J. Butler,

Brick Machine,

No. 7,048. Patented Jan. 29, 1850.

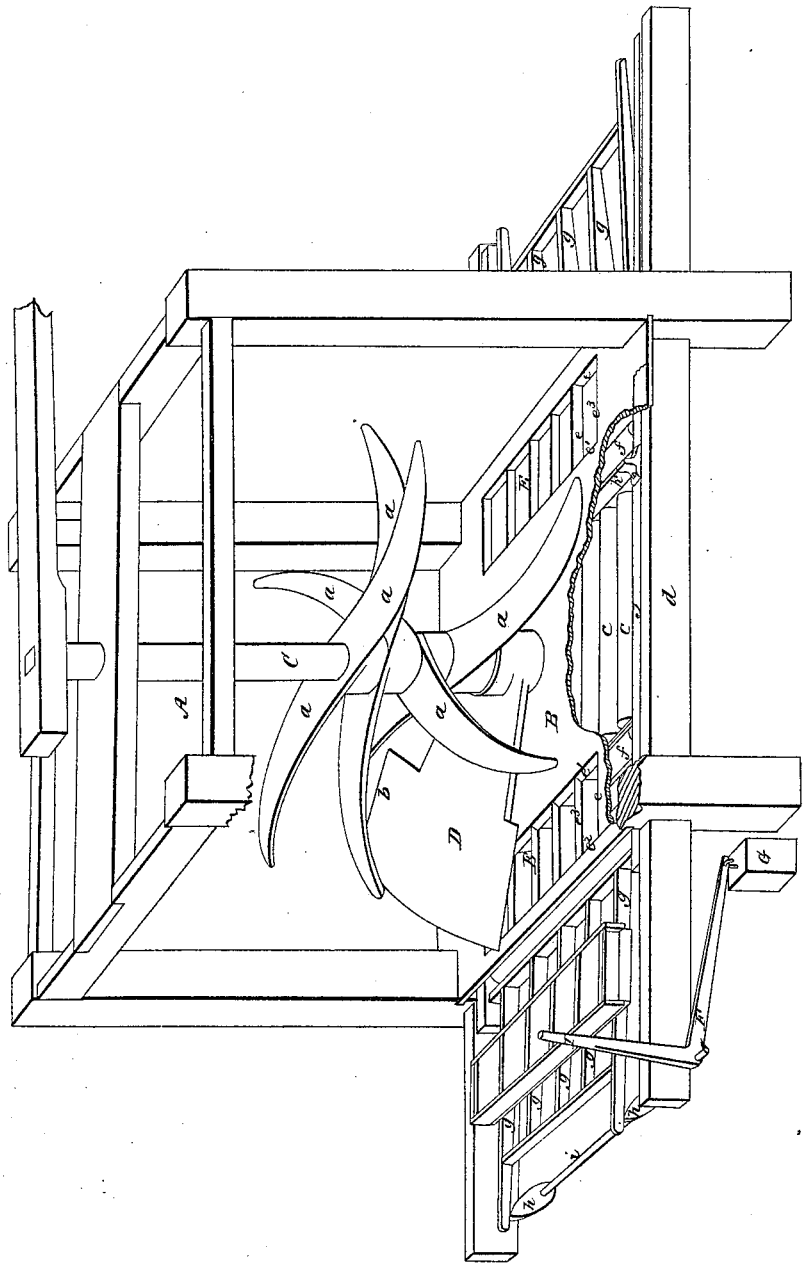

Fig. 1.

UNITED STATES PATENT OFFICE.

JOHN BUTLER, OF BUFFALO, NEW YORK.

BRICK-PRESS.

Specification of Letters Patent No. 7,048, dated January 29, 1850.

To all whom it may concern:

Be it known that I, JOHN BUTLER, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machines for Manufacturing Bricks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms part of this specification, and in which—

Figure 1 represents a view in perspective of my machine with certain portions of the case and frame removed to show more clearly its interior structure and arrangement, Fig. 2 is a plan of the bottom of the machine reversed, and Figs. 3, 4 and 5, are views of the brick molds.

My machine is constructed to grind the clay, to compress it into molds, and to deliver the latter when filled with clay. The clay is ground by means of a pugmill forming part of the machine; this consists of a square case A closed at the bottom B and open at the top for the introduction of the clay, and of an upright shaft C furnished with knives *a*, *a*, *a*, by which the kneading or grinding is performed. The knives are arranged around the shaft, one above the other gradually rising from the bottom of the mill toward its top in a screw form, their lower faces being slightly inclined downward from the cutting edge in order to force the clay toward the bottom of the mill. A broad wing D or compressor is secured to the lower extremity of the shaft C just above the bottom of the mill, this is inclined downward from its front edge *b* so as to force the clay by its revolution with the shaft through two sets of openings or false molds E, E, in the bottom of the mill on opposite sides of the shaft, C. Three of the sides *e*, *e'*, e^2, of each false mold are inclined toward each other to facilitate the entrance of the clay, the fourth side e^3, which is the one last passed over by the revolving compressor is vertical to prevent the escape of the entering clay until the mold beneath is filled. A bed to support the molds is attached to the frame of the machine beneath the bottom of the pug-mill, this bed is composel of three portions the central one being fixed and the two extreme ones being movable. The central portion is about equal in width to the distance between the two sets of false molds E and is composed of rollers *c*, *c*, whose axes are parallel with the side pieces *d*, *d*, of the frame of the machine. The extreme portions of the molding bed extend from the central one in each direction a sufficient distance to deliver the filled molds from beneath the bottom of the pug-mill to the carriers-off. Each consists of a frame, the part of which beneath the bottom of the pug-mill is formed of rollers *f*, *f*, whose axes are perpendicular to the sides of the machine, the remaining part being formed of rails *g*, *g*, *g*, on which the molds can slide. The inner extremity of each of these frames is hinged to the side pieces *d*, *d*, of the frame of the machine, and its outer extremity is supported on two cams *h*, *h*, projecting upward from a transverse shaft *i*; the outer extremity of each shaft is fitted with an arm F to which a weight G is applied which tends to keep the portion of the bed against which the cams act in its proper position to support the molds against the bottom of the false mold; the shaft is also furnished with an upright lever I by which the cams can when necessary be depressed by hand. A sliding carriage J is supported between the side pieces *d*, *d*, of the frame, to which carriage the driver *k* is secured, the latter consists of a bar projecting above the rolls sufficiently to strike the molds placed upon them. The carriage is put in motion by the shaft C the lower extremity of which projects below the bed of rollers and is furnished with a crank K which is connected with the cross bars *l*, *l*, of the carriage by chains *n*, *n*. The cases into which the clay is compressed to form the bricks are represented at Figs. 3, 4, and 5 each is composed of three distinct portions, the mold *m*, which consists of a series of equal sized cavities *o*, *o*, *o*, open at top and bottom, the pallets *p*, *p*, *p*, which close the bottoms of the cavities of the mold, and the bottom board *q*, which supports the whole and retains the pallets in their proper position. The pallets correspond in number with the number of cavities in the mold, they are held in their proper place by bosses *r*, *r*, *r*, secured to the bottom board and projecting upward through holes in the pallets. The bosses serve the double purpose of retaining the pallets in their proper positions, and of forming a sunk pannel in the brick to receive the mortar by which they are cemented together. Cleets *s*, *s*, are secured to the bottom board which prevent the mold from

changing its position with respect to the pallets.

The operation of the machine is as follows: The material of which the bricks are to be made is thrown into the open top of the pug-mill, and, the shaft being put in motion by horse or other power, the knives cut and knead the mass while the crank at the lower end of the shaft forces the driver to and fro. A mold (with its pallets and bottom board) is introduced endwise upon the central portion of the molding bed by an attendant at the side of the machine, and is forced by the driver beneath the false molds where it is filled with clay by the action of the revolving compressor; as then the driver by the revolution of the crank is drawn away from the mold to be forced against a mold introduced on the opposite side of the central shaft, a second mold is inserted on the same side as the first, and as the driver returns, this new mold is forced against the first and shoves it out upon the rails while the new one takes its place beneath the false mold to receive its charge of clay. As the mold is thus forced out of the machine, the bottom of the false mold strikes off the tops of the bricks, while if a stone or other extraneous substance intervenes, the outer extremity of this portion of the bed being supported only by the weighted cams gives before the pressure produced and allows the mold to descend sufficiently to be discharged by the succeeding mold without the breakage or stoppage of any portion of the machine.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the crank K, chain *n*, and oscillating frame or carriage J, with the stationary bed of rollers *c*, *c*. The whole being arranged and operated as herein described for the purpose of supporting the molds while being filled and pressed, striking the bricks and then pushing the molds out of the machine.

JOHN BUTLER.

Signed in presence of—

HIRAM BARTON,

ANDREW J. MCNETT.