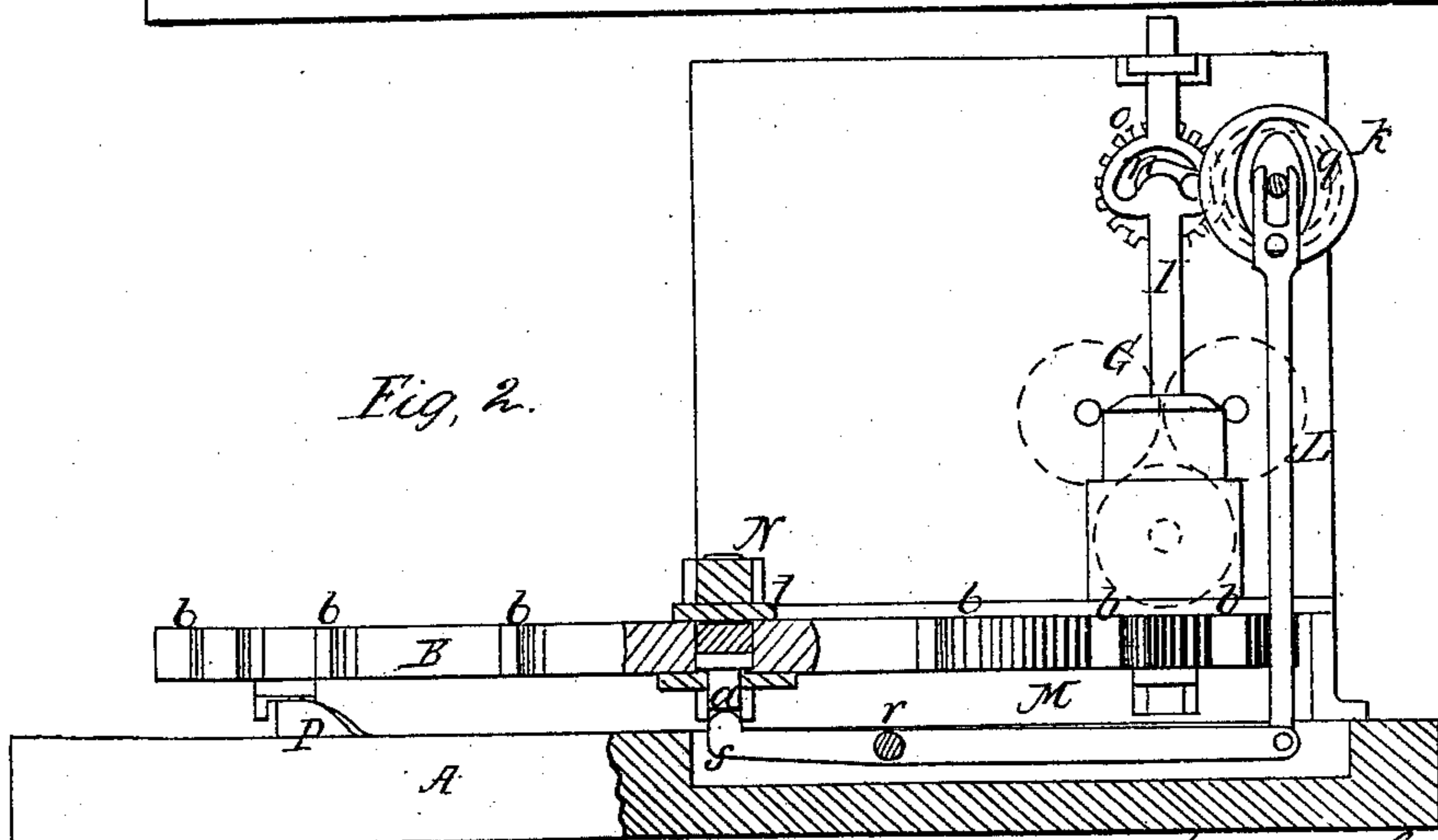
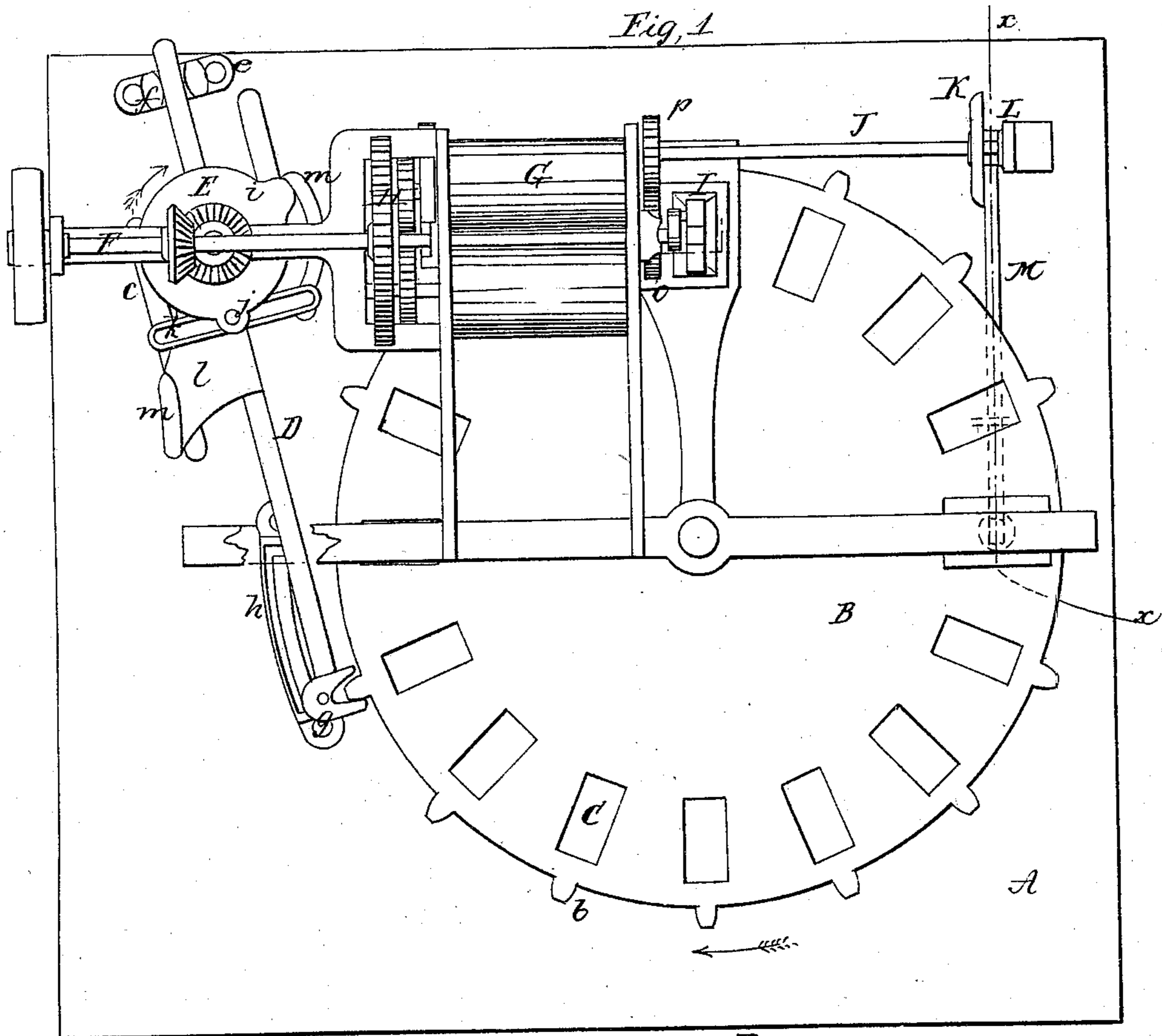


W. O. Leslie.
Brick Machine.

N^o 86,557.

Patented Feb. 2, 1869.



Witnesses
L. Hailer.
P. T. Dodge

Inventor,
W. O. Leslie
by J. J. Munn
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United States Patent Office.

WILLIAM O. LESLIE, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 86,557, dated February 2, 1869.

IMPROVED BRICK-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM O. LESLIE, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Brick-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to brick-machines, and consists in certain improvements on the machine for which Letters Patent, No. 79,362, and dated June 30, 1868, were granted to me. These improvements are for the purpose of giving an intermittent motion to the horizontally-rotating mould-wheel, and also for giving a second pressure to the brick, by means of certain novel mechanical devices.

In the drawings—

Figure 1 is a top plan view, and

Figure 2 is a vertical section on the line $x-x$ of fig. 1.

In constructing my machine, I mount in a strong frame, A, a horizontally-rotating mould-wheel, B, having a series of moulds, C, and each provided with a follower, a , as shown in figs. 1 and 2.

On the periphery of the mould-wheel B, I place a series of cogs, b , so that there may be a cog immediately opposite each mould, as shown in fig. 1, to engage with an arm, D, arranged to operate in a peculiar manner for that purpose. It is made long, as shown in fig. 1, with its rear end running through guides f , with curved faces, and fastened on top of an upright, e , and with its front end provided with a head, g , shaped as shown in fig. 1, so as to engage easily with the cogs b , and having a pin on its under side which moves easily about the oblong groove h , for the purpose of guiding the movement of its front end, which groove h is shaped as shown in the same figure.

Over the arm D, and nearest to its rear end, I mount, in the frame of the machine, a vertical shaft, i , and to this shaft, immediately above the arm D, I attach a cam, E, provided with a pin, j , which enters and plays, with a reciprocating motion, in a groove, k , set at right angles to the length of the arm D, and being in and flush with the upper surface of two flat arms, l , attached on each side of the arm D, and arranged to slide on uprights c , and having vertical projections m for the cam E to bear against in rotating, as shown in fig. 1.

The vertical shaft i has attached to it a bevel-gear, connecting it with a corresponding gear on the horizontal shaft F, mounted in the frame, and provided with a driving-wheel, as shown in fig. 1.

By the use of these mechanical devices, thus constructed and arranged, I give an intermittent rotatory motion to the mould-wheel B, as will be seen.

When the arm D has engaged with a cog, b , the parts are in the position as shown in fig. 1.

As the driving-wheel, through the bevel-gear on the shafts F and i , continues the motion of the cam E, in the direction of the red arrow, the movement of the pin in the slot k draws the arm D back, carrying forward the mould-wheel B till the pin in the head of the front end of the arm D reaches the rear end of the groove h , when the cam E strikes against the outer vertical projection m , throws the front end of the arm D back, disengaging it from the cog on the wheel B, and leaving the wheel stationary, after having been moved just far enough for another cog to occupy the same place as the one just released did when the movement commenced. As the cam E, however, continues its motion, the pin in the groove k now carries the arm D forward till the pin in its head reaches the front end of the groove h , when the cam E bears against the inner vertical projection m , which throws the front end of the arm D forward, when it engages a cog, b , as before, and another movement is given to the wheel B.

While this is being done, the clay is carried by the feed-rolls G and a spiral screw, not shown, but fully explained in my former patent, already mentioned, to the moulds C, in the wheel B.

The feed-rolls and spiral screw are operated by the shaft F and gearing H, all mounted in the frame, as shown in fig. 1.

The movements of the arm D are so timed as to leave the wheel B stationary every time a mould, C, filled with clay, comes immediately under the plunger I, which is then moved vertically downward by a pin, attached to a small crank on the end of the shaft F, operating in a curved slot or groove, n , in the shank of the plunger I, as shown in figs. 1 and 2.

The plunger I ceases pressing, and is elevated by the same means and at the same time that the wheel B moves forward, and so at each operation.

At the same time that the movements of the mould-wheel B and plunger I are arranged so as to give one pressure to the brick, by the use of other mechanical devices, a second pressure is being given to the brick that have received a first pressure, at the same time, and in this way.

A gear-wheel, o , on the horizontal shaft F, is arranged to gear into a wheel, p , on the horizontal shaft J, mounted in the frame, as shown in fig. 1.

Toward the outer end of the shaft J, and a short distance from its bearings, I attach a disk, K, having its face provided with an elliptical-shaped groove, q , as shown in fig. 2.

Between the disk K and the bearing of the shaft J, I place a vertical rod, L, having its upper end slotted so as to move vertically on the shaft J, and also provided with a pin to travel in the groove q .

The lower end of the rod L, I hinge to a lever, M, pivoted at r , in the base of the frame A, as shown in fig. 2.

The loose end *s* is arranged so that every time the wheel B becomes stationary, one of the moulds C will be immediately above it, with the follower *a* between and immediately under a cross-beam, N, with a plate, *t*, covering the mould, the moulds C being so arranged in the wheel B, that one of them will be immediately under the plunger I, and one immediately over the outer end of the lever M, the brick in them being ready to be pressed simultaneously, one from above and the other from below. The latter is accomplished by the lever M, the hinged end of which is forced down by the rod L, as shown in fig. 2, and its outer end, *s*, is pressed against the follower *a* at the same time that the plunger I descends against the brick in the mould, then directly under it.

The wheel B, in its rotation, carries the brick thus pressed in the moulds till the followers *a* are raised by the inclined plane P, when the brick can be removed from the wheel.

By this construction and arrangement of the novel mechanical devices, as herein described, I am able to manufacture brick with a smooth upper and lower surface, by giving them a top and bottom pressure, which

double pressure also makes them of a more uniform density throughout.

Having thus described my invention,

What I claim, is—

1. The combination of devices, constructed and arranged substantially as herein described, for giving an intermittent rotating motion to the horizontal mould-wheel B, as and for the purpose herein set forth.

2. The cross-beam N, or its equivalent, in combination with the follower *a* and lever M, with the mechanical devices for operating it, all constructed and arranged to operate substantially as described, and for the purpose set forth.

3. The construction and arrangement of the mechanical devices, substantially as herein described, by which a top pressure is given to one brick by the plunger I, and a bottom pressure to another by the lever M, simultaneously, at different points in the machine, as set forth.

WM. O. LESLIE.

Witnesses:

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WILLIAM T. THOMPSON.