

(No Model.)

2 Sheets—Sheet 1.

L. B. KENNEDY.

BRICK MACHINE.

No. 295,019.

Patented Mar. 11, 1884.

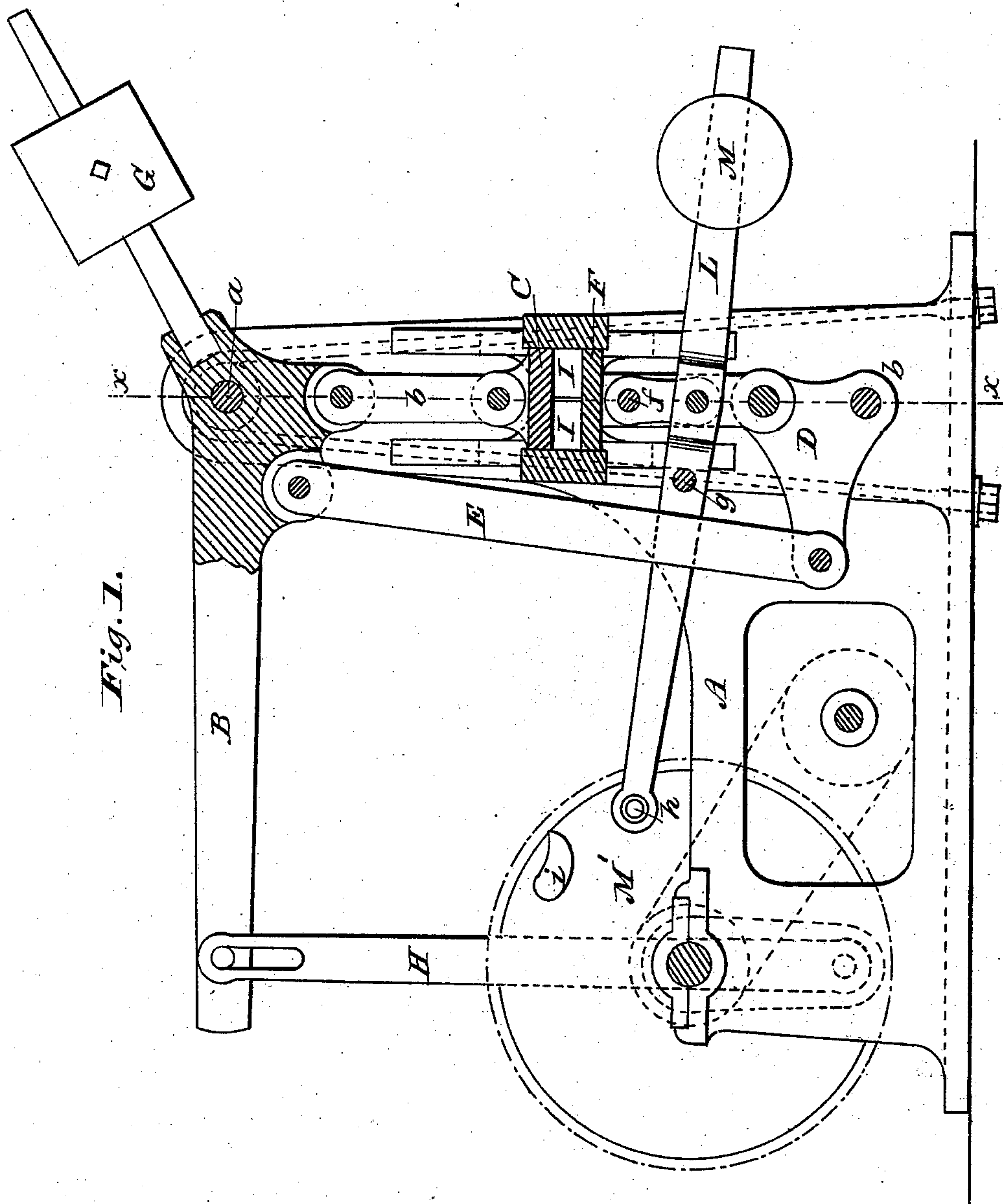


Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

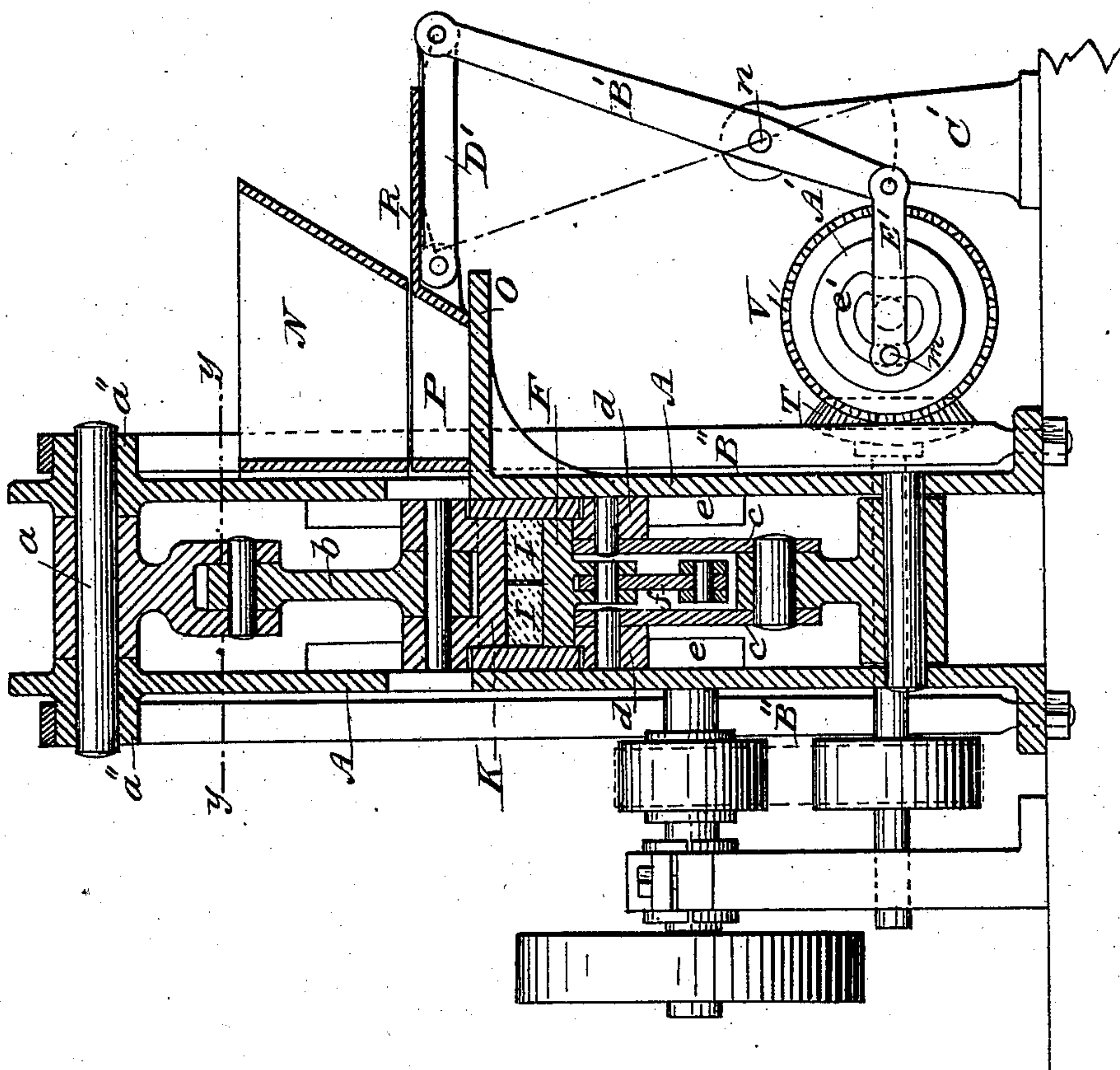
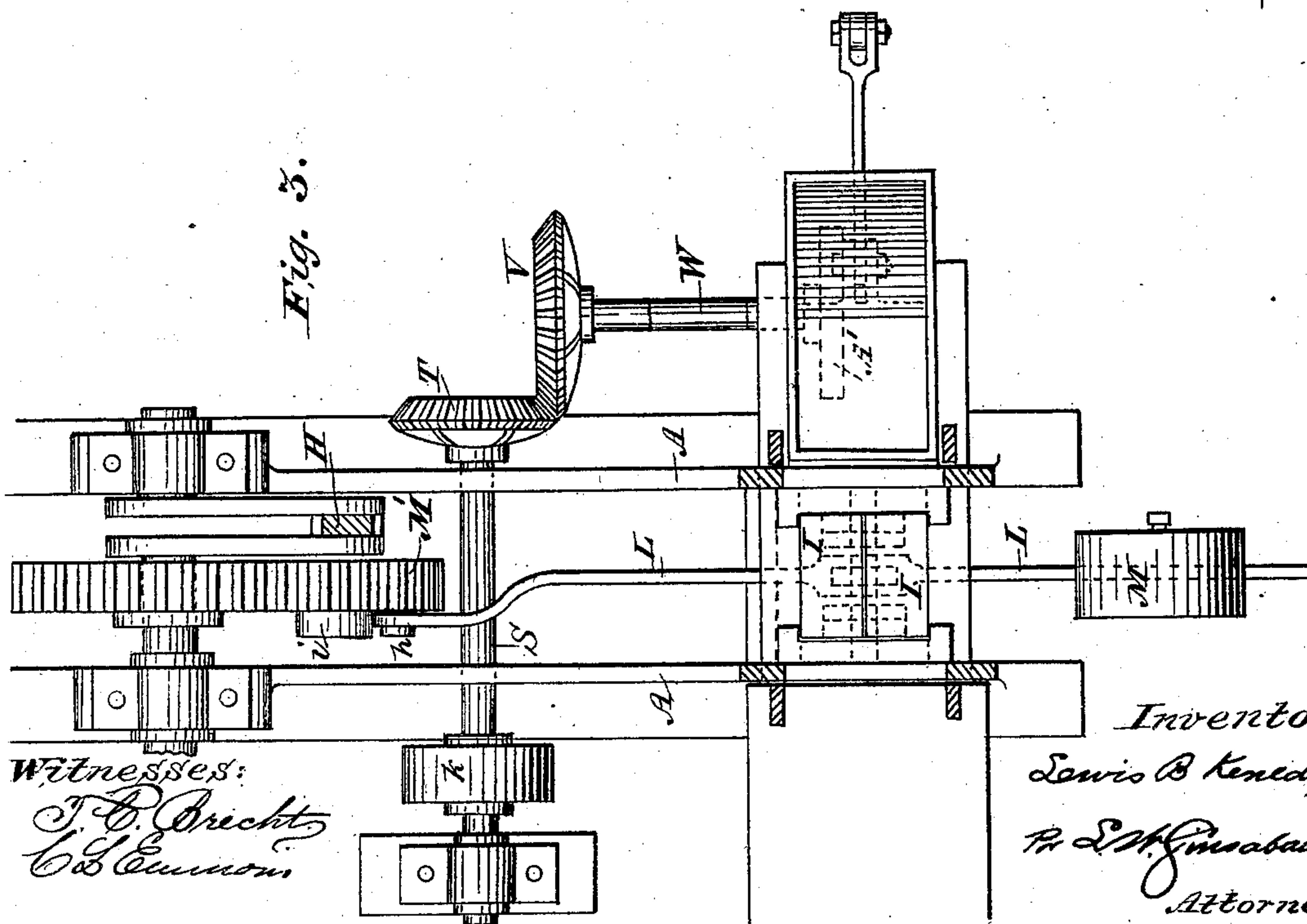


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEWIS B. KENNEDY, OF KEOKUK, IOWA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 295,019, dated March 11, 1884.

Application filed January 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, LEWIS B. KENNEDY, a citizen of the United States, residing at Keokuk, in the county of Lee and State of Iowa, have invented certain new and useful Improvements in Brick-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in brick-machines, which improvements are based on patents granted to me as follows: No. 239,611, of April 5, 1881; No. 267,542, of November 14, 1882, and No. 280,316, of June 26, 1883.

The object of my invention is to simplify the construction of the machines mentioned in the above patents, and thereby lessen the cost of manufacture, producing a machine more easily transported, while at the same time the working capacity and effectiveness of the machine is not impaired.

The machines, as constructed under the patents above named, are provided with a horizontally-revolving mold-wheel, in which are the usual mold cavities and bottoms, which are acted upon by the lower plungers. The mold-wheel, being made of metal, is necessarily heavy and requires a great amount of power to rotate it, and, furthermore, great nicety of adjustment is required in order to have the mold-wheel revolve and stop at the proper point, so that the mold and cavities will register with the upper and lower plungers. Should any of the parts which operate the mold-wheel get out of position, the mold-cavities will not register with the compression-plungers, and as a result some part of the machine is apt to break, thus causing in many instances vexatious delays, and to obviate these and other difficulties is the object of my invention; and to this end my invention consists in dispensing with the mold-wheel and substituting therefor stationary molds, and providing means for feeding the clay from the side of the machine into the mold-cavities, so that the mold-filling devices will not interfere with the levers which operate the compression-plungers.

My invention consists, further, in certain details of construction, which will be more fully hereinafter described, and pointed out in the claims.

Figure 1 is a side view, partly in section, of my machine. Fig. 2 is a sectional end view, taken on the line *xx* of Fig. 1. Fig. 3 is a top or plan view on the line *yy* of Fig. 2, with the upper plunger removed.

Referring to the drawings, A A are the side frames of the machine, which are by preference made of the best quality of cast-iron, said frames being secured together by the pivots of the operating-levers, the shafts of the operating-wheels, and by any suitable number of cross-bars, so as to make the frame rigid and solid. The frames A are further braced and held more rigidly to the base by means of the brace-rods B', the lower ends of which are secured to the base of the frames, while the central portions are bent over the trunnions *a*, and held in contact therewith by means of screw-nuts on the ends of the brace-rods.

B is the main operating-lever, pivoted in the side frames at *a*, to the lower edge of which is pivoted the link *b*, said link being pivoted to the upper plunger, C. The main lever B is connected to the lower operating-lever, D, by means of the connecting rod or bar E, said lever D being pivoted in the side frames, A, at *b*, and provided with extensions or arms *c*, which exert an upward pressure on the mold-bottom or lower compression-plunger, F, which will be more fully described hereinafter. The lever B is provided with a counter-weight, and is connected to the main operating-wheel by a slotted bar, H, the lower end of said slotted bar being secured to a crank-arm on the main driving-shaft N', or by a wrist-pin to the wheel M.

The devices just described, with the exception of the arms *c*, are essentially of the same construction as the devices employed in the patents hereinbefore referred to, and need no further description in this application.

I I are the mold-cavities, formed between the frames A A, in which are located the plunger and mold-bottom F, against the under side of which the arms *c* rest when the plunger or mold-bottom F is in its lowest position. The arms or extensions *c* are provided with pieces *d*, secured to their side, which work up and down in ways *e*, formed in the side frames. As before mentioned, the arms *c* and side pieces, *d*, impinge against the under side

of the mold-bottom or under pressure-plunger, and in the downward movement of the lever D the plunger F is forced up by the arms *c* to press and compact the brick, it being understood that at the same time the arms *c* are exerting their pressure on the mold-bottom or plunger F the upper compression-plunger, K, is being forced down and the brick firmly compacted between the oppositely-moving plungers, and the clay subjected to an enormous pressure between these levers of the "first order." The plunger F is connected to a pivoted and weighted lever, L, by means of a bar or link, *f*, said lever being pivoted to the frame A at *g*.

To the outer end of the lever L is secured an adjustable weight, M, while the inner end of the lever L is provided with a stud or projection, *h*, adapted to be struck by a cam-like projection, *i*, on the wheel M', which tends to depress the inner end of said lever and raise the plunger or mold bottoms F, so as to eject the brick from the mold, said brick being pushed off the mold-bottom or lower plunger by devices which will be presently described.

N is the feed-hopper, mounted on a bracket, O, secured to the side of the frame N, in which the clay to be molded is placed.

P is the mold-filler, adapted to slide underneath the hopper N and receive the requisite amount of clay to form one or more bricks therefrom. The mold-filler P is provided with a cut-off, R, which closes the bottom of the hopper N when the mold-filler is thrust forward to empty its charge of clay in the mold-cavities, as is the common practice in this class of machines. The mold-filler is operated by means of the following devices:

S is the main driving-shaft, to one end of which is secured the band-pulley K', while to the other end is secured a bevel-gear, T, which meshes with a similar wheel, V, secured to the shaft W, said shaft W being secured in suitable bearings, and provided at the other end with a wheel, A'. The wheel A' is provided with a cam-groove, *l*, the office of which will be more fully hereinafter described.

B' is a lever pivoted at *n* to the standard C', to the upper end of which is provided the bar D', which connects the lever B' with the mold-filler F.

To the lower end of the lever B' is secured an arm, E', which is provided with a stud, *m*, which enters the cam-groove *l*, and by means of which the lever B' is rocked back and forth to push the mold-filler over the mold-cavities and fill the same with clay. The cam-groove is so formed and the devices operated by it that the mold-filler will be projected over the mold-cavities, time being allowed for the clay to fall into the same, and the mold-filler is

then quickly returned, so as not to obstruct the downward passage of the upper plunger.

It will be noticed that when the plungers K and F have exerted their pressure on the brick, when the upper plunger is being raised or withdrawn from the mold that through the instrumentality of the lever L, the lower plunger is raised and forces the brick up, which follows closely and in contact with the upper plunger, so that when the brick and upper plunger are free from the mold the upper plunger will separate from the brick without disturbing or blistering it, and thus the injurious effect of suction is obviated. When the bricks have been raised to the top of the mold, the mold-filler pushes them off to the opposite side of the machine, from whence they can be removed and stacked in the kiln. At this juncture the lever L is freed from the cam *i*, and the weight M causes the lever L to drop, bringing the lower plunger down to the bottom of the mold and allowing the clay from the filler to fall into the molds. By this construction I am enabled to dispense with the heavy mold-wheel which I have heretofore used, making the machine much lighter without diminishing the effectiveness of its working capacity, while at the same time the brick produced in this machine is of a very superior quality.

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

1. The levers B and D, with their respective plungers and connecting-rods, arranged and operating in the manner described, in combination with the clay-feeding device located at the side of the machine, as set forth.

2. A brick-machine the upper and lower plungers of which are moved in opposite directions to compress the clay by a single operating-lever, as described, in combination with devices, substantially such as described, for charging the clay into the mold and pushing the brick from the ejecting-plungers, said devices being located and operated from the side of the machine, as set forth.

3. The lever D, as described, provided with the arms *c*, in combination with the lower plunger, F, as and for the purpose set forth.

4. The lever L, provided with the adjustable weight M, pivoted in the frame A, and adapted to be operated by the cam *i*, in combination with the lower plunger, as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

LEWIS B. KENNEDY.

Witnesses:

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C. B. HARRINGTON.