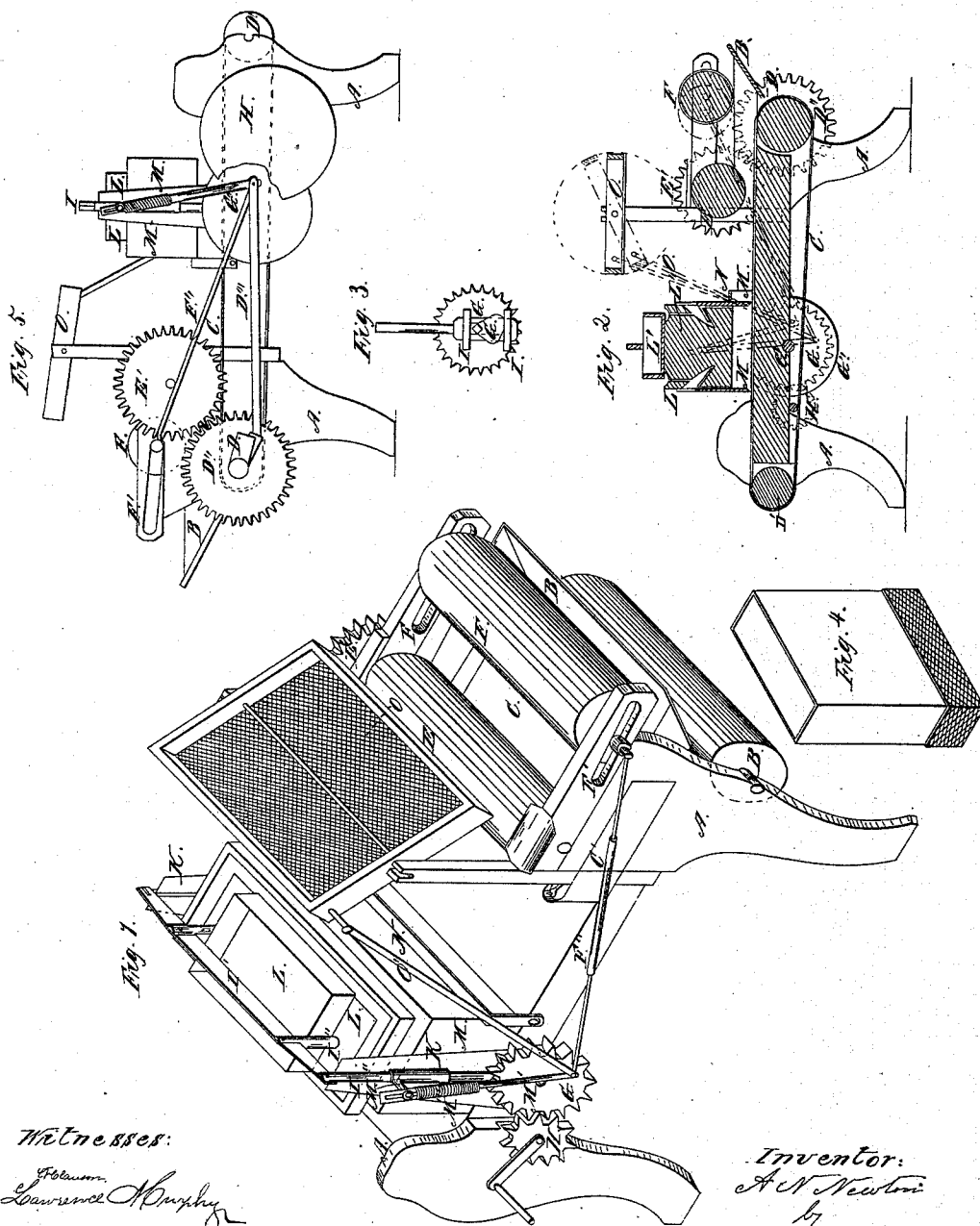


A. N. Newton,
Brick Machine.

N^o 60,231.

Patented Dec. 4, 1866.



Witnesses:
For Invention
Lawrence Murphy

Inventor:
A. N. Newton
by
D. P. Holloway del

United States Patent Office.

IMPROVED BRICK MACHINE.

A. N. NEWTON, OF RICHMOND, INDIANA.

Letters Patent No. 60,231, dated December 4, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. N. NEWTON, of Richmond, in the county of Wayne, and State of Indiana, have invented a new and useful Improvement in Machines for Making Bricks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view.

Figure 2 is a vertical section.

Figure 3, a side elevation of a cam.

Figure 4, a view of another form of plunger.

Figure 5, a side elevation.

The same letters are employed in all the different figures in the indication of the same parts.

A is the frame upon which the machine is supported. The clay, properly tempered and prepared, is introduced into the hopper, B, by which it is conducted upon the endless apron, C, made of some woven, India rubber, or other suitable material. The apron passes around the roller D and the roller D'. The roller D is driven by the pitman D³, attached to an eccentric wrist-pin on the face-wheel G''. The pitman is attached to the arm D', by which the roller is turned forward with the forward motion of the pitman, the arm being attached by pawl and ratchet to the axle of the roller, so as not to turn it as the pitman runs back. This may be accomplished by any of the familiar arrangement of parts for the purpose, as employed in saw-mills and other machinery. The roller D turns at the same time with the upper grand roller, E, with which it is connected by the spur-wheels, D'' and E'. F is a roller immediately above the roller D and lower edge of the hopper B; the journals of this roller project through slots in the side of the casing, A, at F', and are attached by eyes, within which they turn, to the rods F'', one of which is fastened to the same crank-pin as the face-wheel G'', as is the pitman D³, and the other to a similar crank-pin on the wheel G. The revolution of the wheels G and G'', which are on the same shaft, communicates a reciprocating motion to the roller F, by which it flattens the clay as it is drawn over it. Underneath the apron, immediately below the roller E, I propose to place a friction-roller parallel to the upper roller, which is not shown in the drawings. Between the roller E and the apron will be left a space equal to the thickness of a brick, so that by the action of this roller the sheet of clay may be formed to just the required thickness and pass forward in this form to the cutters. On each side of the hopper I place vertically endless aprons, C', of like material with the endless apron C, which, turning upon rollers at each end, prevent any adhesion of the clay to the sides of the hopper. The clay is carried forward to the cutters, which are thus actuated. Power is applied to the wheel H, which drives the spur G and the face-wheel G'' on the opposite side of the machine and on the same shaft G'. On the inner faces of G and G'' I place the cams G''', shaped as shown in fig. 3, so as to present an advanced point opposite the centre, by which increased pressure is applied to the plunger at a particular time, as will be explained hereafter. These cams eccentrically attached to the wheels G and G'' give a reciprocating motion with the revolution of these wheels to the vertical rods, I, with a stirrup at their lower ends passing around the shaft G'. The transverse bars, I, at each end of this stirrup, form a yoke for the eccentrics G''', which communicate motion, as mentioned, to these rods, I. The rods I are united by the bridge I', which supports the rods I'' attached to the plunger L, and which plays up and down with the motion of the rods I, between the slotted standards K. The plunger, L, is constructed as follows: Above it is a cup L' to contain the oil, or other lubricator, used in lubricating the plunger. The oil, or other lubricator, may be drawn through a faucet into a groove in the upper face of the plunger, from which it passes through several minute apertures to the packing L'', covering the sides and bottom of the plunger, which is formed of some woven or other porous material. In fig. 4 I show another form of plunger, being a case to contain the oil, with minute apertures in the bottom, or near the same, through which the lubricating substance may pass to the cloth packing on the sides and bottom. The form of this plunger may be greatly varied, preserving, however, the essential feature of a non-adhesive surface on the bottom thereof. The cutter, M, is a metallic case, surrounding the plunger on the sides, with sharpened edges below to cut the clay into the size of bricks. In the drawings I have represented a single cutter making a single brick; in the large machines the number will be increased so that, say five bricks can be cut at the same time. The cutter slides up and down between the slotted standards, K, and around the plunger. The plunger is actuated by rods, M', attached to the crank-pin

on the wheels G and G'. These rods have slots in their upper ends running longitudinally, through which pass the wrists M'', attached to the cutters and passing through the slots in the standards, K. A spring, M''', receives the strain when the cutters are descending; it has a strength sufficient to carry the cutters through the clay, but should they encounter stones or other solid substances the springs will relieve the cutters, the wrist passing in the slot without sufficient strain to break the machinery. The cutters have a downward play the width of the thickness of a brick greater than is allowed the plunger, and in ascending they rise an equal distance higher than the plunger.

The action of the two is as follows: The plunger and cutter descending together, the latter moving faster than the former cuts the brick; the plunger is, by the force of the elongated point of the cam G³, pressed firmly against the brick, forcing the clay to the full size of the cutter and consolidating the clay in the cutter; the two are raised together, raising at the same time the brick adhering to the sides of the cutter. The attendant upon the machine immediately passes a board beneath the cutter, and as it rises above the plunger the latter protrudes the brick which being received by the workman on the board is carried away. The alternating motion of the endless apron as the cutter is raised carries forward another section of the sheet of clay under the cutter and awaits its descent. O is an oscillating screen, operated by the rod O', which may be used for sifting fine sand upon the upper surface of the sheet of clay upon the apron to diminish the adhesion to the bottom of the plunger.

Having fully described the construction and operation of my machine for making bricks, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for making bricks, a reciprocating lubricated plunger acting in combination with an exterior reciprocating cutter, substantially in the manner and for the purpose set forth.

2. In combination with the plunger L and cutter M, I claim the endless apron C, stationary when the cutters are acting on the clay and moving forward when the cutters are raised, substantially as set forth.

3. I claim the actuating mechanism of the cutters L, in combination with the same, when so arranged that the pressure shall be applied to the cutters by a spring which will yield to the resistance of solid substances, substantially as set forth.

4. I claim the roller E when used in combination with the endless apron C, and so geared that it shall revolve only with the forward motion of the same, substantially as and for the purpose set forth.

5. I claim the reciprocating roller F, when operated substantially in the manner and for the purpose set forth.

6. In combination with the rod I and plunger L, I claim the actuating cam G³, when constructed substantially as and for the purpose set forth.

7. The oscillating screen O, when constructed and operated as and for the purpose set forth.

8. I claim the vertical endless apron C', running lengthways with the side of the hopper, when used in combination with the endless apron C and roller E, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

A. N. NEWTON.

Witnesses:

JAMES M. POE,
THOMAS MCGIN.