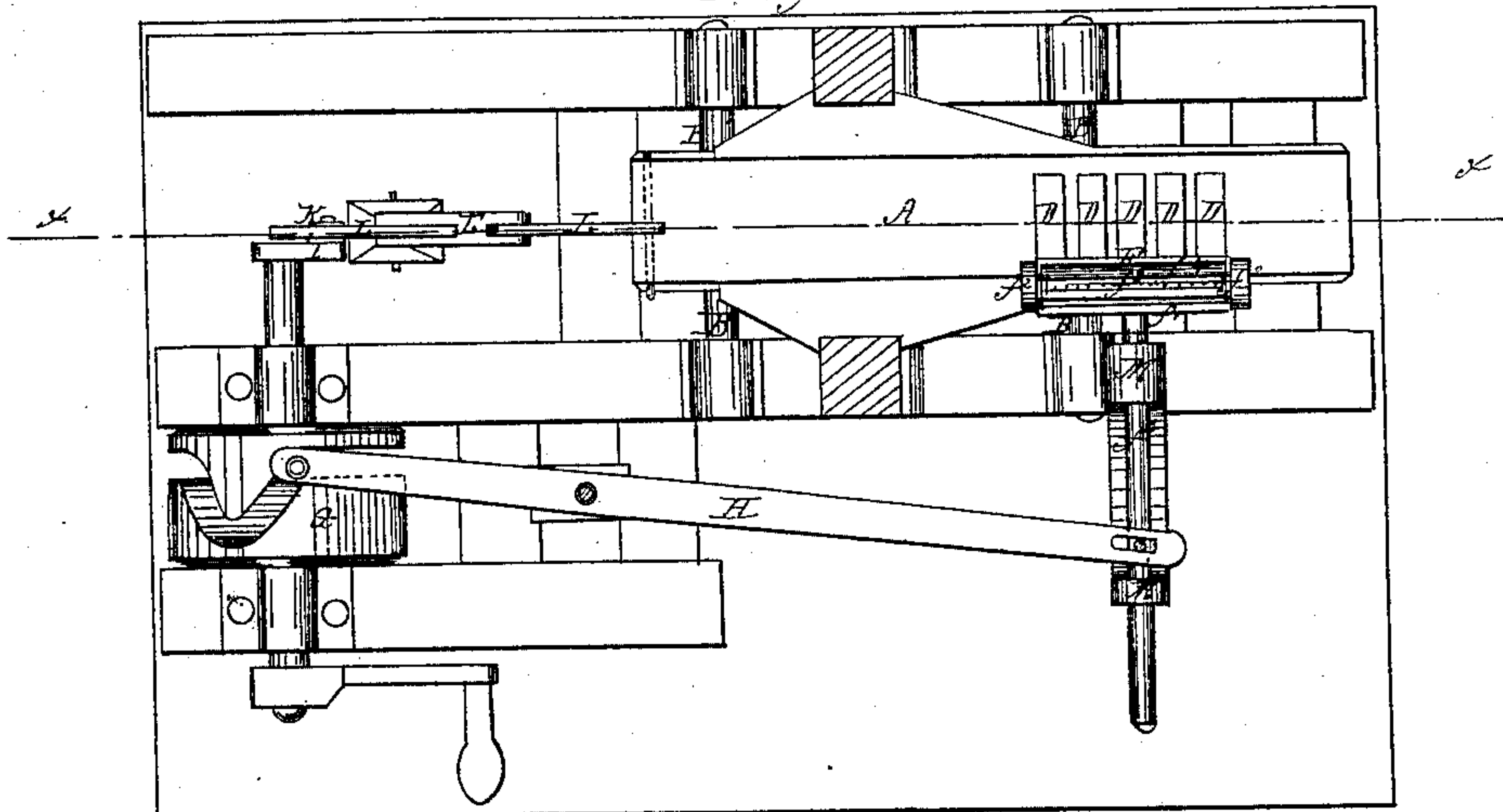


*Gregg & Moser,*  
*Brick Machine.*

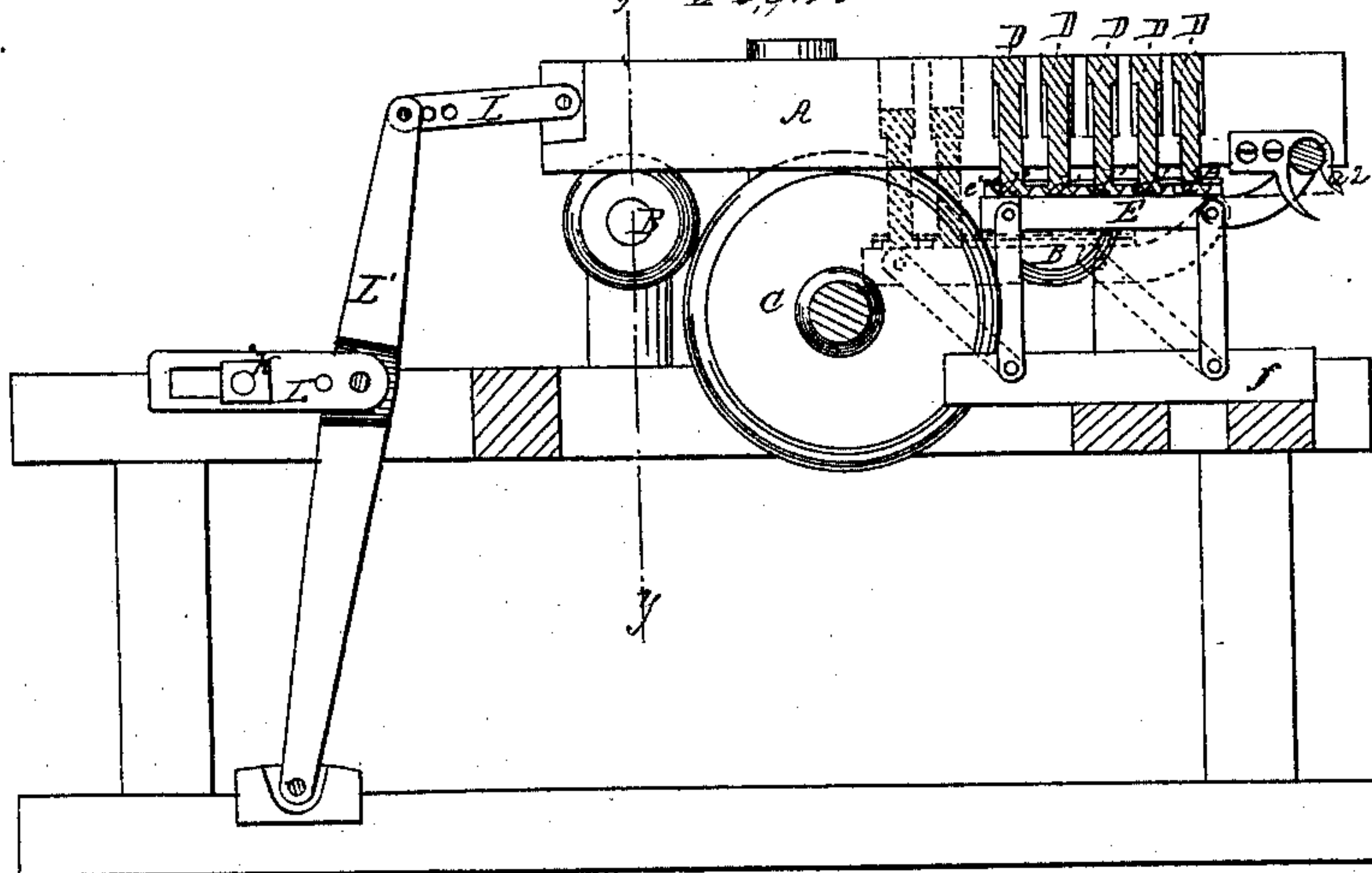
*No 38,629.*

*Patented May 19, 1863.*

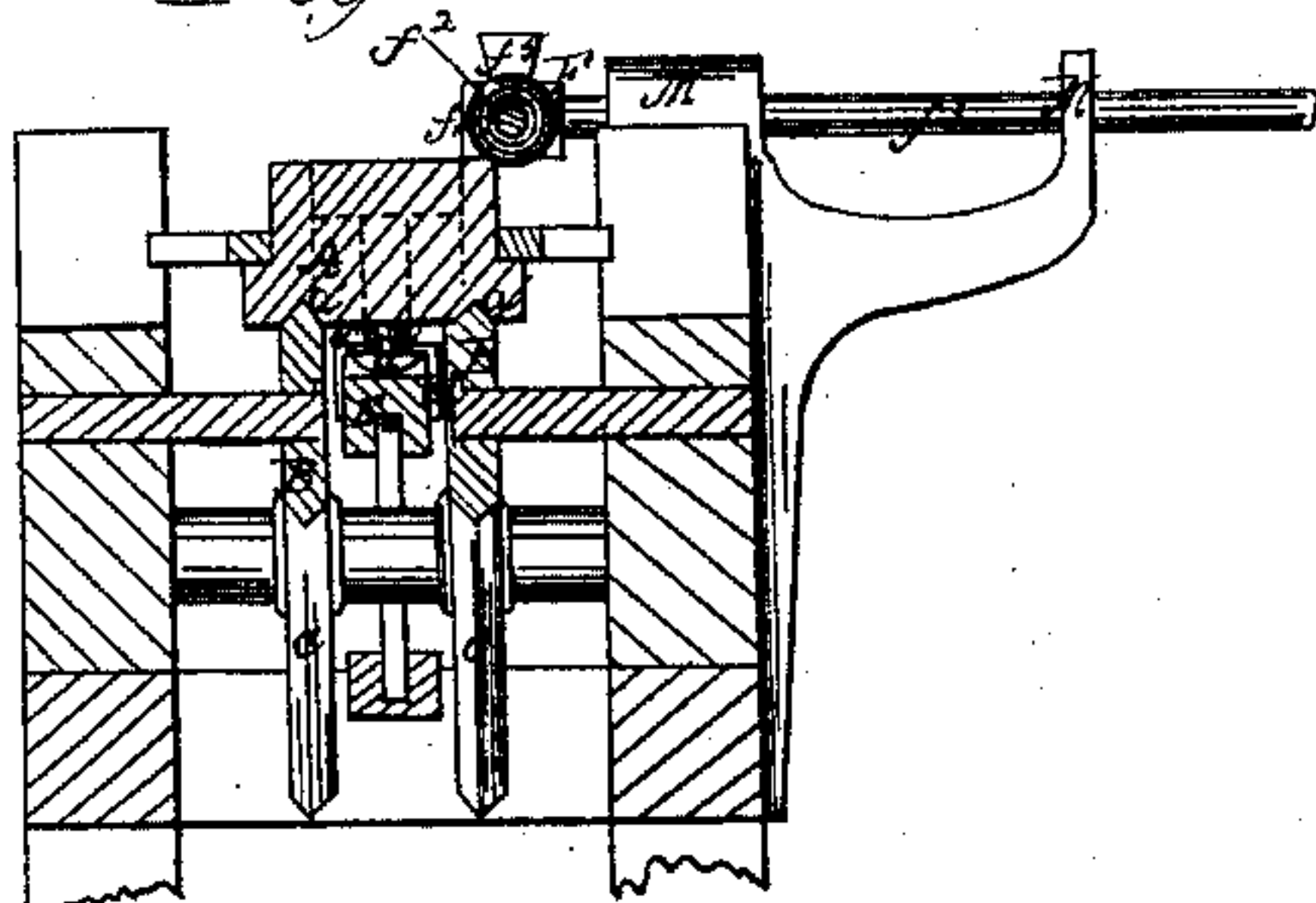
*Fig 1*



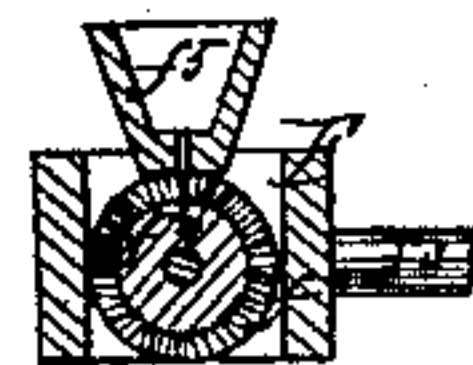
*Fig 2*



*Fig 3*



*Fig 4*



*Witnesses:*

*Isaac Gregg Jr.*  
*W. H. Edson*  
*Samuel Stearns*

*Inventors*  
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# UNITED STATES PATENT OFFICE.

ISAAC GREGG OF PHILADELPHIA, AND HENRY MOSER, OF PITTSBURG,  
PENNSYLVANIA, ASSIGNORS TO ISAAC GREGG, AFORESAID.

## IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 38,629, dated May 19, 1863.

*To all whom it may concern:*

Be it known that we, ISAAC GREGG, of the city of Philadelphia, and HENRY MOSER, of Pittsburg, in the State of Pennsylvania, have invented a new and useful Improvement in Brick-Machines; and we 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 accompanying drawings, making a part of this specification, in which—

Figure 1 is a sectional plan view of a brick-machine having our improvement applied thereto, (the usual "hopper," "pressure-roller," and "cutters," being the same in construction and arrangement as those described in the patent of Isaac Gregg, dated August 1, 1854, need not be shown in the present drawings;) Fig. 2, a vertical longitudinal section, and Fig. 3 a vertical transverse section, of the same through the lines *x* and *y*, respectively, of Figs. 1 and 2; and Fig. 4, an enlarged vertical transverse section of the "sweep" and lubricator shown in Figs. 1 and 3—like letters indicating the same parts when in the different figures.

This improvement appertains to a description of brick-machines patented by Isaac Gregg (one of the present applicants) in the years 1848, 1850, 1851, and 1854, the general characteristics of which are, that the clay is pressed into the molds of a reciprocating frame by means of a roller acting in combination with cutters in a hopper, and the bricks expelled from the molds by lifters forcing up the pistons and being operated by the reciprocating movements of the mold-frame.

Our present invention has for its objects, first, to diminish the wear and tear to which the reciprocating mold-frame and its supports and guides have heretofore been subject from the accession of the falling sand or grit of the clay; second, to effect greater uniformity in the size and density of the bricks by causing a perfect and certain return of the pistons after the bricks just previously made have been expelled from the molds; third, to apply the dynamic pressure of the molds to the side edges of their contents, and thus economize

the motive power and produce better finished bricks; and, fourth, to dispense with the use of the dust heretofore required to prevent the bricks from adhering to the pistons, and to insure a more easy and effective removal of the said bricks from the mold-frame; and it consists, substantially as hereinafter described and specified, in the employment of  $\Lambda$  grooves along in the under side of the mold-frame, and correspondingly beveled carrying-wheels and counter-pressure wheels working in the said grooves; in providing the lower ends of the piston-stems with flanges or heads, and the lifters with retaining-plates, so that in operating together the lifters will compel the descent as well as the ascent of the pistons in the molds; in arranging the positions of the said molds and their pistons in relation to each other and to the usual pressure-rollers and cutters of the hopper so that the dynamic pressure shall be directly upon the side edges only of the bricks in forming and in pushing them out of the molds; in combining with the sweep or mold-clearer an oil-box and lubricating roller or brush, so that as the sweep is caused to push the bricks off of the mold-frame the lubricator will also pass over with it and oil the faces of the pistons; and in the arrangement of a cam-wheel and a vibrating lever or rock-shaft, in combination with the lubricating-sweep, together with the arrangement of the cam-wheel, crank-shaft, and a sliding wrist-pin box, connecting-rods, and a lever in connection with the mold-frame so as to operate the latter and the lubricating-sweep alternately during the working of the brick-machine.

In the drawings, A is the reciprocating mold-frame; B B, the carrying-wheels, and C C the counter-pressure wheels of the same; D D, the pistons of the molds, and E the piston-lifter; F, the sweep and lubricator; G, the cam-wheel, and H the vibrating lever, which communicates motion from the cam to the lubricating-sweep; I, the crank on the cam-shaft; K, the sliding wrist-pin box; L L, the connecting-rods, and L' the lever whereby the reciprocating motions of the mold-frame A, and the consequent actions of the pistons and



lubricating-sweep are produced and the extent of their motions regulated.

Along in the under side of the mold-frame A two  $\Lambda$ -grooves,  $a' a'$ , are made parallel with the sides of the frame, and so as to receive the beveled peripheries of the carrying-wheels B B and counter-pressure wheels C C, which together serve to guide and support the mold-frame A during its movements, and while the clay is being forced into the molds, (by the usual pressure-roller and cutters in the hopper beneath which the said mold frame is moved, as described in the patents before referred to,) and thus being covered by the mold-frame, the access of falling dirt or grit to the grooves or wheels is effectually prevented.

The lower ends of the stems of the pistons D have each a flange or head,  $d'$ , while the lifter E is provided with a hooked or shouldered plate,  $e'$ , fixed on each side of the same, so that they will catch over and retain the flanged ends of the stems of the pistons D between them and the lifter E in such a manner as to cause the said pistons to be drawn downward in the molds when the latter are being carried toward the hopper, an additional hook,  $a^2$ , being fixed in front of the usual hook on the mold-frame A, which pushes the lifter E obliquely downward by a positive motion, and thus effectually causes a full and perfect descent of the pistons to the bottoms of the molds, as indicated by the red lines in Fig. 2.

Hitherto the pistons were intended to descend by gravitation, or, failing in this, by the force of the pressure-roller and cutters in feeding the molds with the clay; but experience has demonstrated that in a very short time the pistons in such case become so much clogged and tightened with clay and grit that they fail to descend, from the combined action of gravitation and the pressure of the hopper roller and cutters, and hence irregularity both as to size and density of the bricks is the consequence—objections which, it will readily be seen, are entirely obviated by giving the pistons the positive motion downward by the action of the lifter E, in the manner described. The sweep F is a bottomless box,  $f'$ , supported by wheels  $f^2 f^2$ , which rest upon the mold-frame A, and is guided by a stem,  $f^3$ , which is adapted to slide longitudinally in suitable bearings, M M, which are fixed to the frame of the machine, substantially as represented in Figs. 1 and 3. Within the box  $f'$  is a lubricating-roller,  $f^4$ , or cylindrical brush, fixed on the axis of the wheels  $f^2 f^2$ , so that it will be rotated thereby, and immediately above and in contact with this brush or elastic roller is a perforated oil-trough,  $f^5$ , which, when supplied with the oil, feeds the roller or brush therewith, and thus the faces of the pistons D become lubricated properly, as the sweep F is moved backward and forward across the mold-

frame. Motion is given to the lubricating-sweep F by means of the cam-wheel G through the lever H; or, if preferred, a rock-shaft with suitable crank and arms to connect it with the cam and sweeps may be substituted for the lever H. The use of a lubricant in this manner applied is found to be much more effective in preventing the moist bricks from adhering to the pistons than the dry clay or dust heretofore used, and, besides, it tends also to preserve the molds and pistons, to diminish friction, and to keep them in better working condition.

The box K, which receives the wrist-pin of the crank I, is made to slide periodically and easily in an opening in the connecting-rod or pitman L, in such a manner as to allow the mold-frame A to remain stationary while the cam G on the crank-shaft operates the lubricating-sweep F; and the arrangement of the connecting-rods L L and the vertical lever L' in the relation to each other (shown in Fig. 2) affords a more ready means of adjusting the whole to suit the required extent of the motions of the mold-frame.

The drawings represent only a single set of molds in the frame A, with its sweep and its piston-operating device; but it is intended to be understood that two like sets are to be applied to each machine, so that while one set is being moved toward and then filled under the hopper the bricks of the other set are being forced out of the molds, and then removed by its respective sweep, as heretofore.

Having thus fully described the construction and operation of our improvement in brick-machines, and pointed out its utility, what we claim as our invention, and desire to secure by Letters Patent, as new therein, is—

1. The employment of the parallel  $\Lambda$ -grooves  $a' a'$  along in the under side of the mold-frame A, in combination with the correspondingly-beveled supporting-wheels B B and counter-pressure wheels C C, the same being arranged to operate together, substantially in the manner described and set forth, for the purposes specified.

2. Giving to the pistons D of the molds a positive downward motion by means of the flanges  $d'$  or their equivalents on their stems, in combination with the two retaining-plates  $e' e'$  on the lifter E and the hook  $a^2$  on the frame A, substantially as described, for the purpose specified.

3. In combination with the mold-frame A and pistons D, operating as described, arranging the molds therein so that their narrower sides shall form their mouths for receiving the clay, and the action of the pistons D be directly upon the lower side edges only of the bricks in pushing the latter out of the molds, as described and set forth, for the purposes specified.

4. In combination with the sweep F, the



oil-box  $f^5$  and the lubricating roller or brush  $f^4$ , the same being constructed and arranged to operate together, substantially in the manner described and set forth, for the purposes specified.

5. Operating the lubricating-sweep F, in the manner described, by means of the cam G, the same being connected together by means of the vibrating lever H or its equivalent, and arranged substantially as set forth.

6. The employment of the sliding box K for the crank wrist-pin, in combination therewith

and with the connecting-rods L L and lever L', arranged in relation to the crank I, cam-wheel G, and mold-frame A, in the manner described, for the purpose specified.

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HENRY MOSER.

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BENJ. MORISON,

ISAAC GREGG, Jr.

Witnesses to signature of Henry Moser:

M. F. EATON,

JAMES STEEN.