

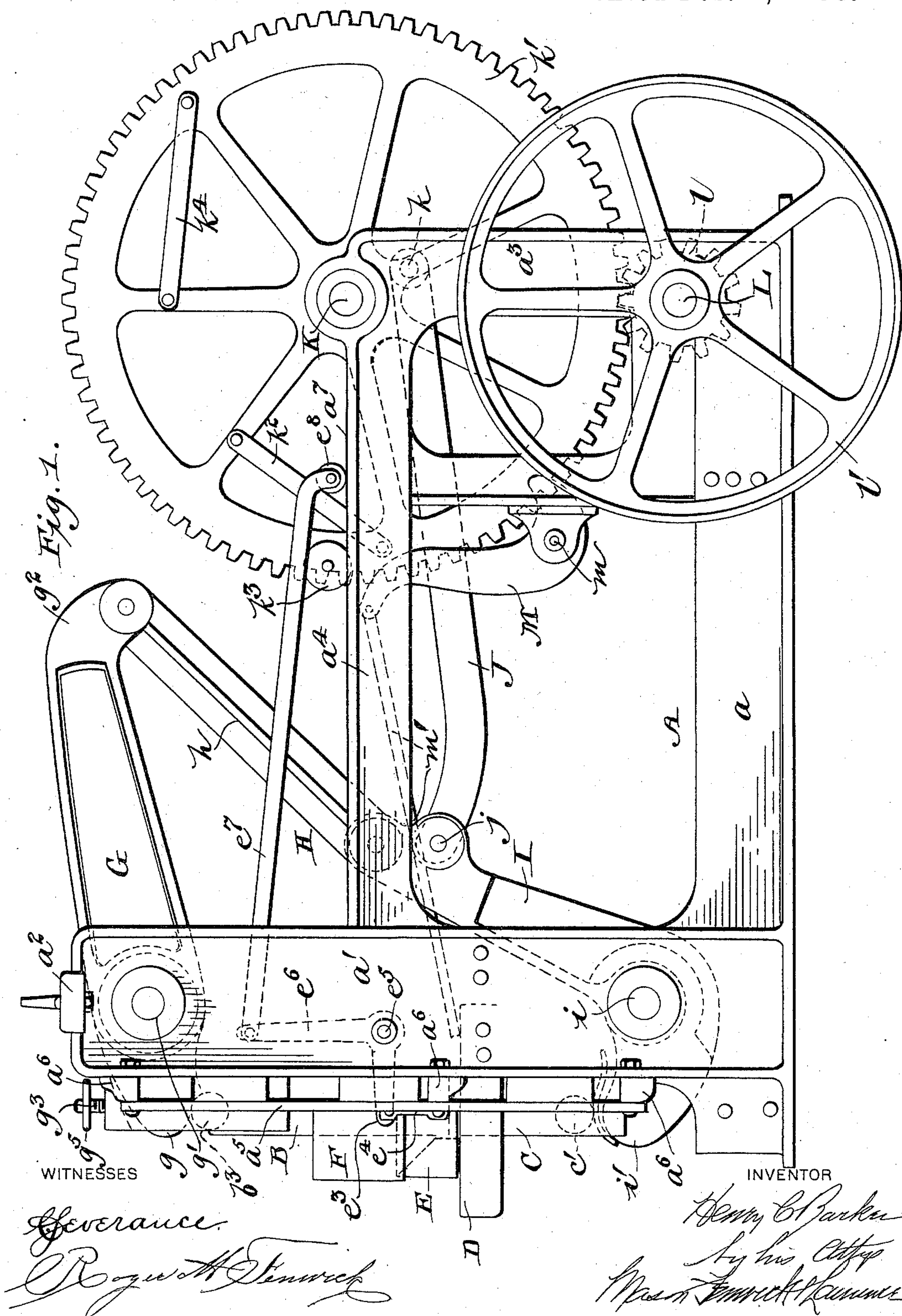
(No Model.)

2 Sheets—Sheet 1.

H. C. BARKER.
BRICK MACHINE.

No. 598,724.

Patented Feb. 8, 1898.



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Fig. 2.

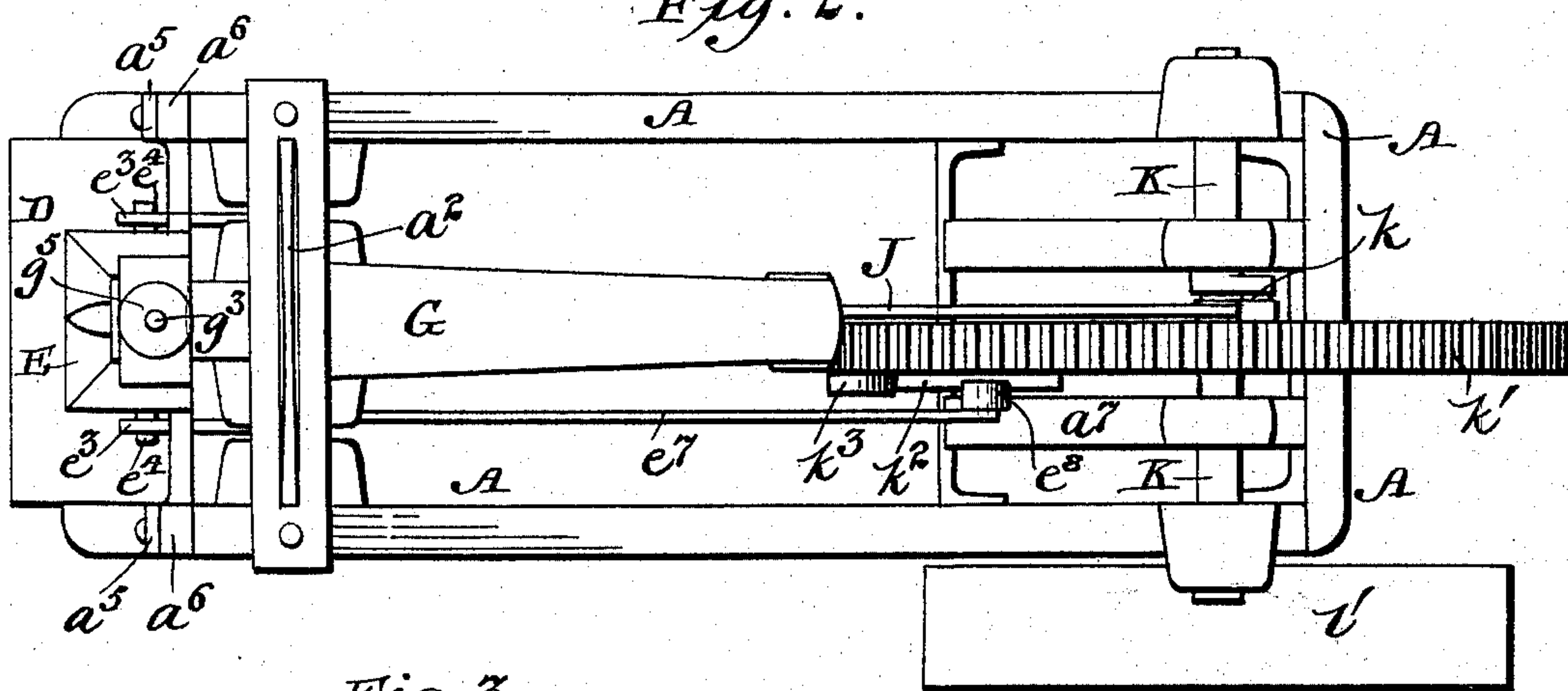


Fig. 3.

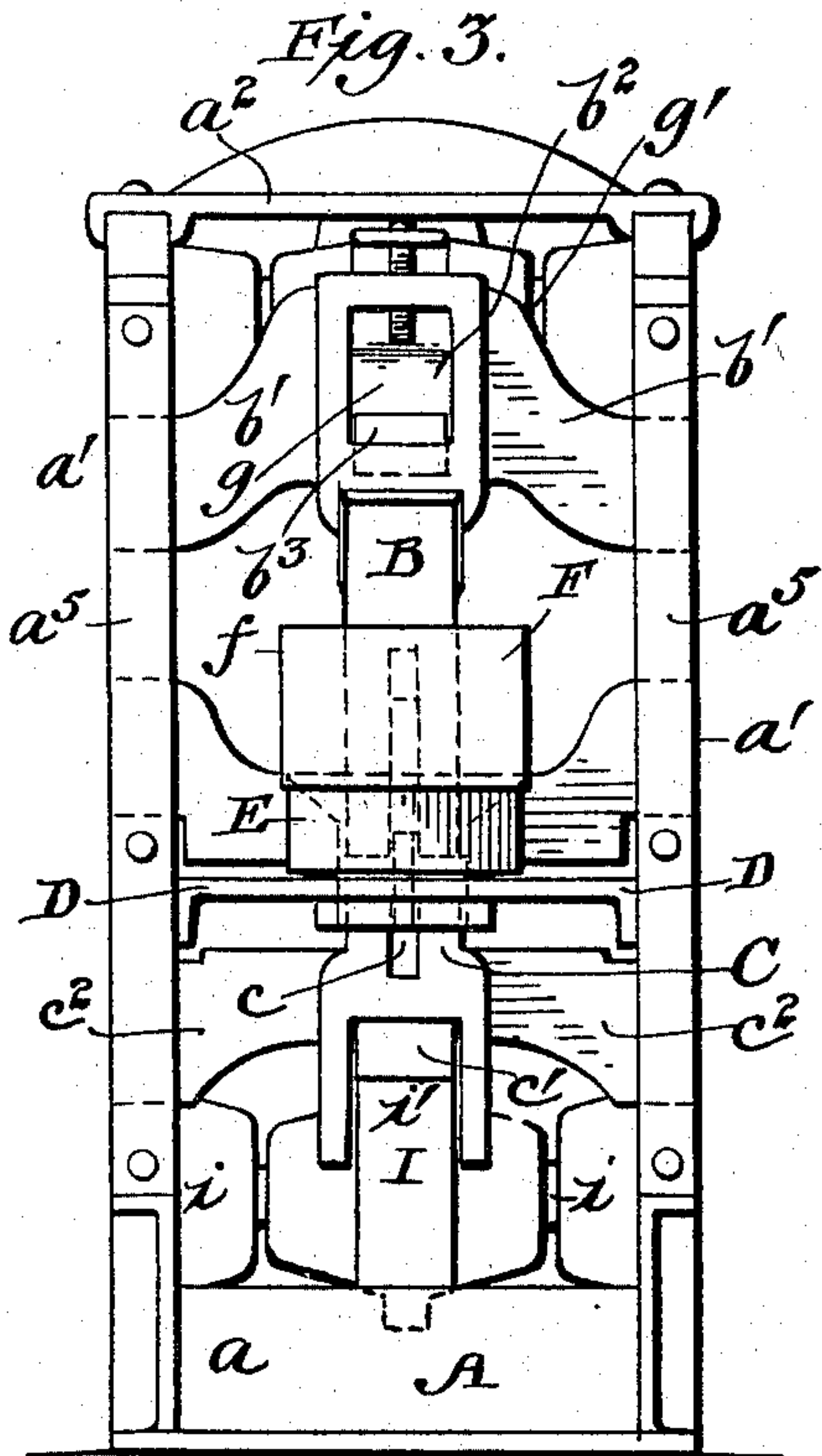


Fig. 4.

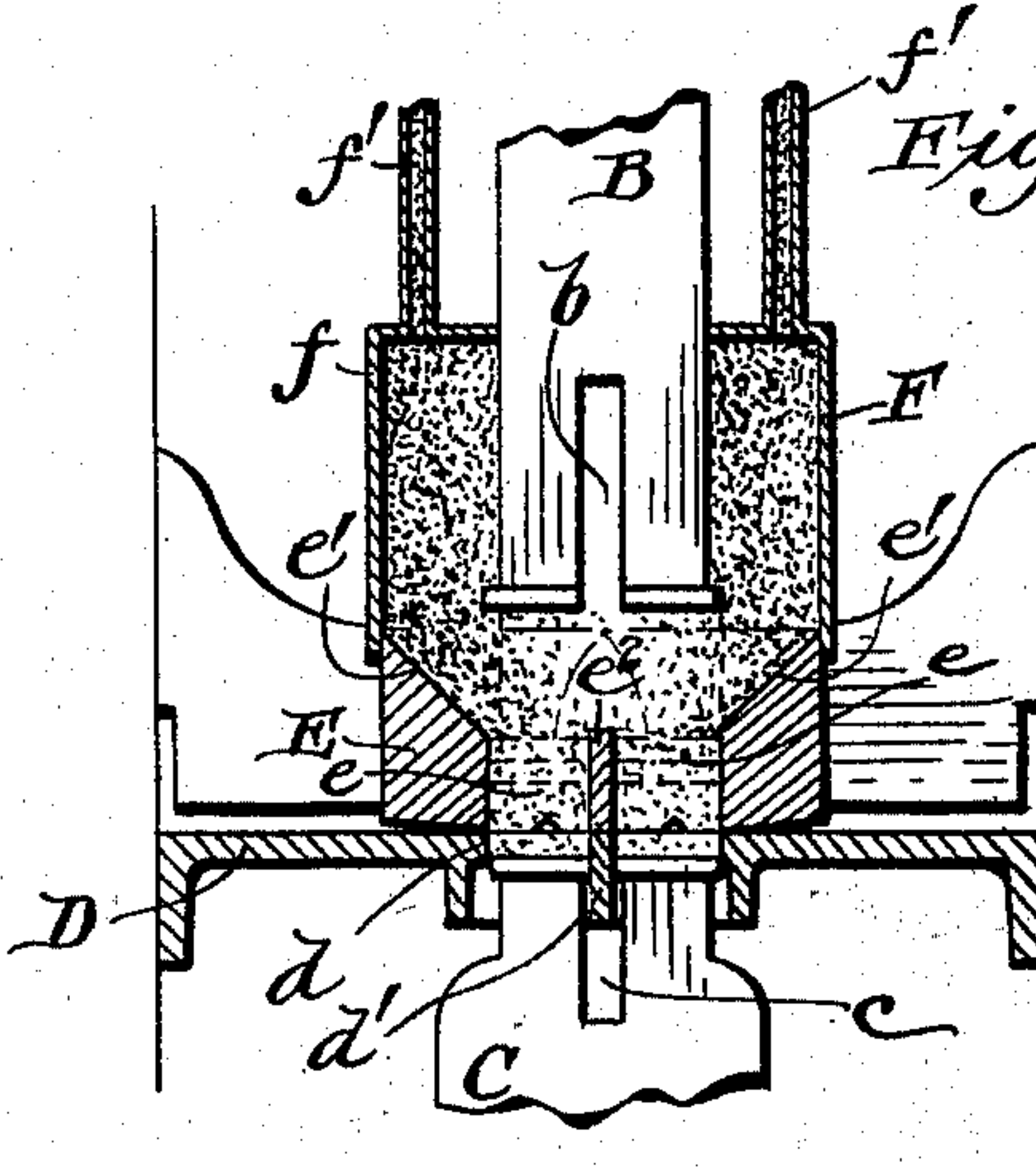
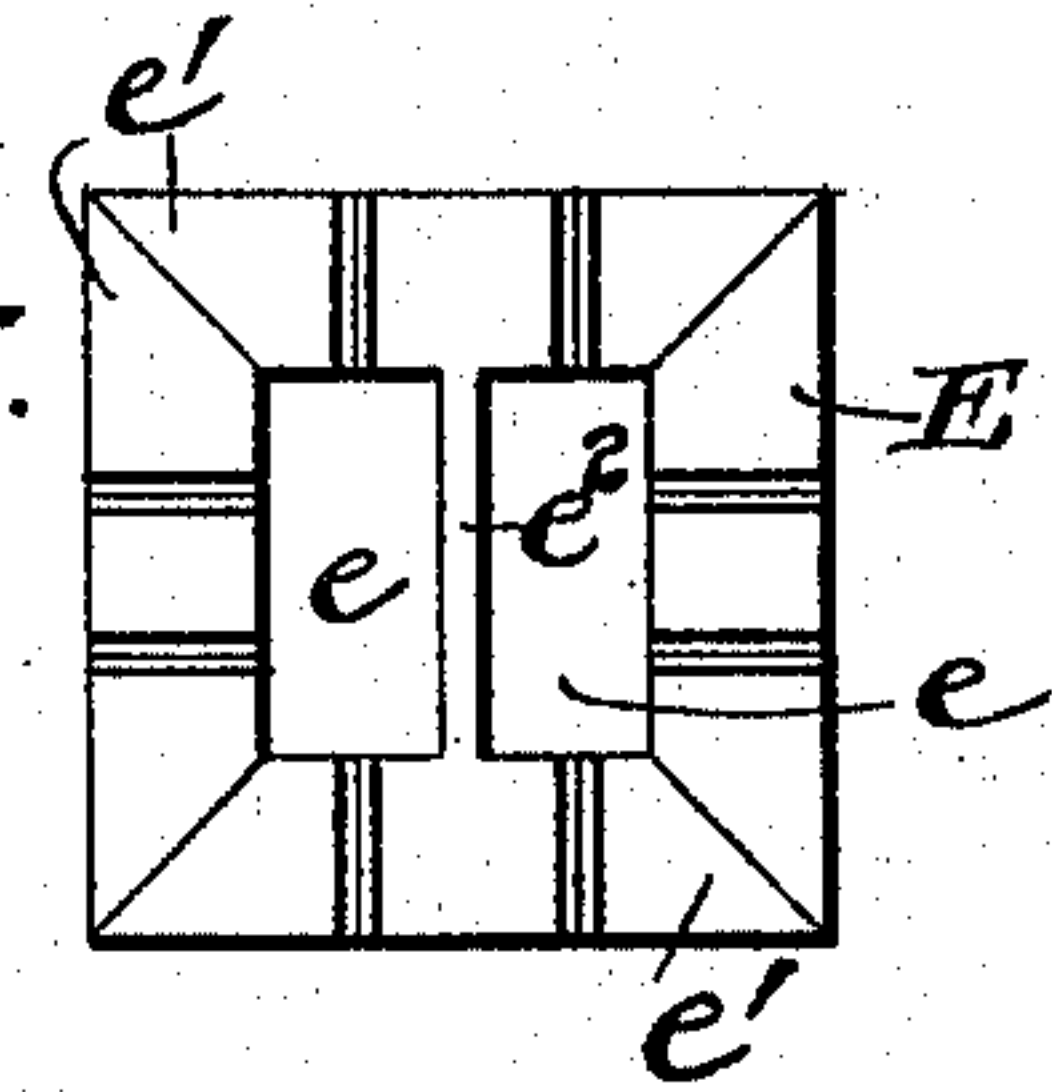


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY C. BARKER, OF SEDALIA, MISSOURI, ASSIGNOR TO JOHN W. BOWMAN,
EMIL DORN, AND HENRY KROPP BENTE, OF SAME PLACE.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 598,724, dated February 8, 1898.

Application filed April 13, 1897. Serial No. 631,991. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. BARKER, a citizen of the United States, residing at Sedalia, in the county of Pettis and State of Missouri, have invented certain new and useful Improvements in Brick-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in dry-pressed-brick machines; and it consists in a frame carrying levers, means for operating said levers, a mold-table mounted in said frame, a mold adapted to rest upon said table, dies actuated by said levers and adapted to press clay or similar material in the mold for forming bricks, and means for raising the mold above the brick for removing the same.

It also consists of dies mounted in a suitable frame, means for operating the same, a mold having a feed mechanism attached thereto, means for raising the mold after a brick has been pressed, and means for ejecting the brick from beneath the mold.

It further consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of my improved brick-machine. Fig. 2 represents a top plan view of the same. Fig. 3 is an end elevation of the brick-machine. Fig. 4 is a detail vertical section through the mold-table, mold, and feeding mechanism; and Fig. 5 is a detail view of the mold, showing the grooves upon the under side for the escape of air.

A in the drawings represents the frame of my improved brick-machine; B, an upper die; C, a lower die; D, a mold-table; E, a mold, and F a feeder.

The frame A is provided with a bed-plate *a* and at one end with upright standards *a'* *a'*, connected at the top by a cross brace-piece *a²*. The frame A is also provided at its other end with upright standards *a³*, which are connected with the standards *a'* by horizontal braces *a⁴* *a⁴*.

The upper die B is formed of a rectangular bar preferably bifurcated at its lower end, as

at *b*, and is provided with laterally-extending portions *b'* *b'*, the outer ends of which engage guides formed upon the standards *a'* *a'*. These guides are preferably formed by the bars *a⁵* *a⁵*, bolted to the edges of the standards *a'*, spacing-blocks *a⁶* of a suitable thickness being interposed between the said bars and standards. The die B is provided with a slot *b²* at its upper end. In the lower end of the slot is mounted a friction-roller *b³*, which is adapted to be engaged by the end *g* of a lever G, pivotally mounted, as at *g'*, between the upper ends of the standards *a'* *a'*. The other end *g²* of the lever G is connected to a toggle H. The end *g* of the lever G extends into the slot *b²* of the die and is adapted to exert a pressure upon the friction-roller *b³* for forcing the die B downwardly.

In order to be able to regulate the height to which the upper die may be raised upon the retraction of the lever G, I provide a screw *g³*, mounted in the die B above the slot *b²* and adapted to extend into the same. The upper end of the screw *g³* is provided with hand operating means, as a wheel *g⁵*, by which it may be turned to adjust the screw. It will be seen that by adjusting the screw *g³* the height to which the upper die B will be carried by the movement of the lever G may be regulated at will. The lower die C is also bifurcated at its upper end, as at *c*, to correspond to the die B and is provided at its lower end with a friction-roller *c'*. The die C is also provided with laterally-extending arms *c²* *c²*, which engage the guides *a⁵* to direct the movement of the said die C. A lever I, pivoted, as at *i*, in the frame A, is adapted to engage the friction-roller *c'* at its outer end *i'* to raise or lower the die at the proper time. The inner end of the lever I forms one member of the toggle H, the other member *h* thereof, connecting the inner ends of the levers G and I, being pivoted to each. In order to operate the toggle H, a bar J is pivoted, as at *j*, at one end to the lever I and at the other end to a crank *k* upon the shaft K. The shaft K carries a large gear-wheel *k'*, which meshes with a pinion *l* upon a shaft L, mounted in the lower part of the frame A. The shaft L preferably extends beyond the frame A and is provided with a pulley or belt-wheel *l'*, by

which any suitable power may be applied for operating the above-described mechanism.

It will be apparent from the above description that upon revolving the pulley l' motion will be imparted through the pinion l to the gear-wheel k' and shaft K , which in turn will cause the reciprocation of the bar J , thereby operating the toggle H and levers G and I for forcing the dies B and C toward each other to press the bricks and retracting the same.

Mounted between the standards $a' a'$ is a table, which I term the "mold-table," D , which is provided centrally thereof with an aperture d to receive the upper ends of the die C . As the machine herein particularly described is adapted to mold two bricks at a time, the aperture d is provided with a partition d' , dividing the opening. Above the table is a mold E , provided with central openings, as $e e$, in which the bricks are adapted to be compressed. The upper surface of the mold E is beveled, as at e' , to direct the clay into the compressing-chambers. A central partition e^2 is employed to divide the bricks and guide the bifurcated ends of the dies. Secured to the upper part of the mold E is a feeder F , comprising a casing f , having inlet-passage f' leading into the top of the same for supplying the clay to said feeder. The die B passes through the feeder and therefore works up and down in the clay. When the die B is raised, the clay around it in the feeder falls into the mold, being guided by the inclined surface e' , and when the die descends it compresses the clay beneath it. In order to allow for the escape of air from the clay upon the pressing of the brick, I form grooves, preferably V -shaped, upon the end surfaces of the mold E , extending in different directions. In order to remove the bricks from the mold, I provide means for raising the mold after the bricks are pressed, consisting of levers $e^3 e^3$, mounted upon a shaft e^5 , pivoted in the standards $a' a'$, one end of each lever extending on either side of the mold and connected thereto by pivoted links $e^4 e^4$. A lever e^6 is secured to the shaft e^5 and is connected at its upper end to a link or bar e^7 . The bar e^7 carries a friction-roller e^8 at one end, said roller being adapted to rest and run upon a portion of the frame, as a^7 . A diagonal bar k^2 is mounted upon the side of the gear-wheel k' , and one edge thereof forms a cam-surface for engaging the friction-roller e^8 as the gear-wheel k' revolves. The mold normally rests upon the table, but after the bricks have been pressed the bar k^2 will engage the roller e^8 and draw the bar e^7 toward the gear-wheel k' , which will raise the mold E to a point a little above the bricks. After the bricks are removed the roller e^8 will become disengaged from the bar k^2 and the mold will return to its position upon the table. A bar k^4 , similar to k^2 , but oppositely arranged, is also secured to the wheel k' and is adapted to engage the wheel e^8 and force the mold E to its place on the table D in the

event of its own weight not being sufficient to accomplish this result. In order to remove the bricks from beneath the mold when the same is raised, I provide a lever M , pivotally mounted to the frame A , as at m . This lever is preferably of an approximate S shape and is pivoted at its upper end to a bar m' , which extends forward and rests upon the table D in proximity to the mold E . A friction-roller k^3 is mounted upon one side of the gear-wheel k' and upon the revolution of the same will come in contact with the upper portion of the lever M and force the same forward, so that the bar m' will be caused to strike the bricks and knock them from beneath the mold E . The friction-roller m' will then come in contact with the lower end of the lever M and cause the lever to assume its normal position and withdraw the bar m' .

It will be apparent from the description that when the mold is in place upon the table and the levers operating the dies are actuated, as described, the lower die will be forced upward to a point on a level with the mold-table and the upper die will pass down through the feeder, carrying the clay about it, and compress the clay in the mold to form bricks. At this point the mechanism carrying the mold will be operated to raise the same and the ejecting-bar will be actuated to push the brick from beneath the mold. The mold is preferably formed with a slightly-beveled under surface, so that it only rests upon the table at its inner edge.

It will be seen from the above description that I have provided a simple yet very effective machine for manufacturing dry-pressed bricks and that the same may be so constructed as to automatically take the clay, press the bricks, and remove the same in a continuous operation.

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

1. In a brick-machine, the combination of an upper die, a lower die, means for reciprocating both the said dies, a mold-table, a mold open at the top for receiving the loose clay to be pressed and adapted to rest upon said table and means for raising the mold after the bricks are pressed, substantially as described.

2. In a brick-machine, the combination with a suitable frame, of dies mounted therein, means for reciprocating the dies, a mold-table mounted in said frame, a mold open at the top and bottom and provided with upper beveled surfaces, a feeder secured to said mold for supplying the same with loose clay, means for raising the mold above the table and means for pushing the bricks from beneath the mold, substantially as described.

3. In a brick-machine, the combination with a suitable frame, of a mold-table, a mold adapted to rest upon said table for receiving material to be pressed, the lower edges of said mold being beveled so as to touch the mold-table at the inner edge, and having

grooves upon its under surfaces for allowing the air to escape from the bottom of the mold, substantially as described.

4. In a brick-machine, the combination with
5 a suitable frame, of reciprocating dies mounted therein, levers pivotally mounted in said frame for operating the dies, a toggle-joint for spreading said levers one of said levers forming one member of said toggle-joint and
10 means connected with the actuating mechanism for operating the said levers, a mold-table mounted in the frame and a mold open at the top for receiving the loose clay and normally resting upon the said table and adapted to
15 receive the dies from the top and bottom for pressing bricks within the same, means for raising the said mold whereby the bricks may be pushed from beneath the same, substantially as described.

20 5. In a brick-machine, the combination with a suitable frame, of upper and lower dies mounted therein, means for reciprocating both of the same, a movable mold, open at top and bottom, to receive said dies whereby clay
25 may be fed in at the top and be pressed into bricks within the same, and means for moving the said mold away from the brick, whereby the same is free to be ejected from the machine beneath the mold, substantially as
30 described.

6. In a brick-machine, the combination with a suitable frame, of reciprocating dies mounted therein, levers pivoted in the said frame, for reciprocating the said dies, friction-rollers interposed between said levers and the
35 said dies and a toggle-joint for opening the said levers one of said levers forming one member of said joint and means for actuating the toggle-joint, substantially as described.

7. In a brick-machine, the combination with a suitable frame, reciprocating dies mounted therein, a mold-table, a mold adapted to rest upon said table, a shaft mounted in said
40 frame, levers secured thereto and connected to said mold, an arm upon said shaft, a bar pivotally connected to said arm and provided with a friction-roller at one end, adapted to run upon said frame, a gear-wheel provided
45 with a cam mounted in said frame, said cam being adapted to engage the friction-roller for raising the mold and means for actuating the gear-wheel, substantially as described.

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

HENRY C. BARKER.

Witnesses:

S. M. HODGES,
EUGENE J. VARNON.