L. E. Ransom,

Brick Machine.

No. 548. Patented Jan. 9, 1838.

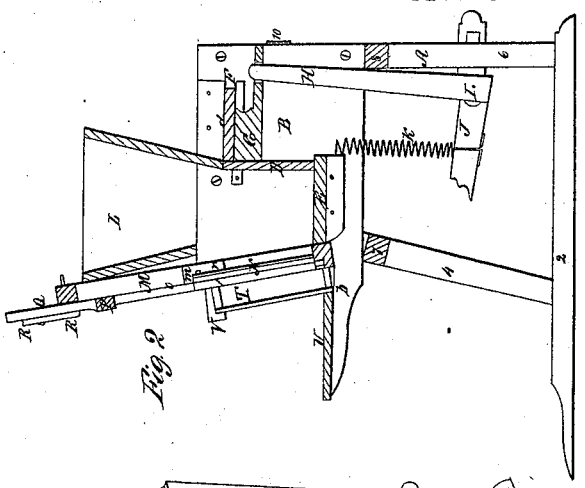

Fig. 2

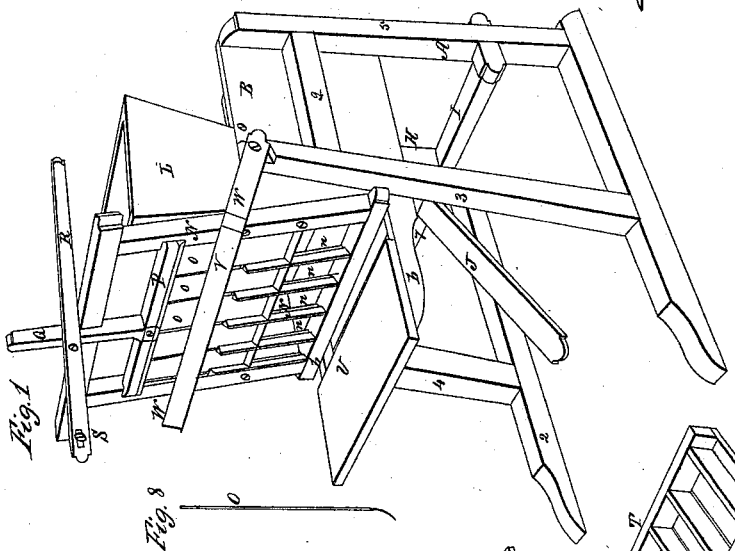

Fig. 1

Fig. 8

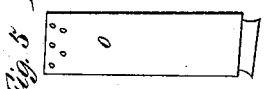

Fig. 5

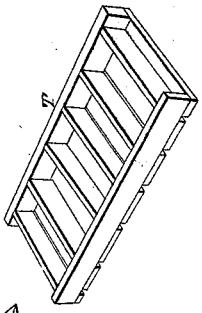

Fig. 3

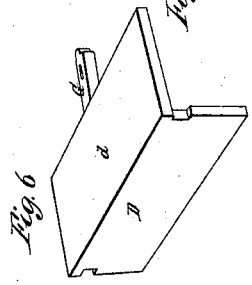

Fig. 6

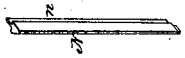

Fig. 4

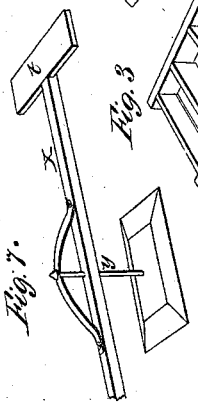

Fig. 7

UNITED STATES PATENT OFFICE.

LOOMIS E. RANSOM, OF MILL PORT, NEW YORK.

MACHINE FOR MOLDING BRICKS.

Specification of Letters Patent No. 548, dated January 9, 1838.

To all whom it may concern:

Be it known that I, LOOMIS E. RANSOM, of Mill Port, in the county of Chemung and State of New York, have invented a new and useful Improvement in Machines for Molding and Off-Bearing Brick and Tile, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 represents a perspective view of the machine. Fig. 2, represents a vertical section through the center of the machine. Fig. 3, represents the molds. Fig. 4, represents one of the ribs of the grating detached. Fig. 5, represents one of the strikers detached from the machine. Fig. 6, represents the follower. Fig. 7, vibrating or revolving beam for off-bearing the brick.

A, Figs. 1 and 2, represents the frame of the machine for containing and supporting the several parts hereafter described, composed of two sills 1, 2, four posts, 3, 4, 5, 6, two cross timbers 7, 8, and two end pieces 9, 10, all well mortised and tenoned together, making a frame of suitable size and strength for the purpose intended. The two front posts 3 and 4, lean back toward the rear of the frame at an angle of 5 or 10 deg. from a perpendicular.

B, B, are two strong boards secured to the insides of the posts reaching from their tops, nearly down to the center of the frame, one on each side and extending in front, at top, about four inches beyond the top of the inclined posts and at the bottom about 16 or 18 inches, the bottom projection forming a rest for the inclined frame, table, and molds, hereafter described. The parts which form the rest for the table, molds, and inclined frame, are marked *b*, *b*. The parts marked B, B, form the ends of the clay-box in which the follower D, moves horizontally for pressing the clay into the molds. Near the bottom of the boards are nailed strips for supporting a board E, which forms the bottom of the clay-box. Near the top of the boards on each side are nailed two parallel strips forming channels F, in which the top of the follower slides. The follower stands in a vertical position and moves horizontally over the bottom of the clay box.

D, represents the follower formed of a vertical board made to move backward and forward over the bottom of the clay box for pressing the clay into the molds when moved forward, to the center of which is mortised and tenoned a piece of timber G projecting horizontally a sufficient distance to affix thereto by a loose joint a vertical piece of timber H mortised and tenoned into a vibrating bar or roller I moved by a treadle J mortised and tenoned into said vibrating bar, the gudgeons of which turn in apertures in studs or blocks projecting inward from the two rear posts of the frame. The top of the follower *d*, is a board about the size of the top of the clay box and bottom of the hopper and is fastened horizontally to the upper edge of said vertical piece, and moves horizontally in the channel before mentioned and is for the purpose of preventing the descent of the clay where the follower is forced forward toward the molds. K, spring for raising the treadle when the foot of the operator is raised. The treadle may also be raised by a counter weight. L, the hopper for receiving the clay which is a continuation of the clay-box upward in a flaring manner similar to other hoppers to a sufficient height to form a hopper of the requisite capacity. M, an inclined rectangular frame containing the grating and in which the strikers move, composed of four pieces of timber mortised and tenoned together with a center cross piece *m*, and placed in front of the hopper and clay box inclining forward at an angle of about five or ten degs. from a vertical line extending from the top of the hopper to the bottom of the clay box and resting on the projecting parts *b*, *b* of the side boards, said frame being secured to the front of the clay-box by screws. N, the grating. This consists of a convenient number of cast iron ribs N, formed slopingly toward the molds, being of a trapezoidal figure with a thin rectangular tongue *n*, in the center toward the clay-box, set parallel with each other in the inclined frame in such a manner that the inner edges of every pair of ribs shall be a little nearer together than the divisions of the molds or the size of the intended brick, so that as the clay is forced between them the pieces of clay shall pass into the molds without touching the sides thereof and thus avoid removing the sand scattered on the inside of the mold. The lower end of each rib is let into a mortise made in the bottom piece of the inclined frame and the upper end into a similar mortise in the middle piece *m*.

O represents the strikers. These consist of as many rectangular pieces of metal as there are spaces between the ribs forming the grating and in which spaces they move up and down in their operation of striking the brick. They are fastened to a horizontal bar P, of wood moving up and down between the sides of the inclined frame, leaving spaces between every pair of strikers equal to the thickness of the tongue of the trapezoidal ribs and against the sides of sides of which tongue they move, the lips of the ribs guiding the strikers. The lower edge of each striker is made sharp and curving outward toward the molds about a quarter of an inch, the edges being even with the triangular ribs so that in striking, the edge only of the striker passes over the face of the clay in the molds and thus it is prevented from adhering to the face of the strikers. The curved corners of the strikers are made so as to correspond with the inclined sides of the ribs and so that each striker shall present a cutting surface equal to the width of the mold. From the horizontal bar P, to which the strikers are fastened, projects upward a dovetailed shaped arm Q sliding in a mortise of a similar shape cut in the top piece of the inclined frame. To this arm is attached by a pin a lever R near its center moving on a pin S, inserted through one of its ends into said top piece of the inclined frame for elevating and depressing the strikers. T, the molds placed edgewise on the rest of the table parallel with the grating and against the inclined frame, the lower side of the molds being secured by resting against the inner edge of the table U and the upper side being secured by a clamp-bar V, having two arms W, turning on bolts inserted into the tops of the inclined posts of the frame to allow the clamp to slip over the molds. By inclining the frame and grating with the molds from the hopper and toward the table the gravity of the clay causes it to fall back into the molds and when the clamp is raised from the molds it causes them to fall back into the hands of the workman or upon the table, ready for being taken off without any danger of the clay falling out of the molds during the operation.

The off bearing or conveying away of the brick is performed by means of a horizontally vibrating or revolving beam X, Fig. 7, with tables *t* on its ends, said beam turning on a pivot Y and upon which tables the molds are placed and conveyed off thus doing away with the necessity of off-bearing by hand and returning with the empty molds.

Operation: The clay being properly tempered is put into the hopper from whence it descends by its gravity to the clay-box; the operator raises the strikers or slides and steps upon the treadle which causes it to descend and by means of the vibrating bar and connecting rods causes the follower to advance toward the grating with the clay which it pushes through into the molds in separate pieces formed by said grating. The operator then brings down with his hand the lever and strikers or cutters which strike or cut the brick from the clay in the box. The clamp is then raised. The molds from their inclining position will then fall upon the table or into the hands of the operator who places them upon the table at the end of the vibrating or revolving beam which conveys them to any distance required. Empty molds are then put in the place of the molds just removed and are clamped against the grating as before. The foot having been removed and the treadle raised by the gravity of the mortar, spring, or weight, draws back the follower and a fresh supply of clay descends into the clay-box. The lever and strikers are raised and the treadle again depressed which carries forward the follower and again forces the clay into the mold in the manner above described which forms the brick. These are then struck or cut and removed in the same manner as the last, and so on the operation is continued.

This machine may be used with or without a grinder, and the molds may be either wet or sanded.

The invention claimed by me, the said Loomis E. Ransom, and which I desire to secure by Letters Patent, consists—

1. The manner of constructing the ribs of the grating and of arranging them as before described.

2. The method of constructing the strikers as above described with their lower ends curved forward to prevent the clay adhering to the face of the strikers.

3. The arrangement of the inclined frame to give the molds an inclining position forward in order to cause the clay by its gravity to fall into the molds after being cut and to enable the operator to remove them with ease, as above described.

LOOMIS E. RANSOM.

Witnesses:
Wm. P. Elliot,
Wm. Bishop.