

I. Z. A. Wagner,
Brick Machine.

N^o 8,024.

Patented Apr. 8, 1851.

Fig: 1.

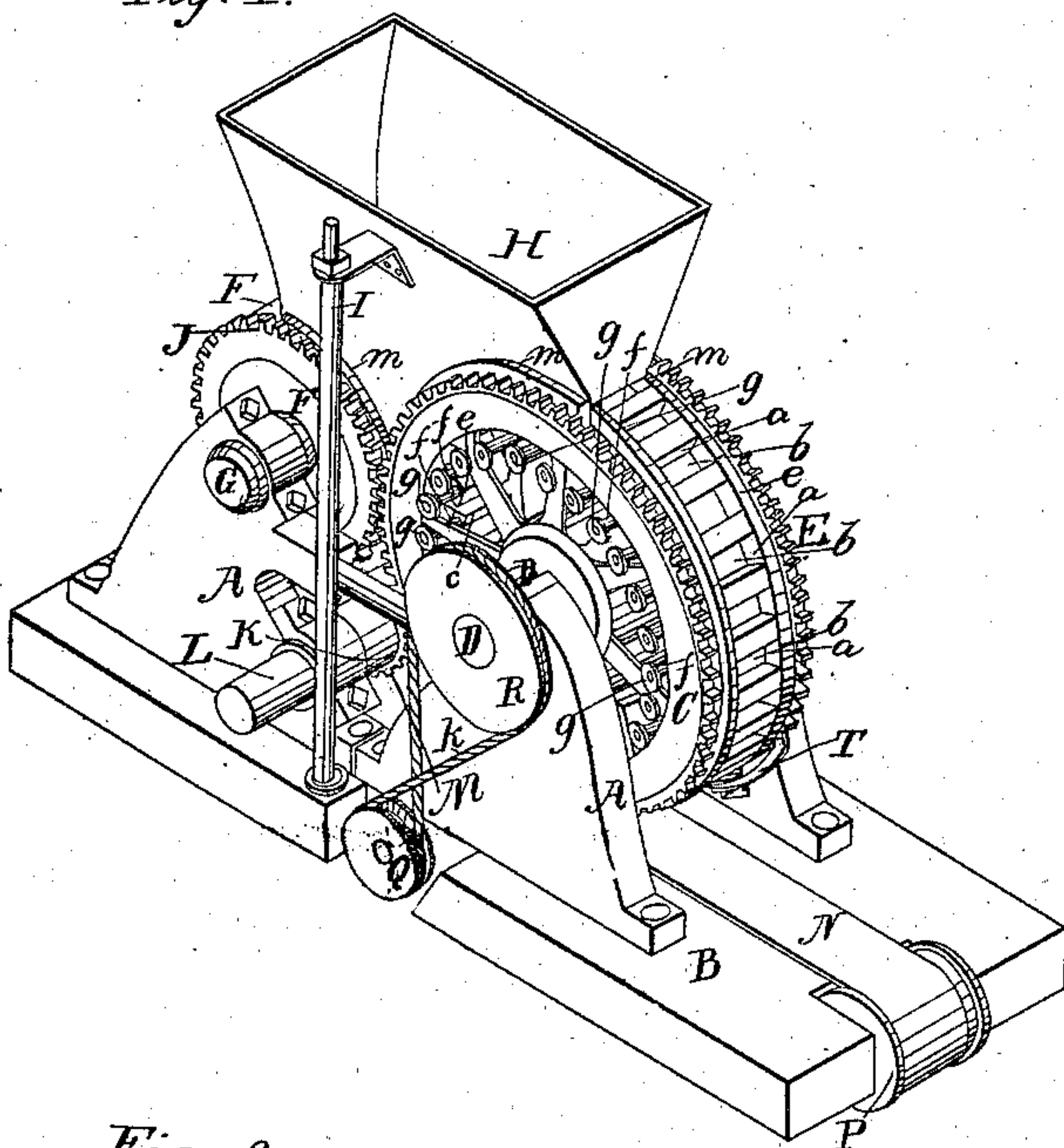


Fig: 2.

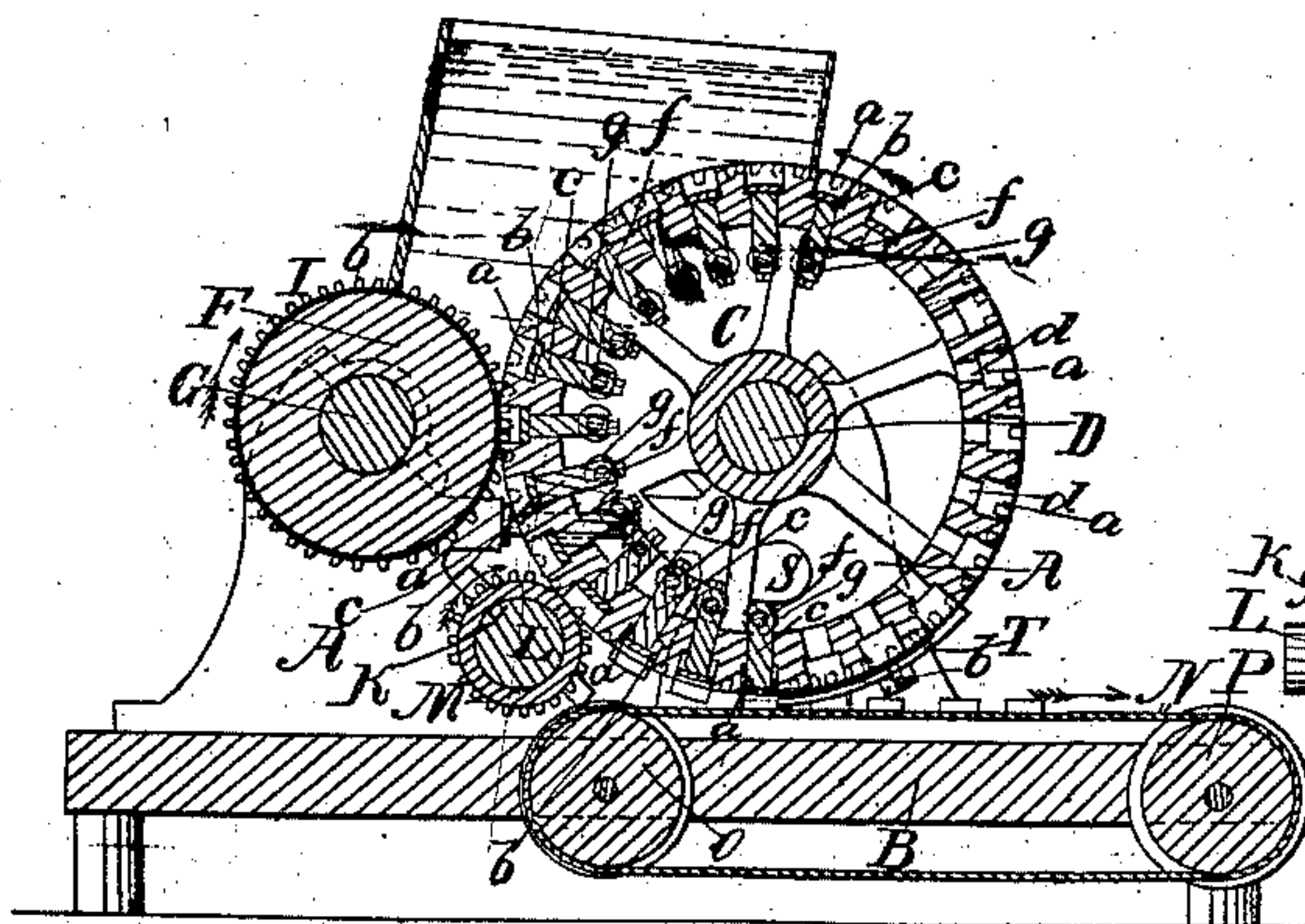


Fig: 3.

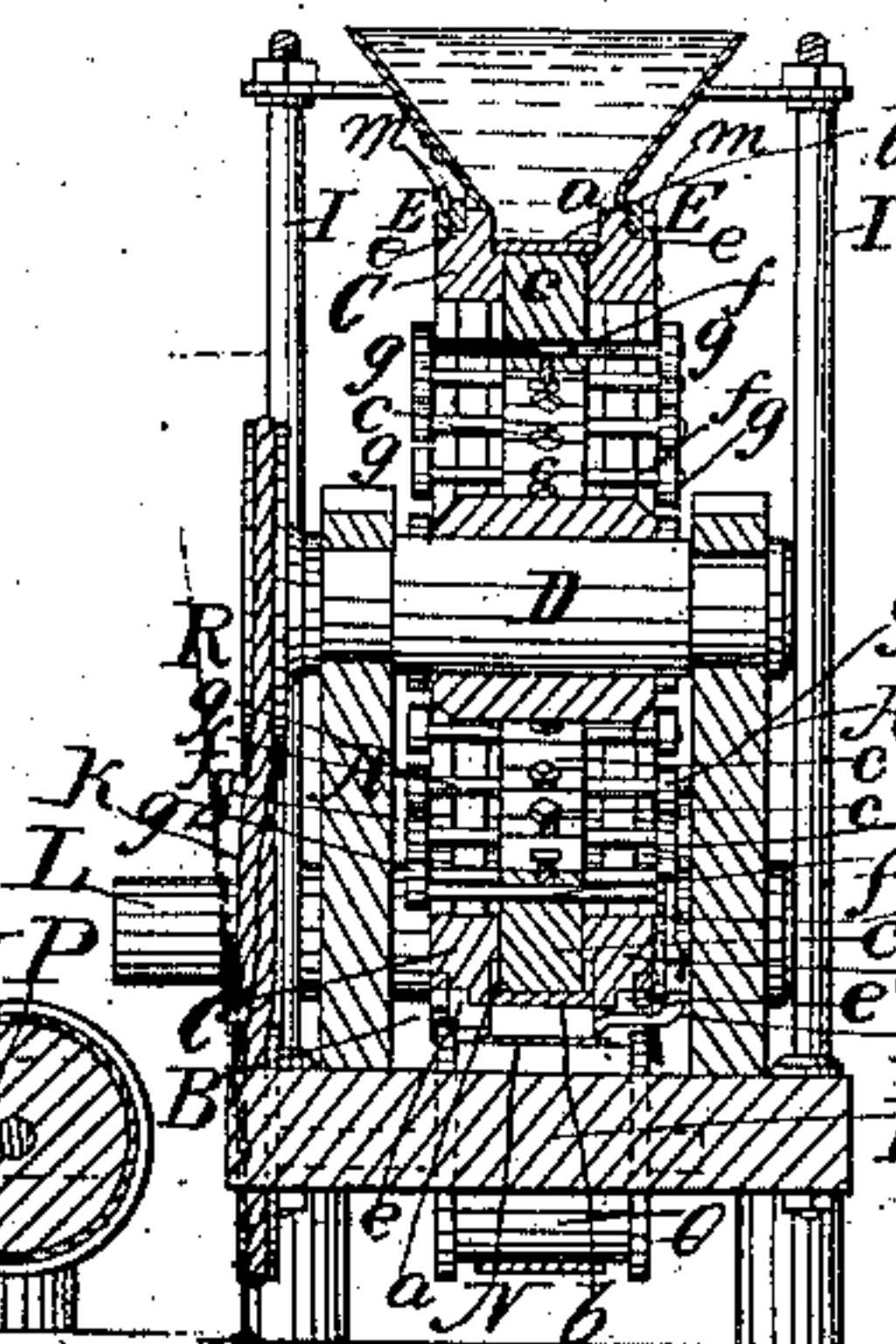


Fig: 4.

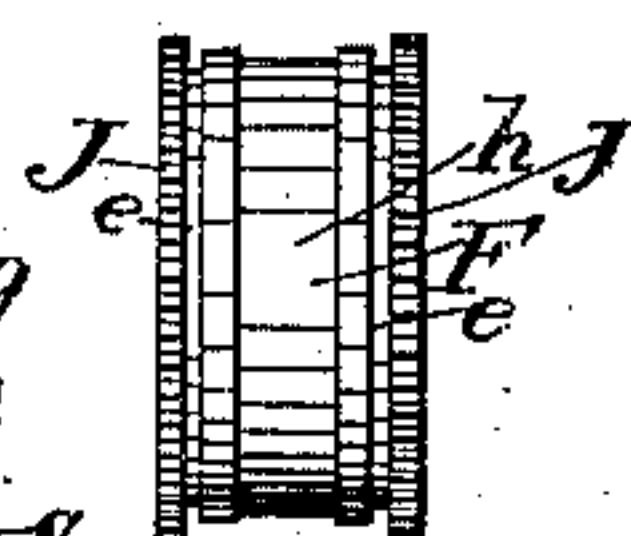
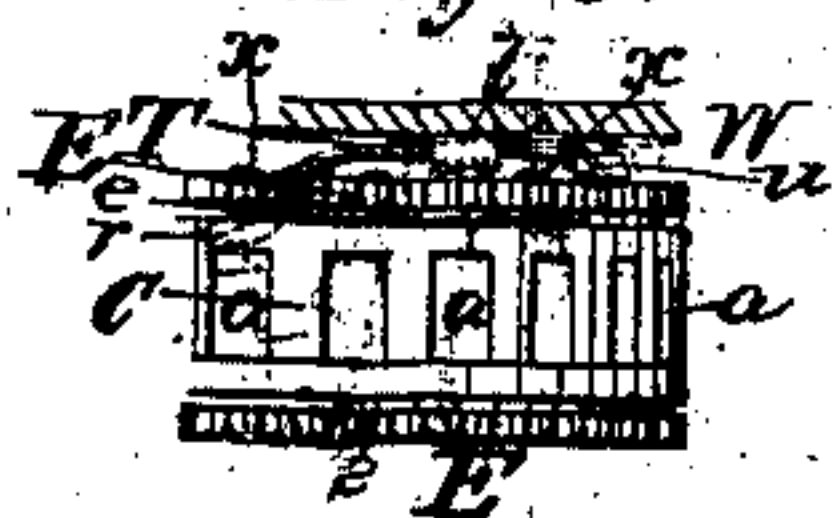


Fig: 5.



UNITED STATES PATENT OFFICE.

I. Z. A. WAGNER, OF PHILADELPHIA, PENNSYLVANIA.

BRICK-PRESS.

Specification of Letters Patent No. 8,024, dated April 8, 1851.

To all whom it may concern:

Be it known that I, I. Z. A. WAGNER, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machinery for Making Bricks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is an isometrical view. Fig. 2, is a longitudinal vertical section through the center. Fig. 3, is a transverse vertical section through the center of the mold wheel. Fig. 4, is an elevation of the first pressure roller, detached from the machine. Fig. 5, is a detached view of part of the mold wheel as seen from above, designed to show the operation of the picker which releases the brick from the mold.

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

The nature of my invention consists, in a large wheel of cast iron or other suitable metal, hung on a shaft in suitable bearings and having its periphery of cylindrical form, and having recesses therein of the required form and size of the bricks at any convenient distance apart all around it; these recesses form the molds, the bottoms of which are formed of loose plates, having shanks attached to their inner sides passing through guides in the wheel, the said shanks having spindles passing through and secured in their ends, and carrying friction rollers: two pressure rollers having their peripheries of the same width as that of the mold wheel are hung in suitable bearings so that their peripheries are in contact with that of the mold wheel; the first or larger of the pressure rollers has a slight recess all around its periphery of the width of the molds, and the second or smaller pressure roller is cylindrical: a hopper is placed above the mold wheel and first pressure roller, and as the mold wheel rotates the clay is drawn into the molds and pressed in by the first pressure roller which leaves some clay remaining above the molds, to be pressed in by the second pressure roller, which finishes the bricks; the bottom of each mold is forced outward in a manner similar to the action of a piston, by the friction rollers attached to it passing over

a stationary eccentric way until it is flush with the periphery of the wheel when the brick is picked off by a picker and falls on an endless belt or apron which carries it away.

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

A, A, represents a strong iron frame firmly secured to a bed plate or base (B).

C, Figs. 1, 2 and 3, is the mold wheel which may be of cast iron or other suitable metal, it is hung and firmly secured upon a strong shaft (D,) whose journals rest in bearings on the frame A, A; its periphery is of cylindrical form and may be faced with steel, any convenient number of molds (a), (a), (a), are formed all around it at any convenient distance apart, the length of the brick standing across the face of the wheel, the bottoms of the molds are formed of loose plates of metal (b), (b), (b), which when the molds are open or full rest at the bottoms of the recesses (a), (a), (a), and have shanks (c), (c), (c), attached to them, which pass through apertures (d), (d), (d) in the felly of the wheel below the boxes, (see Fig. 2, where some of the molds are supposed to be taken out;) each of these shanks carries a spindle (f,) parallel with the axis of the shaft D, these spindles are secured in the shanks of the mold bottoms by set screws or other convenient means, and each carries two friction rollers (g, g,) one on each end outside the wheel. On each side of the mold wheel, a toothed wheel (E,) is firmly secured, recesses (e, e,) (see Figs. 1, and 3,) being formed between the said toothed wheel and the face of the mold wheel.

F, (Figs. 1 and 2, and 4,) is the first pressure roller, which is of cast iron or other suitable metal, and may be faced with steel; it is hung and firmly secured upon a shaft (G,) whose journals rest in bearings in the frame A, A, at about the same height as the shaft D; the parts of its periphery near the edges are in contact with that part of the periphery of the mold wheel outside the ends or sides of the molds, but that part which is opposite the mold is slightly recessed (see h, Figs. 2 and 4;) it has a toothed wheel J at each side, gearing with E, E, and having similar recesses e, e, within them.

H, is the hopper which receives the clay,

it is supported by pillars I, I, and has a rim (*m*,) on each side which fits closely in the recesses *e, e, e, e*, in the mold wheel C, and pressure roller F; it is fitted in this manner to prevent the clay getting in the teeth of the wheels E, E, and J, J.

K, is the second pressure or finishing roller, which is of cast iron or other suitable metal and may be faced with steel; it is hung and firmly secured on a shaft L, having journals fitting in bearings on the lower part of the frame A, A, this shaft is the driving shaft which receives the motion, the roller K, is cylindrical along its whole length, and its periphery bears on that of the mold wheel C; it carries a toothed wheel (M) at each end gearing with E, E.

N, is an apron or endless band running below the mold wheel upon two rollers (O,) (P,) which shafts have bearings in the base B, the shaft of the roller O carries a pulley (Q,) see Figs. 1 and 2, which receives motion through a band (*k*) from a pulley (R,) on the shaft D.

S, S, (Figs. 2 and 3) are two stationary eccentric ways, consisting of bars or plates of metal having their lower edge of a curved or arched form; they are secured on each side within the frame A, A, eccentric from the axis of the shaft D; the friction rollers *g, g*, attached to the mold bottoms *b, b*, pass over the ways during the revolution of the mold wheel, and cause the bottoms of the molds to be pushed out flush with the face of the wheel.

T, (Figs. 1, 2 and 3,) is a tight lever hanging on a fixed pivot (*t*) secured to the side of the frame, one end is slightly bent at (*u*) so as to cause it to bear on the side of the mold wheel in which position it is held by a spring (*w*,) see Fig. 5, the other end (*v*,) projects under the mold wheel at the part which hangs in line vertically with the axis and is flattened about the size of the end of a brick, the face of the flat part hanging even with the edge of the mold; there are small studs or projections (*x*,) (*x*,) on the side of the mold wheel (one for each mold) and as each of these passes the end *u*, of the lever T, it throws it back at the moment that the end (*r*) is opposite a brick which has been forced out to the face of the mold, the end (*r*) being moved to the position shown in red lines in Fig. 5, pushes the brick off and causes it to fall on the apron which carries it away.

The direction in which the several parts of the machine move, is shown by arrows in Fig. 2.

The operation is as follows: The hopper is supplied with clay, which in most cases will need no previous preparation. Rotary motion being given to the driving shaft L, the several parts of the machine will be

set in motion, the mold wheel C, and first pressure roller F, rotating in opposite directions (see arrows in Fig. 2). The clay will be drawn into the molds as the wheel rotates, and as the molds pass the pressure roller F, the clay will be pressed in by the said roller throwing the bottom of the mold close back to its seat, the recess in the roller leaving a little clay standing above the face of the mold; as the wheel continues its revolution, the filled molds will come in contact with the second pressure roller K, which will press in the clay remaining above the face, and make the brick very solid, after each mold has passed the second pressure roller K, the friction rollers (*g, g*,) attached to it commence running under the eccentric ways S, S, and the shanks *c, c, c*, passing through their guides *d, d, d*, force out the bottom plates *b, b, b*, of the molds in a manner similar to the action of a piston, until as each one arrives at the position of *b'*, (see Fig. 2) the picker lever T, is actuated by one of the projections *x, x*, on the side of the mold wheel, and the brick is pushed off the plate (to which it will usually stick) by the flattened end *v*, it is received by the apron N, and carried to any convenient distance, to be removed by the person appointed for that purpose; as the empty molds continue moving around, the bottom plates will return to their places by their own weight, or will be forced in by the clay, as they enter the hopper.

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

1. The combination of the mold wheel with the grooved pressure roller and smooth pressure roller substantially as herein described, the grooved roller gauging and partially compressing the clay into the molds and forming a projecting band of clay which is subsequently compressed into the molds by the smooth pressure roller.

2. I also claim the grooves in the mold wheel in combination with the flanges of a hopper which is supported on the frame of the machine independently of the mold wheel; by which arrangement the clay is prevented from escaping laterally and working in between the teeth of the driving wheels, hence the latter can be placed near to the molds and the machine thus made more compact while at the same time the danger of leakage is diminished.

3. I likewise claim detaching the bricks from the pistons of the mold wheel by means of the tappets *x* and lever as herein set forth.

I. Z. A. WAGNER.

Witnesses:

I. H. MORSELL,
JAS. B. IMLAY.