

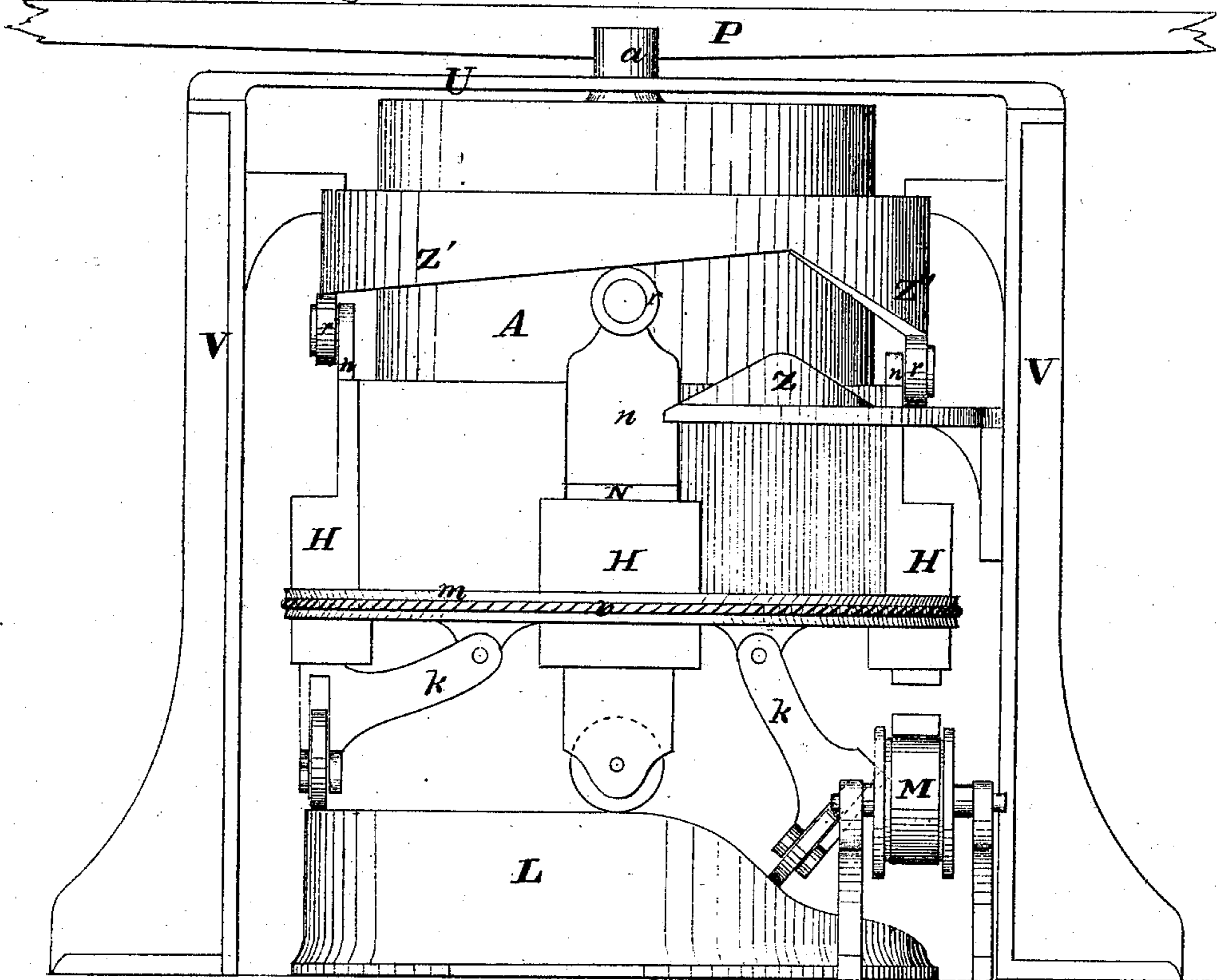
*T. & W. A. Ellis,* 3. Sheets, Sheet 1.

*Brick Machine.*

*No. 99658.*

*Patented Feb. 8. 1870.*

**Fig. 1**



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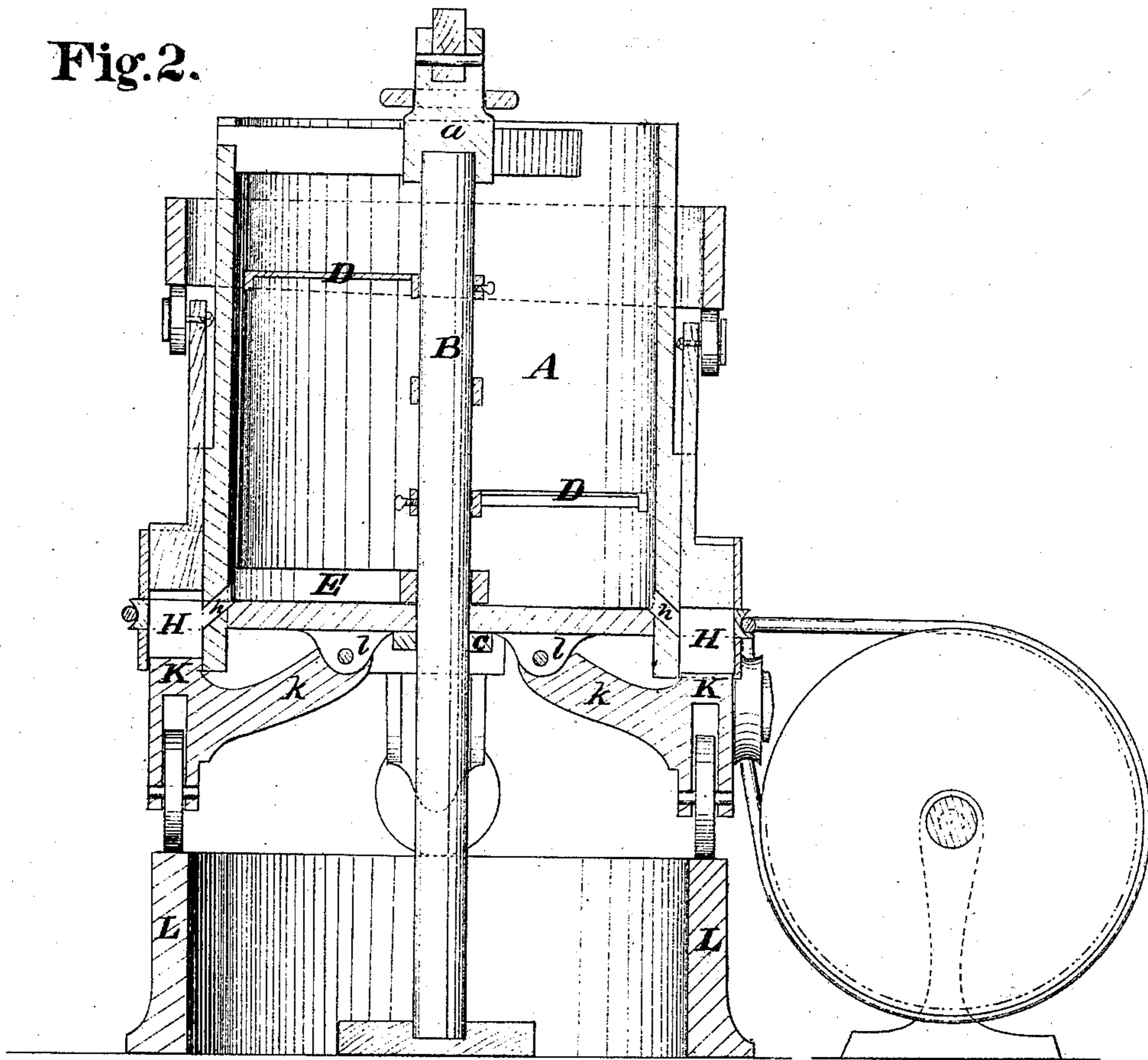
*3. Sheets. Sheet. 2.*

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**Fig. 2.**



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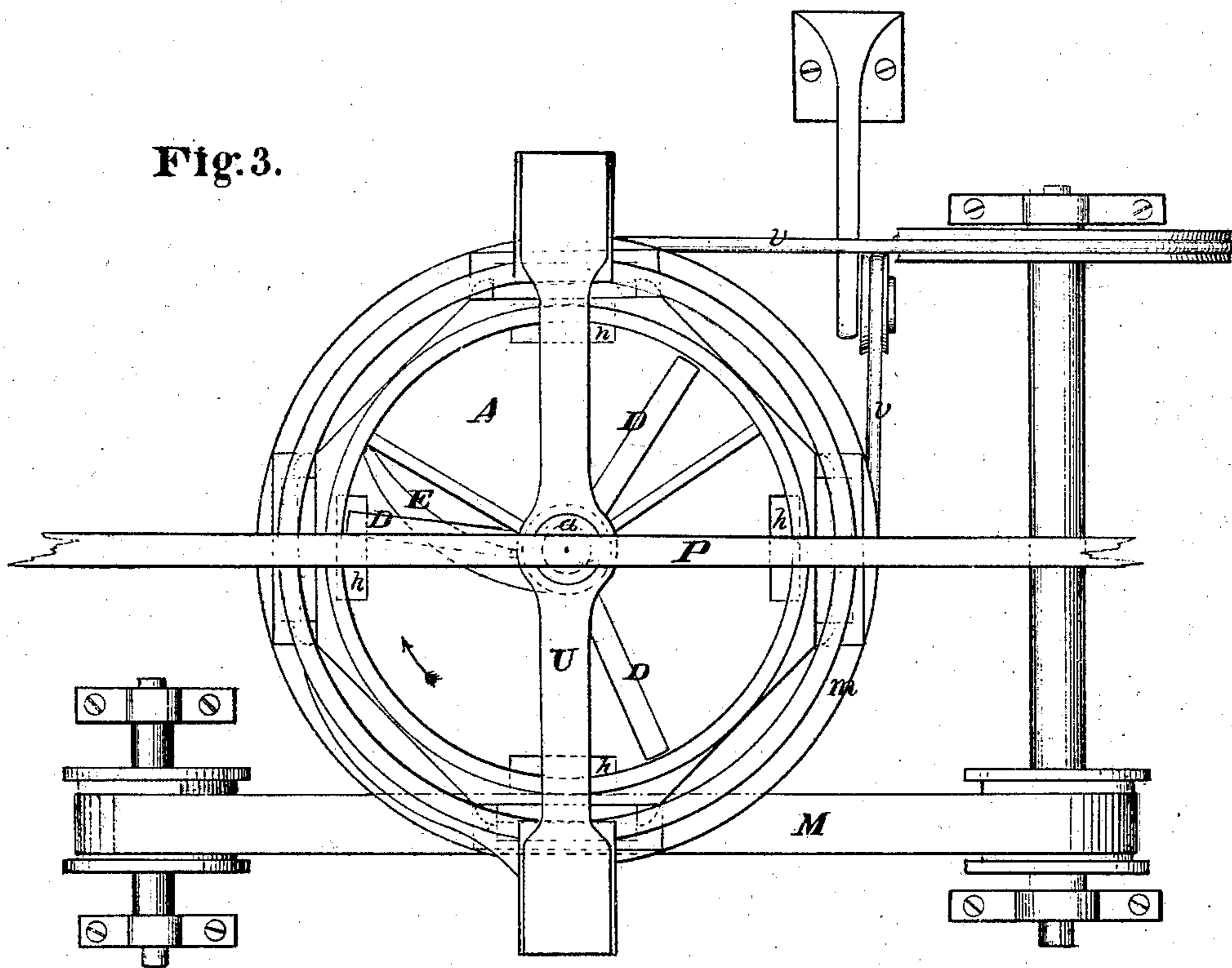
*3, Sheets, Sheet, 3.*

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**Fig. 3.**



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# United States Patent Office.

THOMAS ELLIS AND WILLIAM A. ELLIS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 99,658, dated February 8, 1870.

## 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 we, THOMAS ELLIS and WILLIAM A. ELLIS, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented a new and valuable Improvement in Revolving Brick-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1, of the drawings, is a side view of our invention.

Figure 2 is a central vertical section of the same.

Figure 3 is a top view.

Our invention relates to brick-machines, and consists, mainly, in attaching to a revolving hopper, a number of moulds, in such a manner that the clay from the hopper is thrown into the moulds, and the bricks pressed and discharged continuously, the number being unlimited, so long as the revolving reservoir is supplied.

The letter A, of the drawings, designates the revolving hopper, usually made of cast-iron, and supported by the gudgeon *a*, provided with a socket to fit the top of the upright shaft B, around which it revolves.

The shaft has also a bearing in the bottom of the hopper, which rests on a collar, *c*, secured to the shaft.

Within the hopper are the knives D D, whereby the clay is stirred and mixed. These knives are secured to collars keyed on the shaft B, and are therefore stationary.

Sometimes, I design to give the knives a motion of rotation in a contrary direction to the movement of the hopper.

E designates a metal toe, which is keyed to the shaft, at the bottom of the hopper, and extends out, in a curved direction, until its extremity nearly touches the inner cylindrical surface thereof.

The object of this curved toe is to force the clay through the channels *h h*, into the interior of the moulds H H. The sides of these moulds are cast with the hopper, or else securely fastened thereto.

The bottoms K K, formed of brass, or other suitable metal, are mounted on wheels, and provided with arms *k k*, whereby they are pivoted to the legs *l l*, on the bottom of the hopper.

A circular track, L, is arranged for these wheels.

This track is depressed or inclined on the discharging-side of the machine, so that the bottoms of the moulds will fall down just before they arrive in position for discharging the bricks, over the endless belt M, or other receptacle.

The mould H, after the bottom K has fallen out, is discharged of its contents by the action of the plunger N, which also forms the top of the mould.

A short axle is fixed to the top of the perpendicular slide *n* of each plunger, and on this axle anti-friction roller *r* is placed.

These rollers are operated by means of the cams *z z'*, secured to the uprights V V of the machine.

The journal of the gudgeon *a* is arranged to have a bearing in the transverse bar U, which extends over the open top of the hopper, and is secured to the tops of the standards V V.

Power may be applied by means of gearing, or, as shown in the drawing, by means of the lever P, attached to the gudgeon of the revolving hopper.

A circular ledge, *m*, is cast about the lower portion of the revolving hopper, and is arranged with a groove in its periphery, thus constituting a pulley, over which passes a cord or chain, *v*, whereby motion is communicated to an endless belt, *y*.

The operation of our machine is as follows:

The mould, having been discharged of its load, passes around with the hopper. At the same time, its bottom, K, is elevated into place by the rise of the track L, and its top, N, raised by the passage of its roller, *r*, over the lower cam *z*. The mould is now ready to receive the clay, which, as the hopper revolves, is pressed into it by the curved toe E. The upper cam *z'* now gradually inclines downward, and, as the hopper turns, presses upon the roller *r*, forcing the plunger down into the mould, and compresses the brick therein, forcing the moisture out of the clay into the pores of the plunger, which is formed of wood, and arranged so that the fibres thereof are cut across, to form the top of the mould.

The pressure is maintained upon the brick until the bottom of the mould falls, on arriving at the descent in its track. The brick does not fall out, being held up by the sides of its mould, until it arrives over the endless belt, when it is pushed out by the plunger, in passing under the cam *z''*.

On account of the construction of the wooden plunger, already described, the brick will not adhere thereto, but, when liberated from the sides of the mould, is discharged at once from the face of the plunger by the expansion of the air in its pores.

What we claim as our invention, and desire to secure by Letters Patent, is—

The brick-machine, herein described, having the revolving hopper A, arranged to feed the moulds H H, attached thereto, as specified.

In testimony that we claim the above, we have hereunto subscribed our names, in the presence of two witnesses.

THOMAS ELLIS.  
WM. A. ELLIS.

Witnesses:

CHARLES SENIX,  
JOHN C. BROUS.