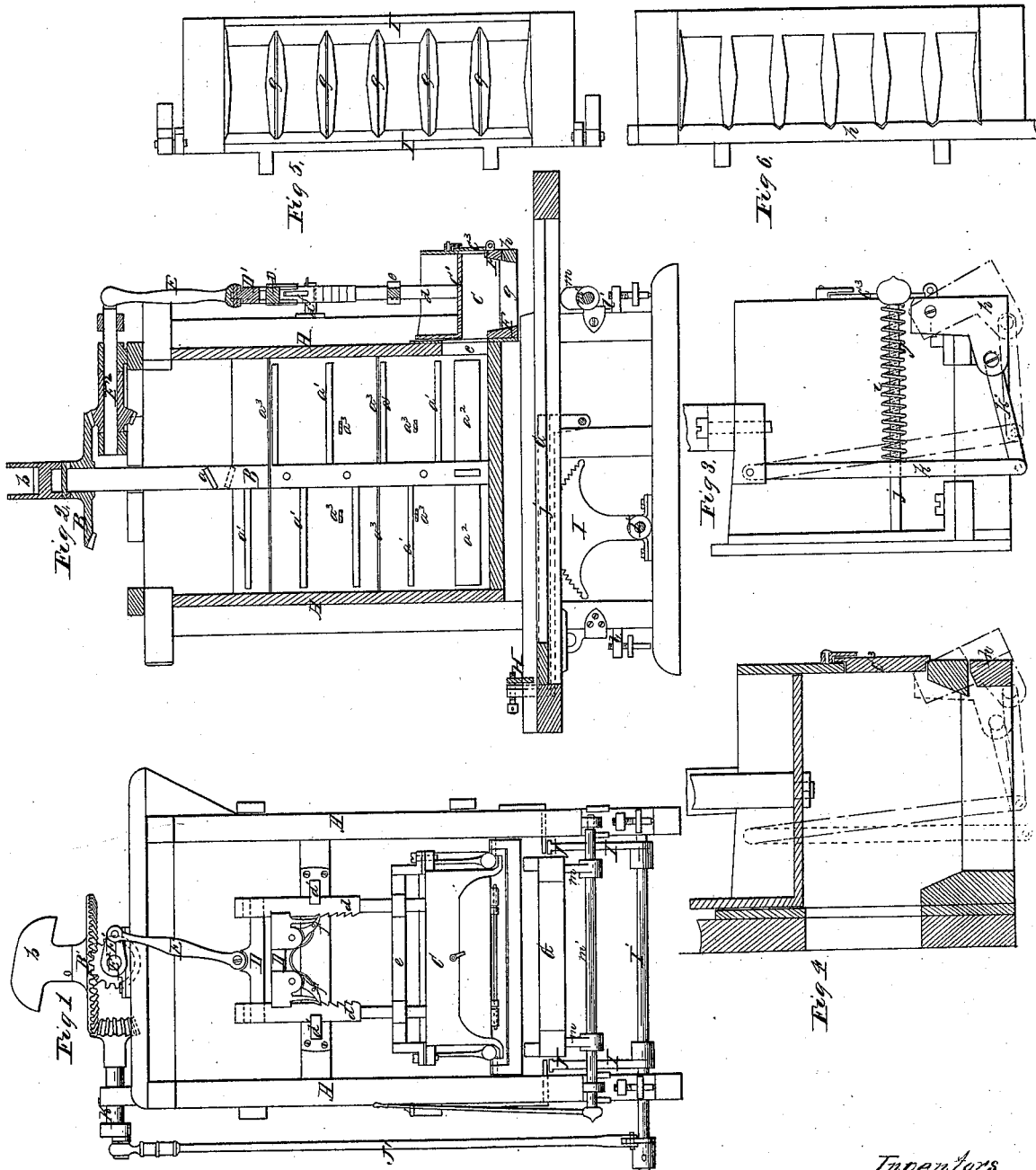


Barker & Martin, Brick Machine.

N^o 54,460.

Patented May 1, 1866.



Witnesses,
Attest
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Inventors,
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UNITED STATES PATENT OFFICE.

WILLIAM BARKER AND GAYLORD MARTIN, OF SCHENECTADY, NEW YORK,
ASSIGNORS TO EMPIRE STATE BRICK MACHINE COMPANY, OF SAME
PLACE.

IMPROVED BRICK-PRESS.

Specification forming part of Letters Patent No. 54,460, dated May 1, 1866.

To all whom it may concern:

Be it known that we, WILLIAM BARKER and GAYLORD MARTIN, of Schenectady, in the county of Schenectady and State of New York, have invented a new and Improved Brick and Peat Press; and we 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 is a front elevation of our machine for pressing clay or peat into molds. Fig. 2 is a longitudinal section taken in a vertical plane through the center of the press. Fig. 3 is a view of one end of the press-box. Fig. 4 is a vertical section through the press-box. Figs. 5 and 6 are views of the grating which forms the bottom of the press-box.

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

This invention relates to certain novel improvements on the machine for making bricks which was secured to us by Letters Patent on the 23d day of August, 1864.

The object of the present invention is to provide for the free escape of stones or other foreign substances from the press-box, so that should such substances as would either derange or break the machine get beneath the plunger they will be forced out of the press-box by the action of the said plunger without stopping the movements of the machine, as will be hereinafter described.

Another object of our invention is to so construct the grated bottom of the press-box through which the substance to be molded is forced that this grating will serve to cut the clay and to compel more of the clay to be forced toward the ends of the molds than is forced in the center thereof, thereby making more perfect bricks, having well-defined corners or angles, as will be hereinafter described.

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

In the accompanying drawings, A represents a pug-mill, which is charged at its upper end. B is a vertical central shaft, which is stepped upon the bottom of the box A, and supported near its upper end in suitable bearings. This shaft is armed with feathered

blades near its upper end, which are intended for feeding and pressing the clay or peat downward. Below these blades *a a* are a number of rods, *a'*, radiating from the shaft B, for the purpose of stirring and pulverizing the clay or peat, and near the bottom of the mill blades *a²* project from the shaft B and operate to force the clay or peat from the mill through an opening, *c*, into the press-box C. The stationary horizontal blades *a³* serve, in conjunction with the rods *a'*, to cut and finely disintegrate the clay or peat, so that when these substances reach the bottom of the mill they will be in a proper condition for being pressed into molds.

When peat is subjected to the mill the radial rods and stationary blades above described will cut and divide its fibers and break up the lumps, and thus render it suitable as a fuel when condensed in the form of bricks.

The shaft B carries a large beveled spur-wheel, B', near its upper end, and also a cap, *b*, to receive a lever or sweep, by which the said shaft is rotated.

The press-box C is of a rectangular form, having a plunger, C', arranged in it, which is so constructed that one side of this plunger prevents the escape of clay or peat over the horizontal part of it by closing the opening *c* as the plunger descends.

Two vertical rods, *d d*, are suitably secured to the plunger C' and guided by the bridge *e*, which is secured to the press-box, as shown in Fig. 1. The upper portions of the guide-rods *d d* are serrated and guided by the slotted brackets *d' d'*, which serve, in conjunction with the lower guides, to move the plunger C' up and down in a horizontal plane.

A cross-head, D, having its ends slotted and fitted between the guides *d d*, is held in place by means of spring-pawls *f f*, engaging with the teeth of the guide-rods *d d*. By disengaging said pawls from the teeth on the guide-rods the cross-head can be adjusted up or down and set at any desired point, according to the degree of pressure required.

Above the cross-head D is another cross-head, D', the ends of which are free to move in vertical slots in the guide-rods. This cross-head D' is attached, at the middle of its length, to the pitman-rod E, which is pivoted to a crank, E', on a horizontal shaft, E², which has its bearings on top of the pug-mill, as shown

in Figs. 1 and 2. The shaft E^2 is rotated by means of a pinion spur-wheel engaging with the large driving-wheel B' on shaft B .

The plunger can be caused to descend more or less in its box C by adjusting the cross-head D up or down.

The bottom of the press-box is composed of grate-bars g , which, in cross-section, are of a triangular form, and in a horizontal or plan view are of a lozenge shape, as shown in Figs. 5 and 6. By thus constructing the grate-bars their tapering and beveled sides will cause the clay to be forced from the center toward the ends of the molds, which are placed beneath the press-box. These grate-bars g also serve to cut the substance which is forced between them, their sharp or acute edges being upward, as shown in Fig. 5. The ends of these bars g are secured to or cast with a rectangular frame, F , which is equal in area to the base of the press-box, to which this frame is suitably secured.

Beneath the outer bar of the frame F is a gate, h , which is pivoted at its ends to the ends of said frame, so as to open outward and admit of the escape of stones or other hard substances which would derange or break the press. This gate or bar h is held in contact with the outer ends of the grate-bars g , as shown in black lines, Figs. 2, 3, and 4, by means of springs i , which are coiled around rods j , that pass through levers k and are rigidly secured to the back part of the press-box.

The levers k are pivoted at their upper ends to the press-box and connected at their lower ends to the gate h by means of links l' , as shown in Fig. 3.

The springs i should exert such force to keep the gate h closed as will prevent this gate from being forced open under ordinary circumstances; but should a stone or any hard substance get beneath the plunger C' in the press-box this gate will open and allow such substance to escape without injury to the press or stopping of the movements thereof.

The door C^3 , opening into the front of the press-box, is intended for allowing of inspection of its interior without the necessity of removing the plunger.

G is a longitudinal table, which is pivoted near its rear end to the frame of the pug-mill by means of vertically-adjustable brackets l . The ends of this table project out in front and rear of the machine, so that the mold-boxes can

be placed upon the rear of said table preparatory to being forced under the press-box, and then delivered at the front of the table.

The front end of the table G is supported upon cams m on a transverse rock-shaft, m' , by means of which the table can be brought to a horizontal plane or inclined forward. The shaft m' has its bearings in adjustable brackets l' , which, with the brackets l , will admit of the table being adjusted up or down bodily.

The molds are placed upon the rear end of the table G , in front of a transverse carrier, H , which carrier receives a reciprocating motion from the oscillating toothed segments I , which engage with rack-bars J , to which the carrier is applied.

The segments I are keyed on a transverse shaft, I' , carrying a crank on one end, to which crank a pitman, J' , is connected. The upper end of this pitman is connected to a crank which is on a horizontal shaft, K , at the top of the machine, and this shaft is rotated by means of a pinion spur-wheel and the driving spur-wheel on the main shaft.

The carrier H moves the mold-boxes beneath the press-box during the ascent of the plunger C' and retires during the descent of said plunger. The carrier H moves the boxes toward the front end of the table after they are filled.

The manner herein shown of moving the mold-boxes up to and from the press-box is not our invention, and therefore we do not desire to lay any claim to the contrivances herein shown for this purpose. Any form of carrier may be employed and any suitable means for operating it may be adopted.

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

1. Providing a press-box which is attached to a pug-mill with a yielding gate, h , which will operate to relieve the press from obstructions, substantially as described.

2. Constructing the bottom of the press-box of grate-bars g of a lozenge shape, or of such shape that they will direct the clay or other substance under pressure in said box toward the ends of the mold-boxes, substantially as described.

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