackets S while he draws a brick upon it by the board L, after which this board is placed upon the brick, as shown in Fig. 5, and the whole removed.

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

1. A brick-press which employs a pressing-follower, C, and a movable supporting-follower, *b*, which are so combined and operated that the latter is allowed to descend by its own gravity during the introduction of a brick into the press-box, and to rise during the retrocession of the pressing-follower C, substantially as herein described.

2. A spring, *d*, or its equivalent for elevating the follower *b*, in combination with the cross-head E and rods *f f* of the frame C′, for allowing the follower *b* to descend, substantially as described.

3. Providing for adjusting the followers C and *b* so as to work nearer to or farther from each other, according to the thickness of the bricks required, substantially as described.

4. Sustaining the follower *b* when in an elevated position upon a spring, *d*, or its equivalent, and when in a depressed position upon the bottom *i i* of the press-box *a*, substantially as described.

5. The combination of a reciprocating follower, G, and guides H H′, with the movable followers C and *b*, substantially as described.

6. A movable separating-board, K, in combination with a brick-press in which the three

followers C, *b*, and G are employed, substantially as described.

7. The separator K, when used in conjunction with a follower, G, or its equivalent, and a removable shelf, M, substantially as described.

8. The parallel guides H H′, in combination with the movable followers C, *b*, and G, arranged and operating substantially as described.

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Witnesses:

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BENJ. CRAWFORD.