

D. MANLEY.
BRICK-MACHINE.

No. 173,553.

Patented Feb. 15, 1876.

Fig. 1 y

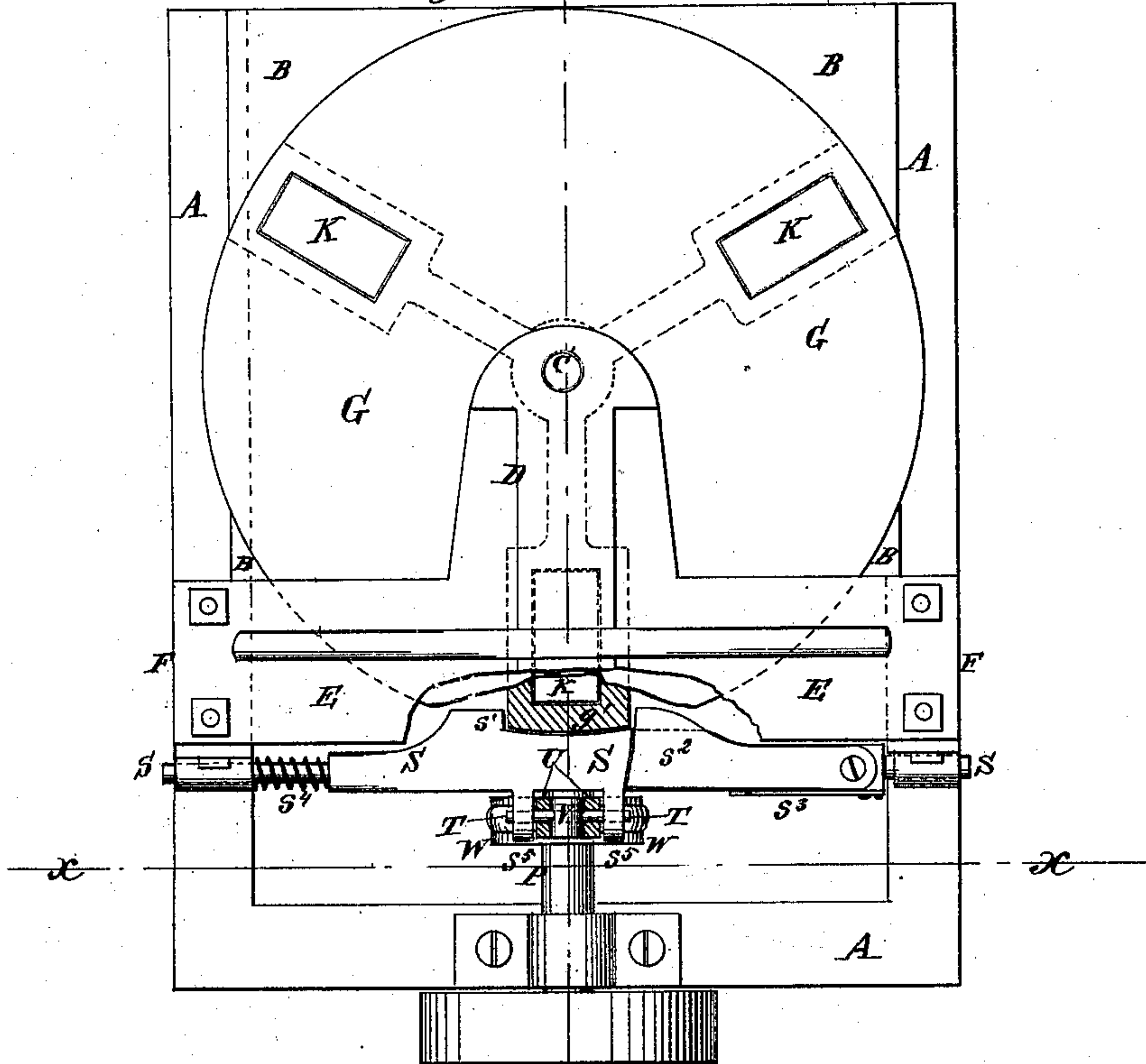
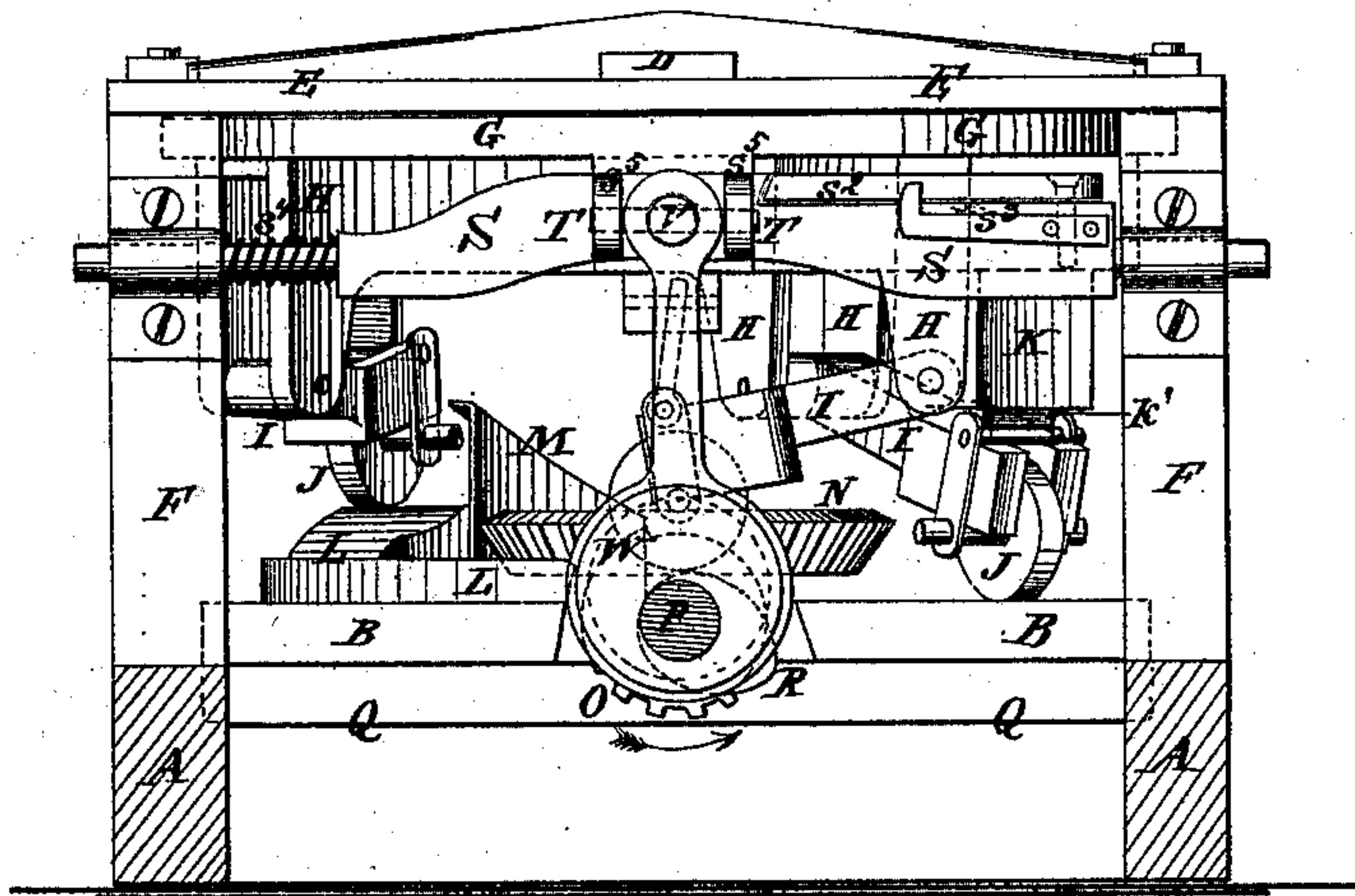


Fig. 2 y



WITNESSES:

A. W. Almquist
Alex F. Roberts

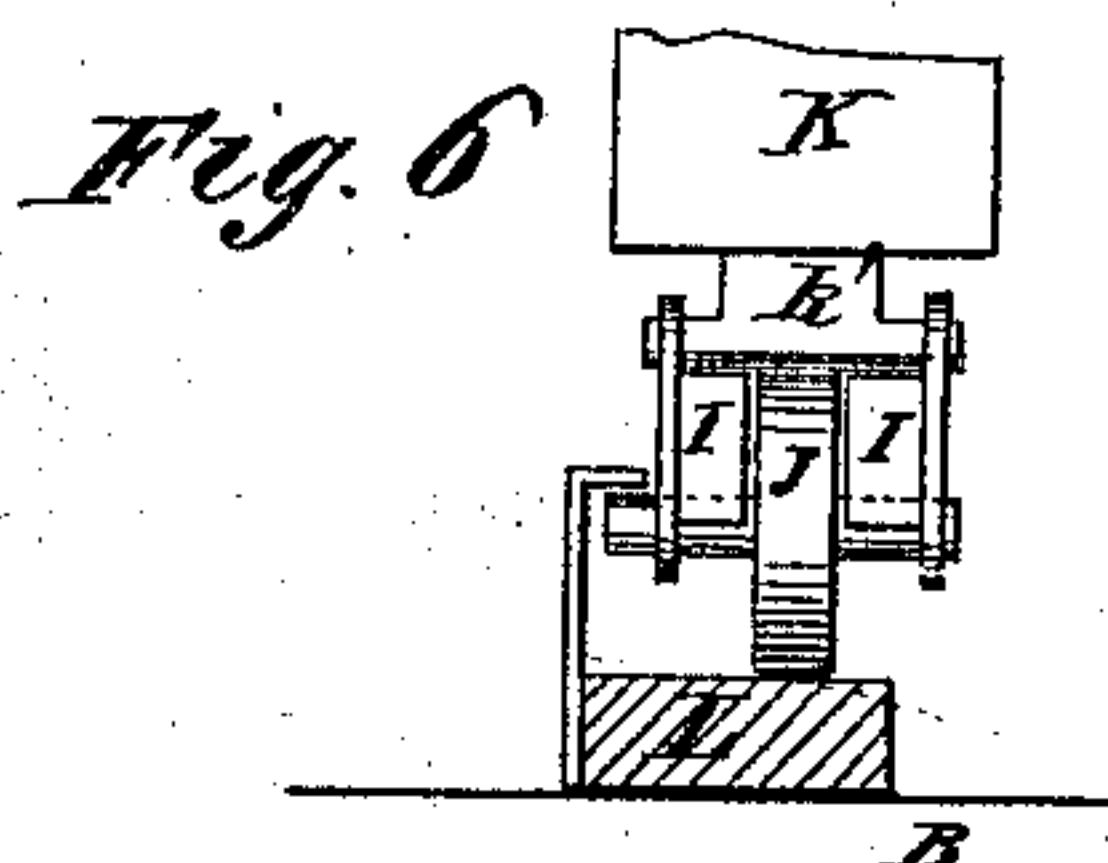
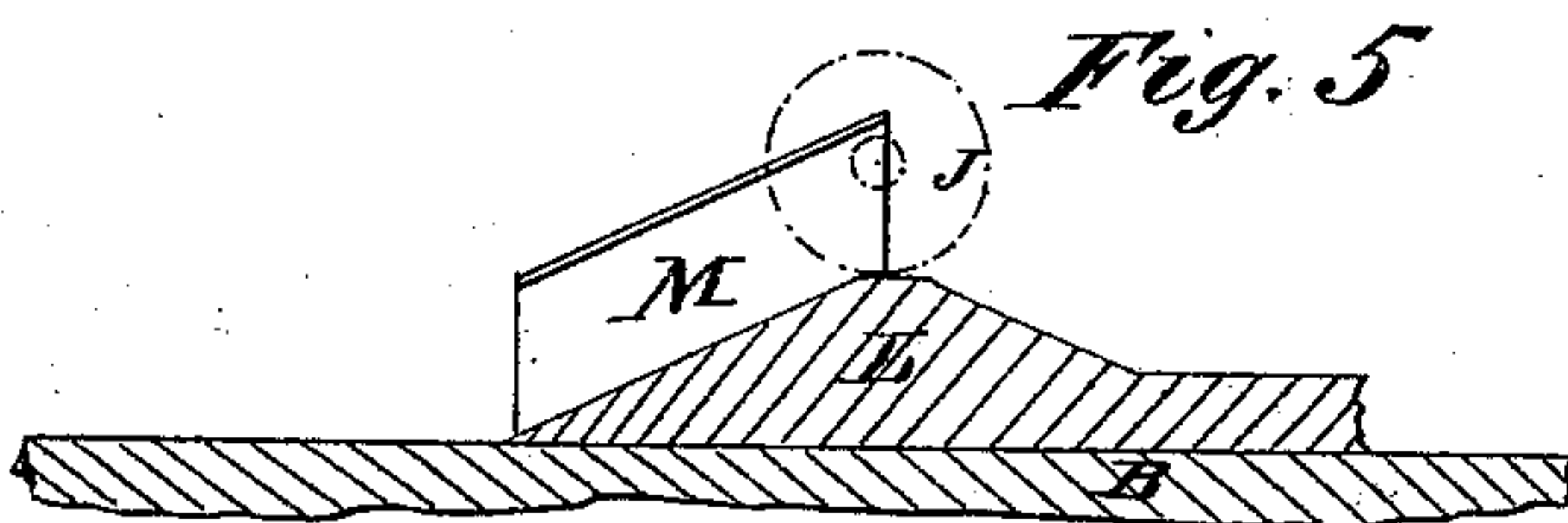
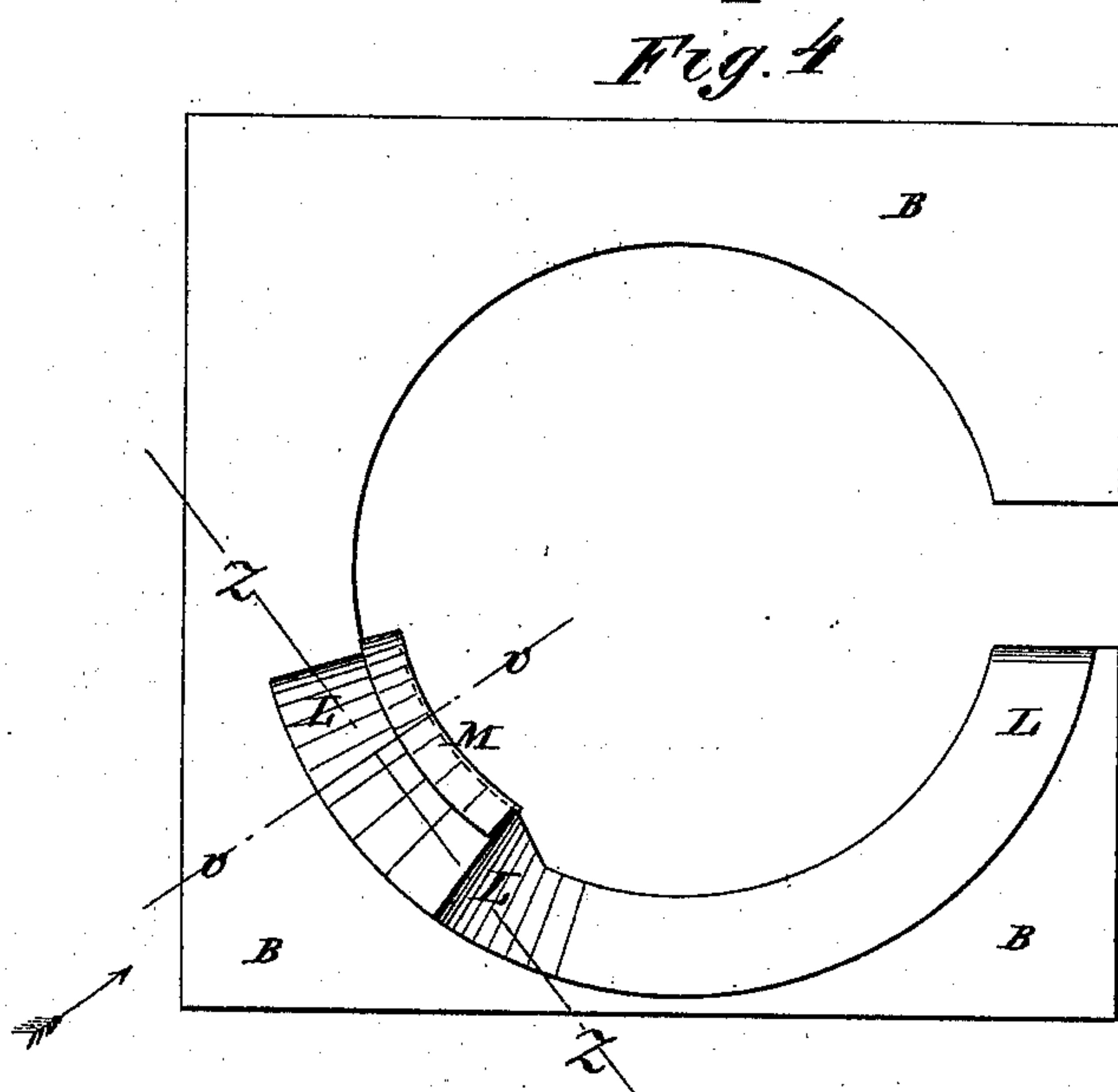
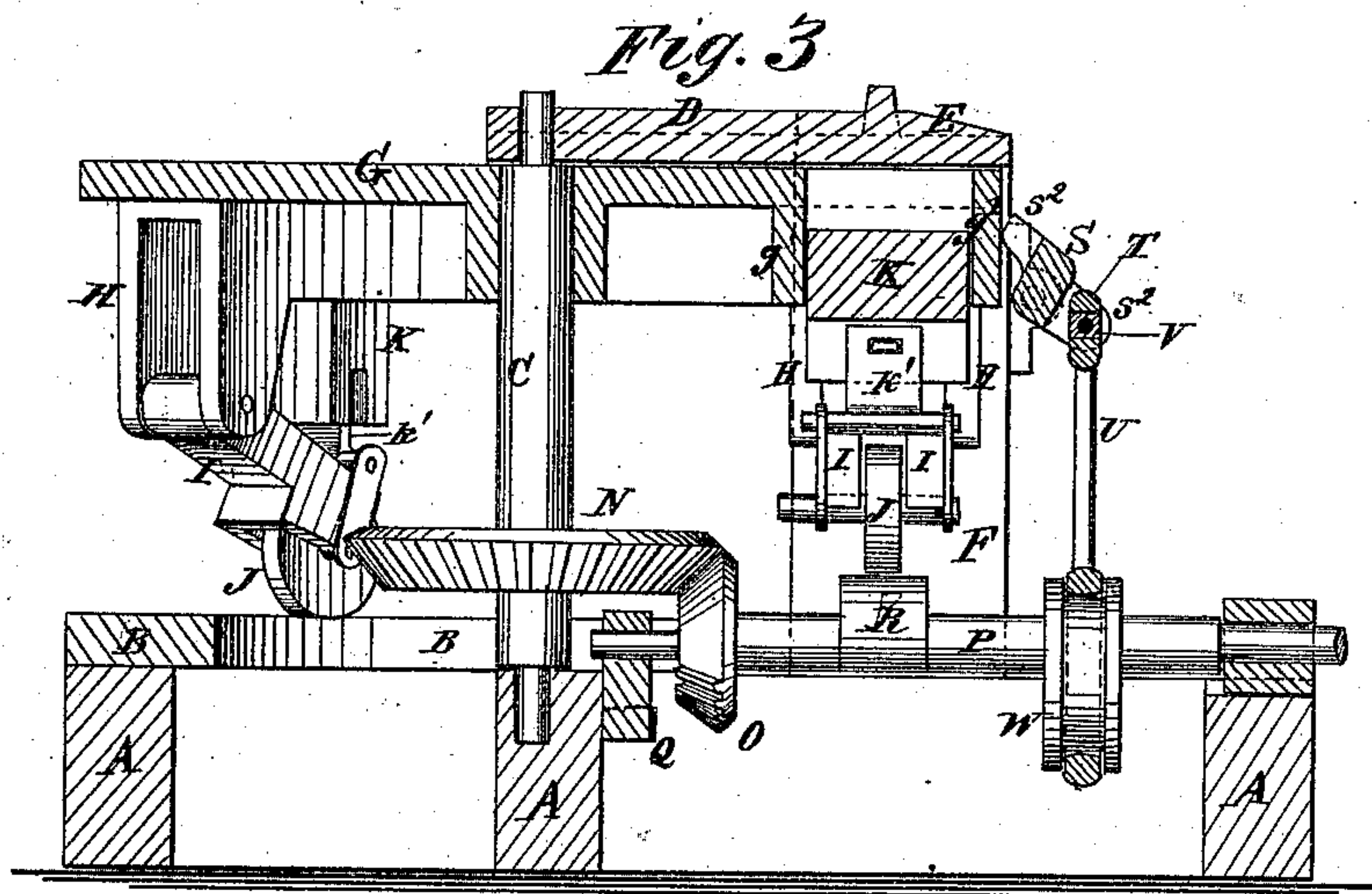
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WITNESSES:

A. W. Almqvist
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INVENTOR:

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UNITED STATES PATENT OFFICE.

DAVID MANLEY, OF FRANKLIN, PENNSYLVANIA.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **173,553**, dated February 15, 1876; application filed November 13, 1875.

To all whom it may concern:

Be it known that I, DAVID MANLEY, of Franklin, in the county of Venango and State of Pennsylvania, have invented a new and useful Improvement in Brick-Machine, of which the following is a specification:

Figure 1, Sheet 1, is a top view of my improved machine, parts being broken away to show the construction. Fig. 2, Sheet 1, is a rear view of the same, partly in section, through the line *x x*, Fig. 1. Fig. 3, Sheet 2, is a vertical section of the same, taken through the line *y y*, Fig. 1. Fig. 4, Sheet 2, is a detail top view of the base-platform. Fig. 5, Sheet 2, is a detail section of the same, taken through the line *z z*, Fig. 4. Fig. 6, Sheet 2, is a detail front view of one of the wheels and plungers.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved machine for molding and pressing brick, which shall be so constructed that the three operations of filling the mold, pressing the brick, and removing the pressed brick may all be performed at the same time, and which shall be simple in construction, convenient in use, effective in operation, and not liable to get out of order.

The invention consists in the combination of the lock-bar, provided with the shoulder, the spring-latch, and the spiral spring, with the molds of the revolving platform; in the combination of the connecting-rod and the eccentric with the lock-bar and the driving-shaft, and in the combination of the pin and the cylindrical block with the slotted and perforated upper end of the connecting-rod, and with the lugs formed upon the lock-bar, as hereinafter fully described.

A is the base-frame of the machine, to the forward part of which is secured the base-platform B. The middle part of the platform B is cut away to give space for the driving gearing, and its rear side is slotted for the passage of the driving-shaft. In a step or socket in the cross-bar of the frame A revolves the lower end of the vertical shaft C, the upper end of which revolves in a bearing in the end of an arm, D, rigidly attached to or formed upon a cross-bar, E. The cross-bar E is made strong and rigid, and its ends rest upon the upper

ends of the standards F, the lower ends of which are secured to the base-frame A. The connection between the base-frame A, standards F, and cross-beam E is strengthened by long bolts, which pass through said base-frame, standards, and cross-beam, to hold the cross-beam E against the pressure when pressing the bricks. To the upper end of the shaft C is attached a circular disk-plate or platform, G, in such a position as to pass in beneath and be close to the under side of the arm D and cross-beam E. In the plate G, near its outer edge, at equal distances apart, and with their longer axes radial to the plate G, are formed three holes of the exact size of a brick, and which are the mouths of the molds *g'*, formed upon or securely attached to the under side of the said plate G. To the under side of the plate or platform G, in the rear of the molds *g'*, are attached or upon it is formed brackets H, to which are pivoted the rear ends of the bars or blocks I. To the lower part of the forward end of the bars or blocks I are pivoted wheels J, which roll along the base-platform B. To the upper part of the forward ends of the bars or block I are pivoted the lower ends of the bars or plates *k'*, the upper ends of which enter slots in the lower ends of the plungers K, and are pivoted to said plungers. The plungers K fit into the molds *g'*, and by their upward movement in said molds press the bricks against the lower side of the cross-beam E, as indicated in Fig. 3. The plunger K is held up after pressing the brick by the way L, along which the wheel J rolls. The way is attached to the platform B, extends for the third of a circle, and terminates in a double incline, which raises the wheel J, raising the plunger K, and forcing the brick out of the mold, and then allows the wheel J to descend to the platform B, drawing the plunger K downward, and leaving the mold open to receive the mud. To the inner side of the double incline of the way L is attached a plate, M, the upper edge of which is inclined, and has an outwardly-projecting flange formed upon it to receive a pin attached to the bar I, and which may be the end of the axle of the wheel J, to draw the wheel J downward, and withdraw the plunger K from the mold, should the adhesiveness of the clay prevent

it from being drawn down by its own weight. To the lower part of the vertical shaft C is attached a large bevel-gear wheel, N, into the teeth of which mesh the teeth of the bevel-gear wheel O, attached to the inner end of the horizontal shaft P, to the outer part of which the driving-power is applied. The inner journal of the shaft P revolves in a bearing upon a spring-bar, Q, which has sufficient strength to support the shaft P under ordinary circumstances; but should too much mud be put into the mold g' , the spring-bar Q will yield, and thus prevent the machine from being broken.

A portion of the teeth of the gear-wheel O are cut away, so as to allow the shaft P to turn through a part of its revolution without turning the gear-wheel N, but enough teeth are left to turn the gear-wheel N through one-third of a revolution at each revolution of the shaft P.

Upon the shaft P, directly in the path of the wheels J, is formed a cam, R, in such a position with respect to the toothless portion of the gear-wheel O that a wheel, J, shall pass upon the shaft P, the cam R shall begin to rise beneath the said wheel J, and the gear-wheel N shall be released from the teeth of the gear-wheel O at the same time, so that the platform G may stand still while the plunger K is forced up by the cam R to compress the brick.

As the cam R begins to descend the teeth of the gear-wheel N mesh into the teeth of the gear-wheel O, the wheel J passes from the cam R to the raised track L, and the platform G is carried forward through the third of a revolution. As each mold g' comes into position for the brick to be pressed, the preceding mold comes over the double incline of the track L, and the pressed brick is removed, and the other or third mold comes into position to receive the mud, so that the three operations of pressing a brick, removing a pressed brick, and filling a mold, are performed each time the platform G stops. The platform G is stopped each time a mold, g' , comes into position for a brick to be pressed by the outer end of the said mold striking against a shoulder, s^1 , formed upon the inner side of the bar S, and the said platform is kept from rebounding by a latch, s^2 , pivoted to the upper side of the bar S, held forward by a spring, s^3 , and pushed back by the end of the advancing mold. The journals of the bar S work in bearings attached to the uprights F, and are made long, so that the said bar S may have a short longitudinal movement in said

bearings. Upon the inner part of the forward journal of the bar S is placed a spiral spring, s^4 , so that, as a mold, g' , strikes the shoulder s^1 of the bar S, the spring s^4 may yield to overcome the momentum of the platform G, and prevent the machine from being jarred or injured by the blow. The spring s^4 also brings the platform G into such a position that the plunger may be directly over the axis of the cam while being operated, so that the segmental bevel-gear wheel will strike precisely the same place upon the three equal parts or sections of the gear-wheel. The teeth of the gear-wheel should be a multiple of three, so that the platform G may be turned exactly one-third of a revolution each time and the teeth of the segmental gear-wheel may engage with and release the teeth of the gear-wheel always at the same three points.

Upon the outer side of the middle part of the bar S are formed two lugs, s^5 , through which passes a pin, T, which also passes through short slots in the upper end of the connecting-bar U and through a short cylindrical block, V, inserted in a hole in the upper end of the said bar U. This connection allows the bar S to rock upon the upper end of the bar U and the lower end of the said bar U to have a lateral movement. The lower end of the bar U is connected with an eccentric, W, placed upon the driving-shaft P, and so arranged, in connection with the cam R, as to rock the bar S and withdraw its shoulders s^1 from the mold g' , when the cam R begins to descend and the platform G is ready to move forward.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the lock-bar S, provided with the shoulder s^1 , the spring-latch s^2 , s^3 , and the spiral spring s^4 , with the molds g' of the revolving platform G, substantially as herein shown and described.

2. The combination of the connecting-rod U and the eccentric W with the lock-bar S and the driving-shaft P, substantially as herein shown and described.

3. The combination of the pin T and the cylindrical block V with the slotted and perforated upper end of the connecting-rod U, and with the lugs s^5 formed upon the lock-bar S, substantially as herein shown and described.

DAVID MANLEY.

Witnesses:

MOSES J. COHNAN,
CHRISTOPHER W. SMITH.