(No Model.)

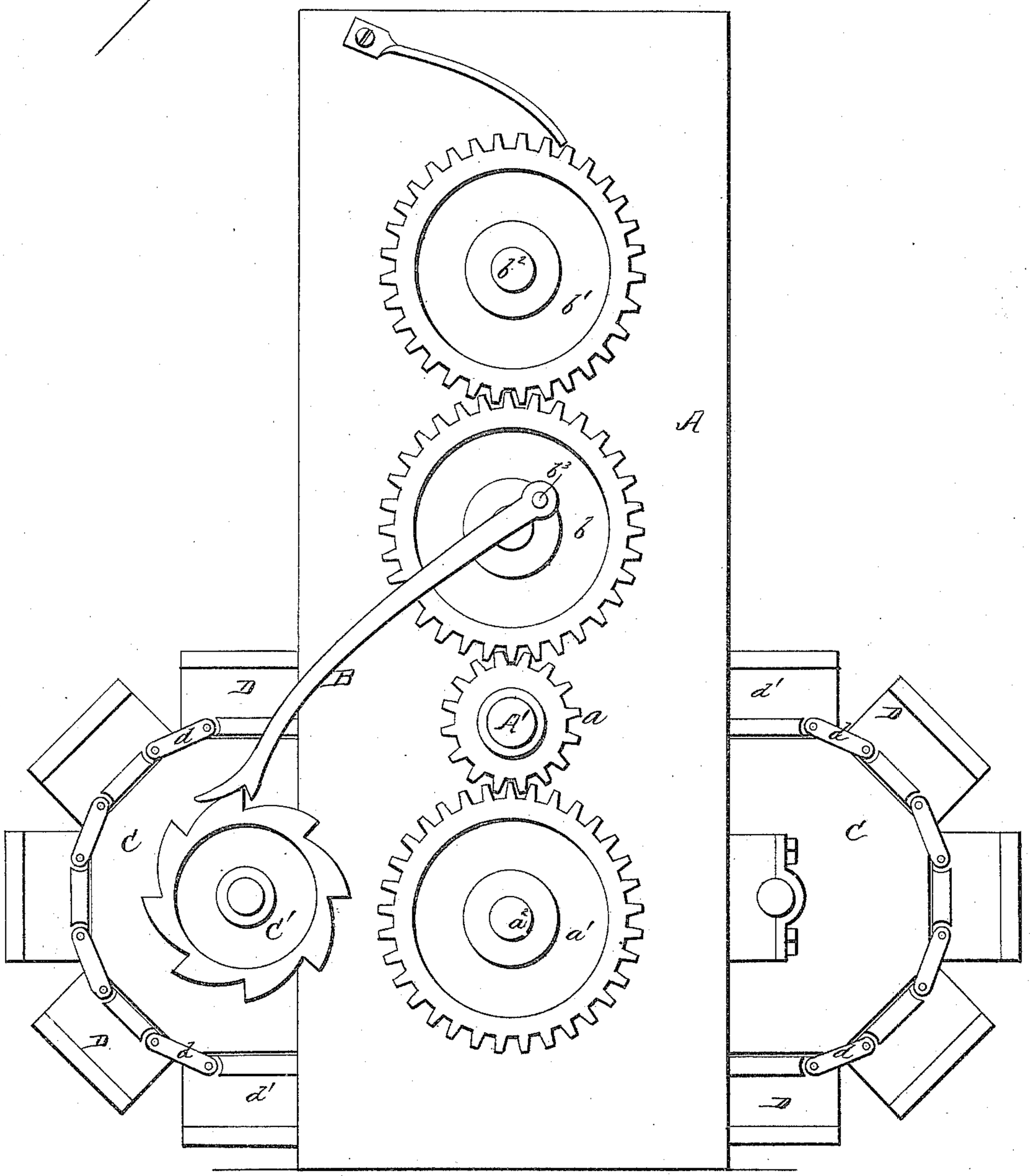
3 Sheets—Sheet 1.

F. C. BURRELL.

BRICK MACHINE.

No. 302,887. Patented Aug. 5, 1884.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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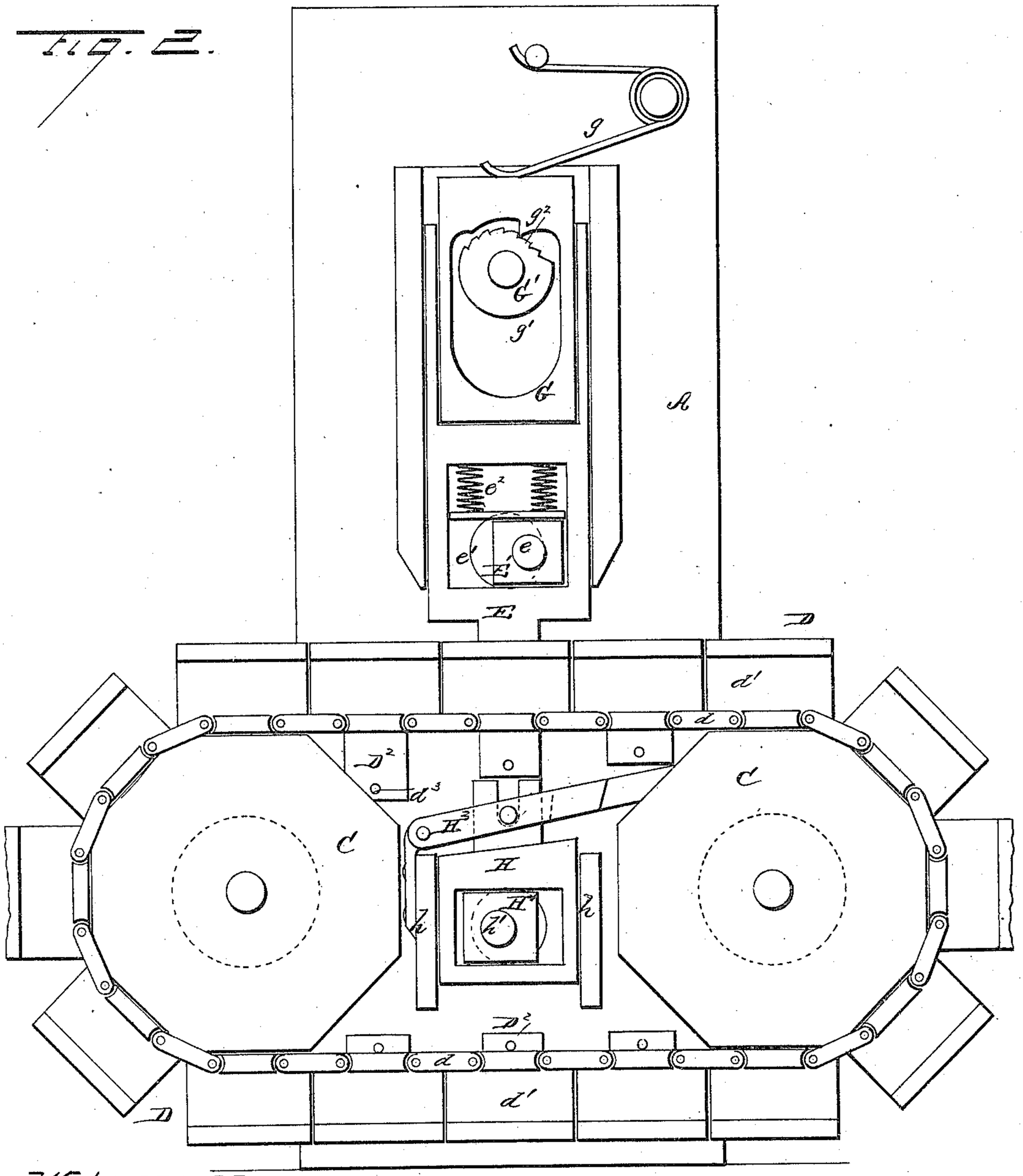
Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

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BRICK MACHINE.

No. 302,887. Patented Aug. 5, 1884.

Fig. 3.

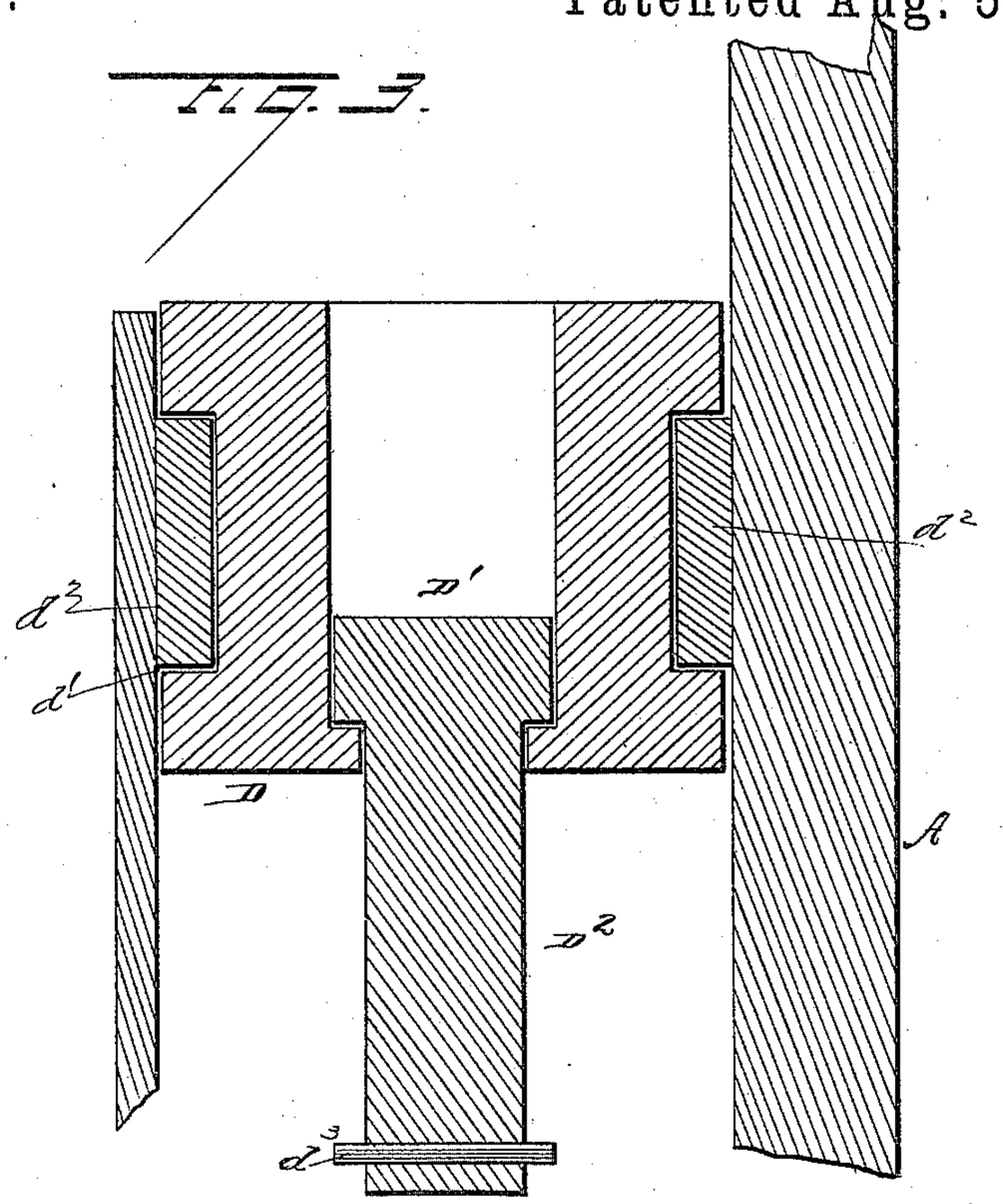
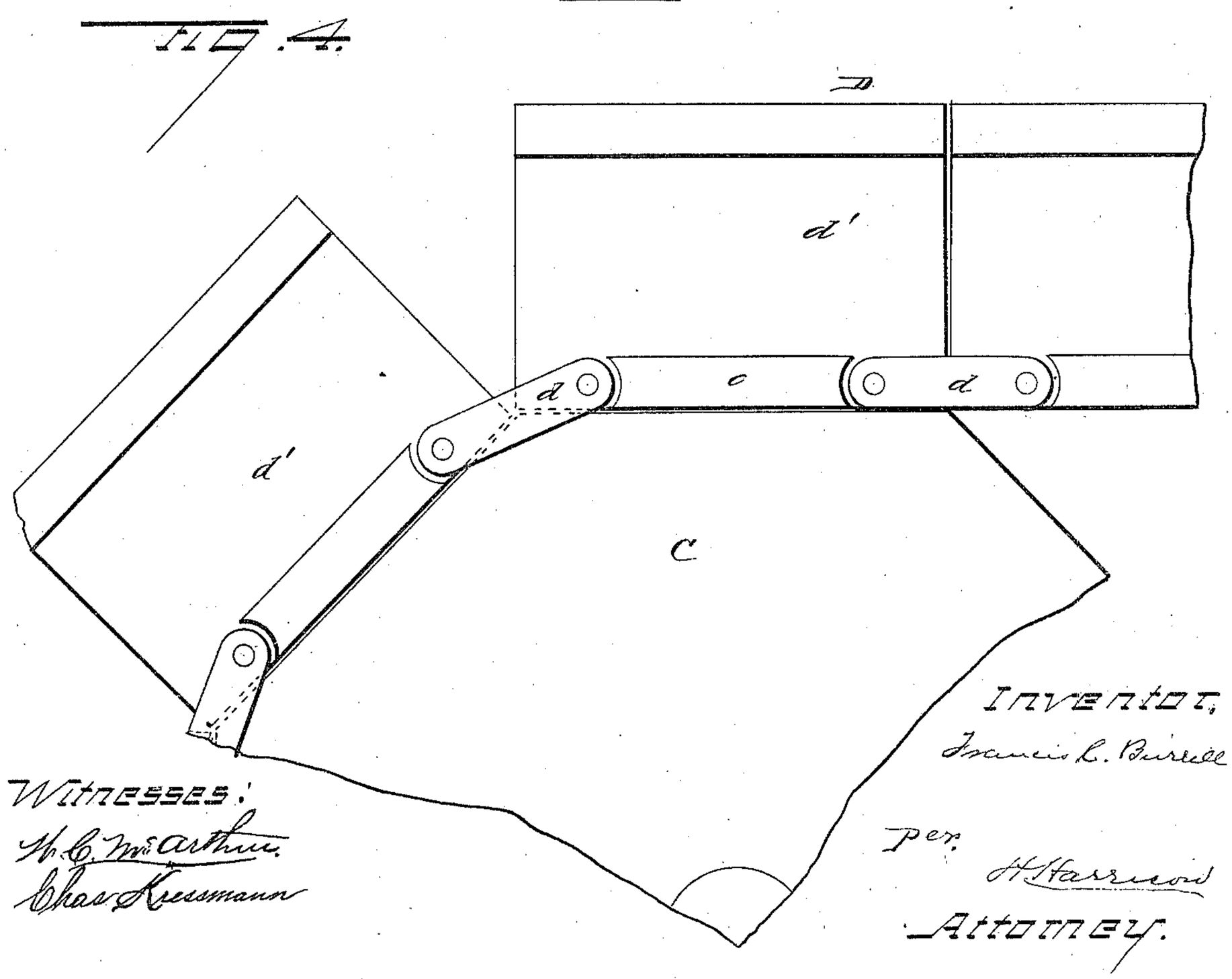


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANCIS C. BURRELL, OF LA SALLE, ILLINOIS.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 302,887, dated August 5, 1884.

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

To all whom it may concern:

Be it known that I, FRANCIS C. BURRELL, a citizen of the United States, residing at La Salle, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Brick-Machines, of which the following is a specification, to wit:

This invention relates to an improvement in brick-machines; and it consists in the peculiar construction and arrangement of the same, substantially as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figures 1 and 2 are reverse side elevations of my machine. Fig. 3 is an enlarged sectional view of one of the mold-boxes; and Fig. 4, an enlarged side view of one of the wheels carrying the chain of mold-boxes, and the mode of hinging these boxes together.

A represents the main frame of my brick-machine, in which is journaled the driving-shaft A′, carrying the pinion *a*, as seen in Fig. 1. This pinion meshes with a spur-gear, *a′*, located below it, upon a shaft, a^2, and also with a spur-gear, *b*, above it. This latter is an idler, and drives a third gear, *b′*, upon a shaft, b^2, in the upper part of the frame.

C C represent two octagon-shaped wheels located at either end of the main frame, and upon the supporting-shaft of one of them is a ratchet-wheel, C′, operated at regular intervals by a pawl, B, pivoted upon a wrist-pin, b^3, upon the idler *b*. Around the two octagon wheels C C passes a chain of mold-boxes, D D, hinged together by links *d*, and formed with horizontal grooves *d′* in their sides, which run upon guides d^2 on the main frame, and are thus supported between the wheels and held in the proper position for registry with the plunger in its descent.

Upon one side of the main frame, in guides A^2, is arranged the plunger E, which is moved vertically in its guides by means of a wrist-pin, *e*, upon one of the shafts, which works in a boxing, E′, moving across the plunger in an opening, *e′*. This opening is somewhat larger than the boxing E′, and is provided with springs e^2, bearing upon said boxing for a purpose presently seen. The upper end of the plunger is forked and contains the hammer G, forced down by a spring, *g*, as seen in Fig. 2. This hammer is formed with an opening, *g′*, in which revolves a disk, G′, having one side cam-shaped, and provided with a series of teeth or steps, g^2, upon which the hammer rests.

Each mold-box D contains a false bottom or plunger, D′, the shank D^2 of which extends some distance through the bottom of the box, and is provided with a pin, d^3, to prevent its falling out during the passage of the box across the lower side of the machine.

Below the upper line of the mold-chain is arranged a slide, H, in guides *h h* of the main frame, and this also is moved vertically by means of a wrist-pin, *h′*, on one of the main shafts, moving in a boxing, H′, as already described, for the plunger.

Fulcrumed on the guides *h* and hinged to the slide H is a lever, H^2, which extends beyond the slide upon one side and beneath the shanks of the false bottoms D′, as shown, for a purpose presently explained.

The slides, plunger, and hammer, with the mechanism that operates them will of course be covered in, the plates which inclose them having been removed in the drawings to more fully show the operation of all the parts.

The power is applied by a belt-pulley upon the main driving-shaft, and transmitted to the other parts of the machine by the pinion and spur-gears, as will be readily understood. The clay is fed into the mold-boxes from a hopper not shown in the drawings, but located beside the plunger. The mold-box being filled, it is drawn under the plunger, which then descends, while at the same time the false bottom is raised to press the brick from both directions, and this pressure is obtained by a series of sharp blows from the hammer as it falls from point to point on the cam-disk. When the pressure is complete, the bottom and plunger are retracted and the chain of boxes fed along a short distance by the ratchet and pawl. This operation is repeated in the next mold-box, and at the same time the lever attached to the slide lifts the false bottom to raise the pressed brick flush with the upper

surface of its box, where it may be taken off by an attendant.

The number of boxes in the chain may be as many as desired, and the capacity of the machine rendered greater, while its operation is exceedingly simple and effective.

The brick is compressed by a series of smart blows of the hammer, with less power than is required by a steady pressure, while the pressure of the plunger is sufficient to hold the compression thus obtained.

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

1. In a brick-machine, the mold-box and its plungers, in combination with a spring-cushioned device behind the plunger adapted to retain the compression when obtained, and a spring-actuated hammer adapted to obtain the pressure by a series of blows, substantially as and for the purpose set forth.

2. In a brick-machine, a plunger and means for giving it a reciprocating motion, in combination with a spring-actuated hammer contacting with the plunger, and a disk formed with a series of cam-steps, upon which the hammer rests and from which it is dropped to give a succession of compressing-blows upon the plunger, substantially as and for the purpose set forth.

3. In a brick-machine, the mold-boxes D, arranged in an endless chain, in combination with the plunger E, forked at its rear end, and formed with an opening, e', the wrist-pin e, box E′, and springs e^2, and the spring-actuated hammer G, and cam-disk G′, having steps g^2, substantially as and for the purpose set forth.

4. In a brick-machine, a series of mold-boxes, D, arranged in an endless chain, and each provided with an auxiliary plunger, D′ D^2, in combination with the slide H, working in guides h, and actuated by a wrist-pin, h', on one of the main shafts, and the discharging-lever H^2, all constructed and arranged to operate substantially as and for the purpose set forth.

5. In a brick-machine, a main frame carrying suitable driving-shafts connected by pinions and spur-gears, an endless belt of mold-boxes each provided with an auxiliary plunger, and the mold-carrying wheels actuated at intervals by a ratchet and pawl, in combination with a plunger and a hammer adapted to advance this plunger by a series of blows, a slide located below the mold-box, and adapted to advance the auxiliary plunger, and a lever actuated by this slide to discharge the brick, substantially as and for the purpose shown and described.

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

FRANCIS C. BURRELL.

Witnesses:
W. C. BROWN,
J. P. BROWN.