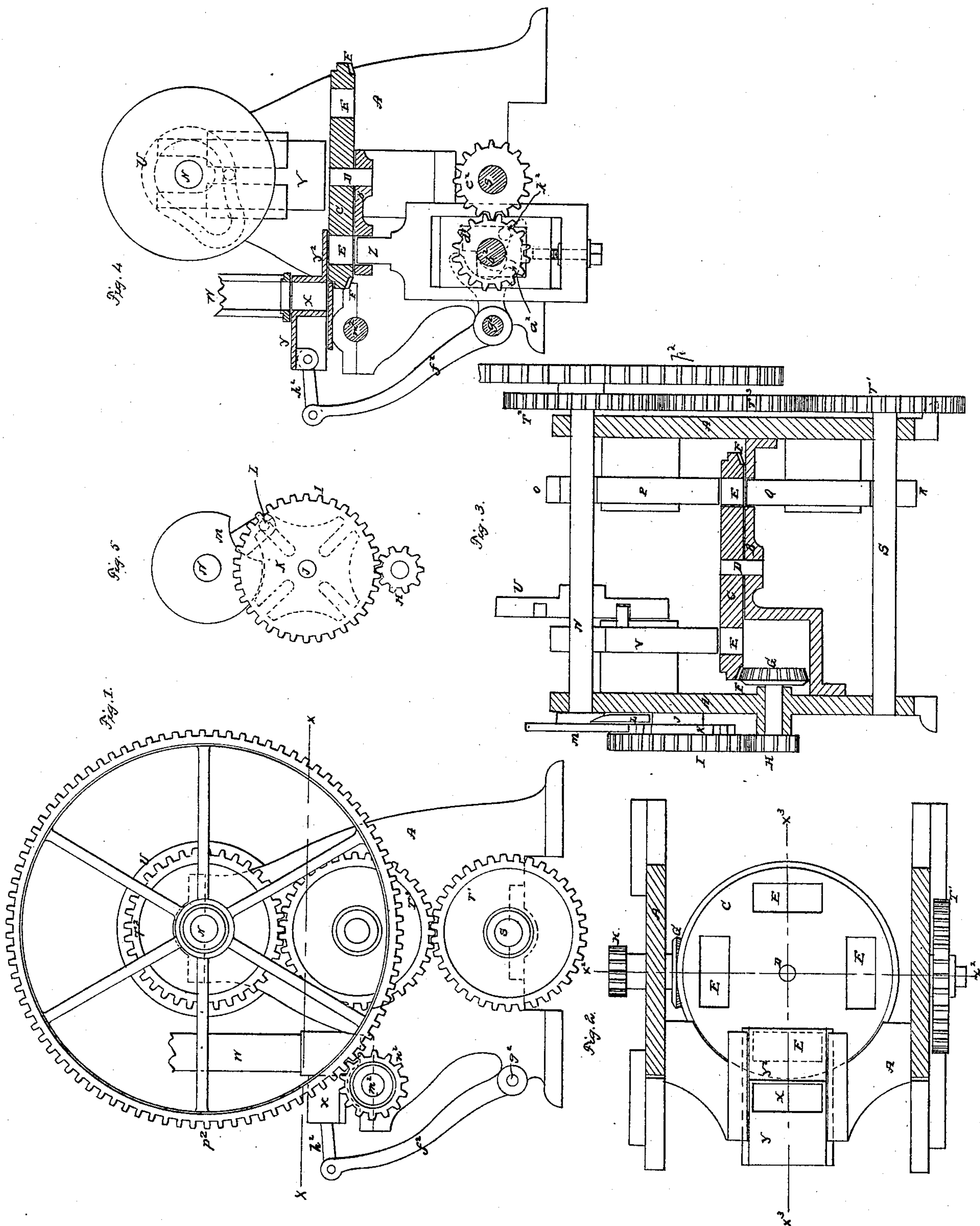


G. Bancker,
Brick Machine,
No 20,536, *Patented June 15, 1858.*



UNITED STATES PATENT OFFICE.

GERARD BANCKER, OF NEW YORK, N. Y.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 20,536, dated June 15, 1858.

To all whom it may concern:

Be it known that I, GERARD BANCKER, of the city, county, and State of New York, have invented certain new and useful Improvements in John Boynton's Improved Brick-Machine, patented August 5, 1856; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a side elevation of the machine, omitting the endless belt for carrying the brick out of the machine. Fig. 2 is a plan view through the line xx , Fig. 1. Fig. 3 is a vertical cut-section through the line $x^2 x^2$, Fig. 2. Fig. 4 is a vertical cut-section through the line $x^3 x^3$, Fig. 2. Fig. 5 is a detached view of the intermittent feed-motion.

Letter A represents the frame, which may be constructed of any suitable material and form to adapt it to the work required of it. At the lower part of the frame is secured a bed-plate B. Upon this bed-plate is arranged the circular molding-plate C, arranged upon and made to revolve on a spindle D, extending through an opening in the bed-plate B. The molding-plate is intended to be thicker than the brick to be formed, and in it are four or any other suitable number of matrices E, arranged at equal distances apart and from the spindle D. Upon the under side of the molding-plate is secured cogs F, which gear into a small bevel cog-wheel G, arranged at right angles to the molding-plate for the purpose of rotating it when required. On the outer end of the axis on the cog-wheel G is secured a second cog-wheel H, which gears into another cog-wheel I, having upon its axis J (and secured to the cog-wheel I) a quadrated cam K, which is operated upon by a crank-pin L, secured on the crank M, attached to the end of the upper transverse shaft N, for operating one of the compressors and the brick or mold discharger. The object of this quadrated cam K is to rotate the molding-plate by an intermittent motion the quarter of a circle at each revolution of the shafts for operating the compressors, so as to allow time for filling the molds and compressing the clay to form the brick.

Letter O is a cam on the shaft N, the object

of which is to operate an upper plunger or compressor P to compress the clay in the matrix on the upper side in opposition to the action of the lower side plunger or compressor Q, operated by a cam R on a shaft S at the under side of the bed-plate B, and having a uniform speed given to it with that of the shaft N by means of the cog-wheel T' and T² on the ends of their respective shafts gearing together through the intermediate cog-wheel T³, arranged on an axis extending from the side of the frame A. The object of this arrangement of the two compressors is to compress the brick at opposite sides while in the matrix, and thereby obviate the use of a bed upon which the clay would have to be pressed, as well as the tendency of the clay to adhere to the surface of the bed when pressed upon it, and thereby destroy the sharp corners of the brick and otherwise affect its perfect formation.

Letter U is a grooved cam-wheel secured upon the shaft N, the object of which is to operate a piston V for the purpose of discharging the brick from the matrix upon any suitable endless table or belt for carrying the brick out of the machine.

Letter W is a hopper into which the pulverized clay is put for delivering it to the reciprocating feed-box X. This feed-box is secured in suitable guideways upon the frame of the machine, so that its lower surface is on a level with the upper surface of the molding-plate C. Attached to the upper back edge of the feed-box is a flange Y, and also a similar one Y², attached to the lower front edge of it. The object of the first of these flanges Y is to cut off the further supply of clay from the hopper when the feed-box has been projected forward over the matrix in the molding-plate C to deliver its charge into the matrix, and the other Y² is intended to form a covering or cap-plate to the matrix to sustain the pressure upon the clay for expelling the air therefrom and shaping the brick when the feed-box has been drawn back to receive a second charge of clay.

Letter Z is an air-expelling piston. This is arranged in suitable guideways in a vertical position, so that the upper end or face of it is directly under the lower opening of the matrix, but near enough to prevent any part of the clay in it escaping. The piston Z is oper-

ated by a cam a^2 , secured upon a horizontal shaft b^2 at the lower part of the machine, which is rotated by means of a cog-wheel d^2 upon it gearing into a propelling cog-wheel e^2 on the lower plunger or piston-shaft S. The cam a^2 is intended to elevate the piston gradually till its greatest pressure, and then by its abrupt termination drop the piston suddenly, so as to clear the matrix to allow of the rotation of the molding-plate to complete the pressure in the second operation under the upper and lower pressers.

Letter f^2 is a bell-crank secured upon a rock-shaft g^2 and having attached to its vertical arm a connecting-rod h^2 for alternating the motion of the feed-box between the hopper and matrix. This alternating motion is communicated to the crank by means of a pin k^2 in the side of a wheel attached or secured upon the shaft b^2 , operating upon the forked end of the horizontal arm of the crank f^2 , so that as it rotates the pin k^2 acts first upon one toe of the fork and then the opposite, and thus transmits a reciprocating motion to the feed-box.

Letter m^2 is a propelling-shaft, having on its end a small cog-wheel n^2 , which gears into a second cog-wheel p^2 , secured on the end of

the shaft N for operating the upper compressor-piston P.

Having now described the working parts of my invention, I will proceed to set forth what I claim and desire to secure by Letters Patent of the United States:

1. The use of the flanges Y and Y^2 , in combination with the feed-box Y and rotating molding-plate C, or equivalents, substantially as described, and for the purposes hereinbefore set forth.

2. The use of the air-expeller piston Z, in combination with the rotating molding-plate C and the flange Y^2 , or equivalents, actuated simultaneously with the feed-box, for the purposes substantially as hereinbefore described.

3. In combination with the rotating plate C, the reciprocating feed-box X, having the flanges Y and Y^2 attached thereto, the bell-crank f^2 , and pin k^2 on the cam a^2 , when these several parts are constructed, arranged, and operated in the manner and for the purposes hereinbefore set forth.

GERARD BANCKER.

Witnesses:

PETER R. ROACH,

CHARLES L. BARRITT.