

(No Model.)

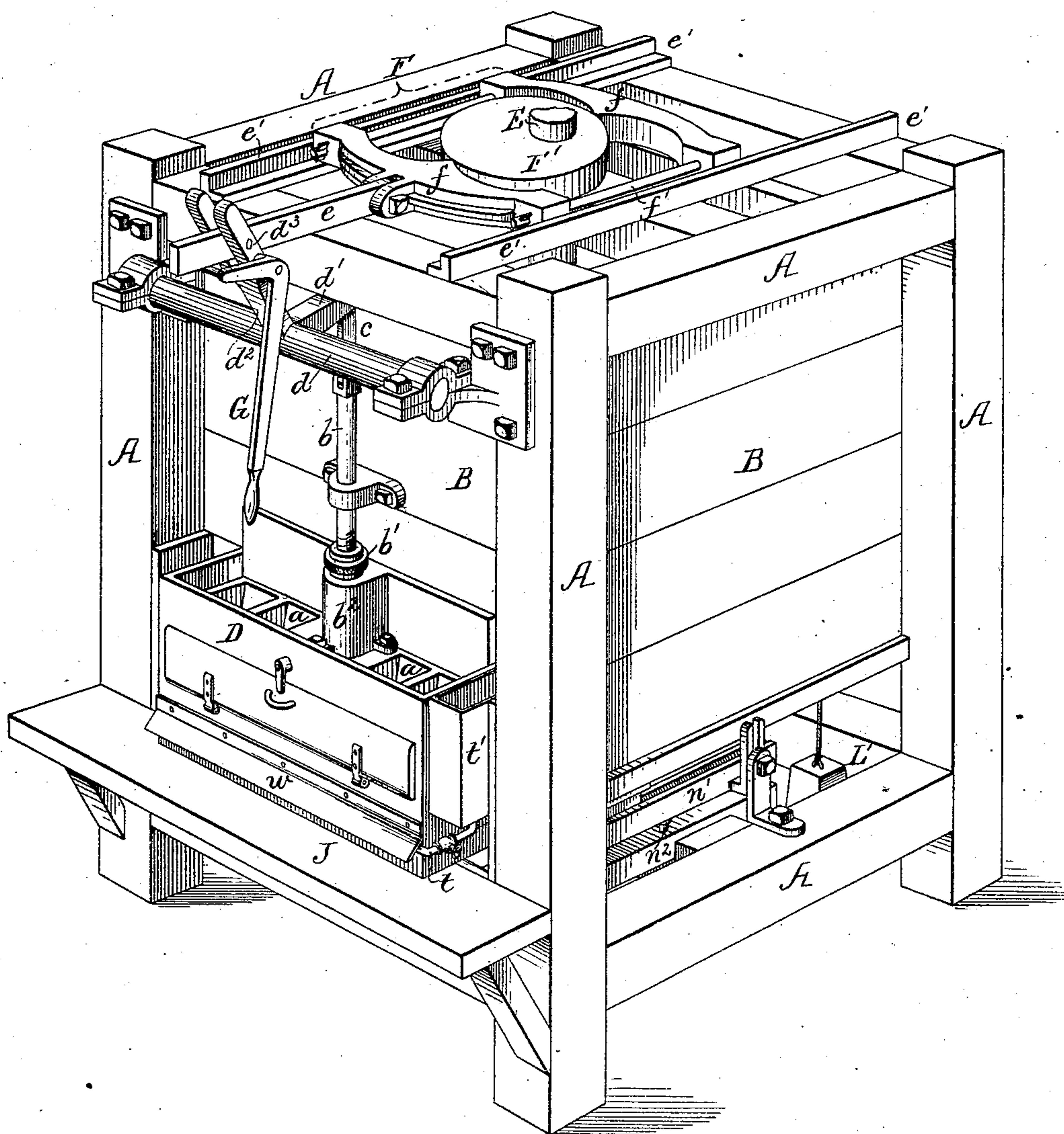
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G. CARNELL.
Brick Machine.

No. 243,505.

Patented June 28, 1881.

FIG. 1.



Witnesses:
James F. Tobin.
James F. McCormick

Inventor:
George Carnell
by his Attorneys
Howson and Sons

(No Model.)

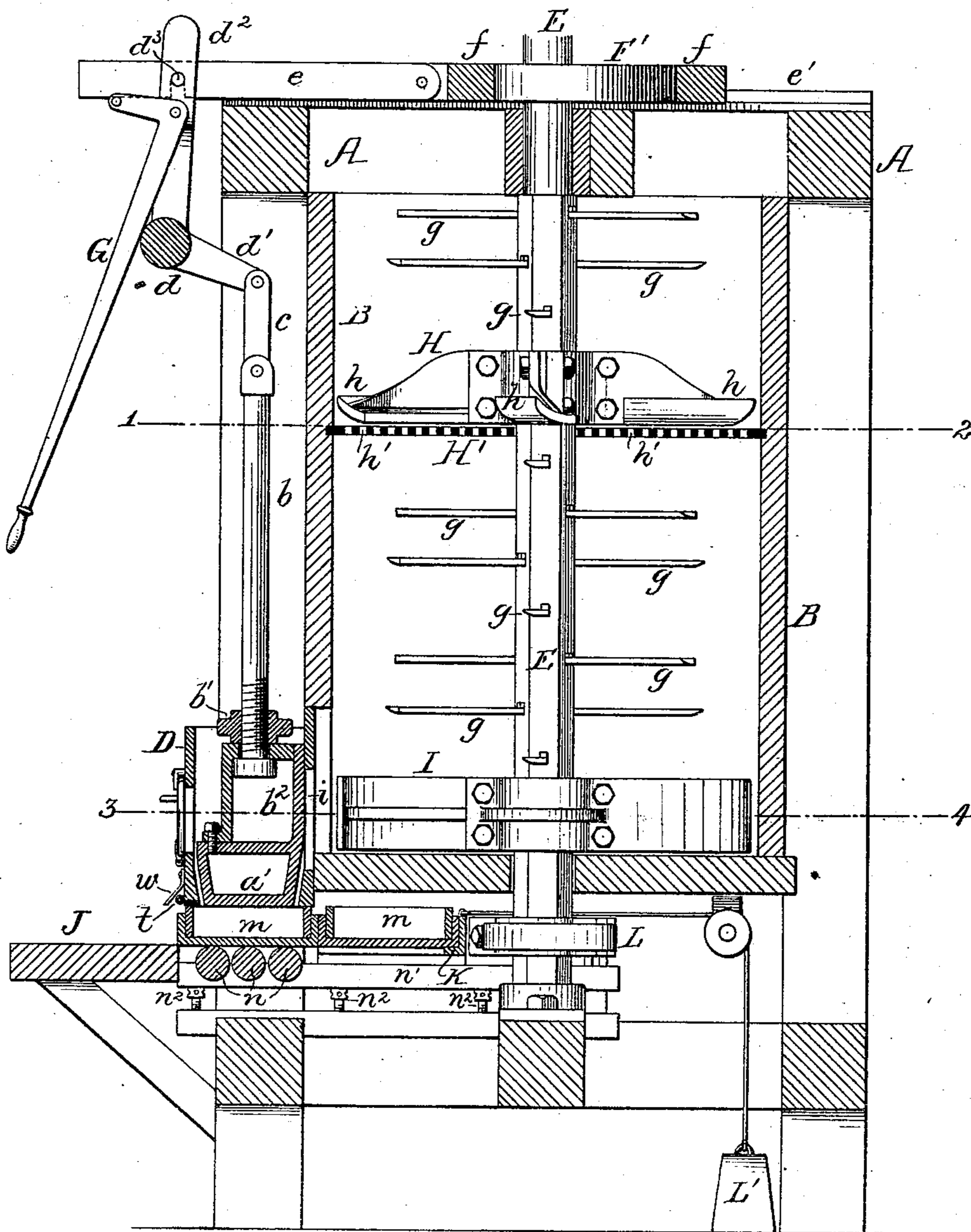
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No. 243,505..

Patented June 28, 1881.

FIG. 2.



Witnesses:

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J. W. Mangin

(No Model.)

4 Sheets—Sheet 3.

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FIG. 3.

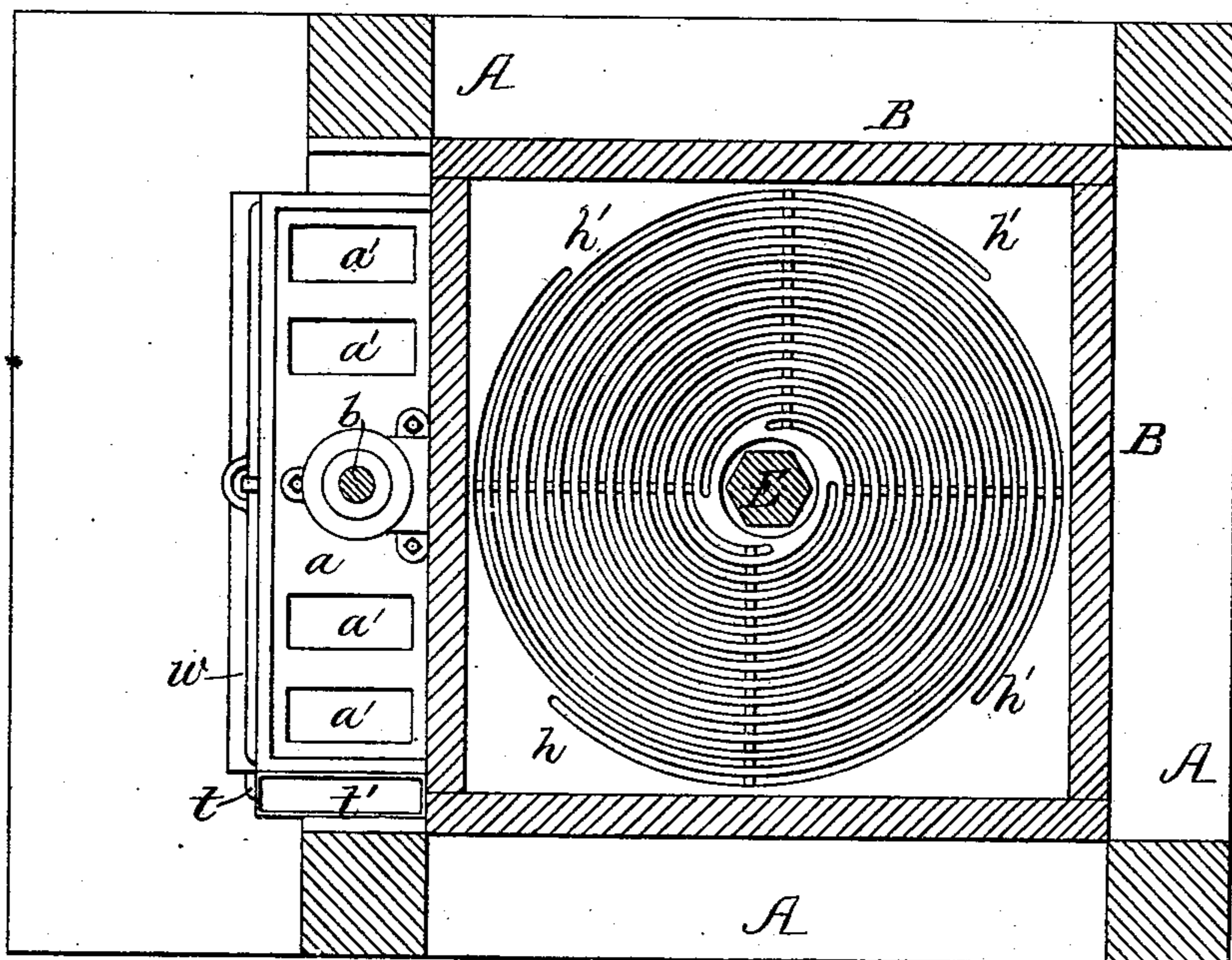
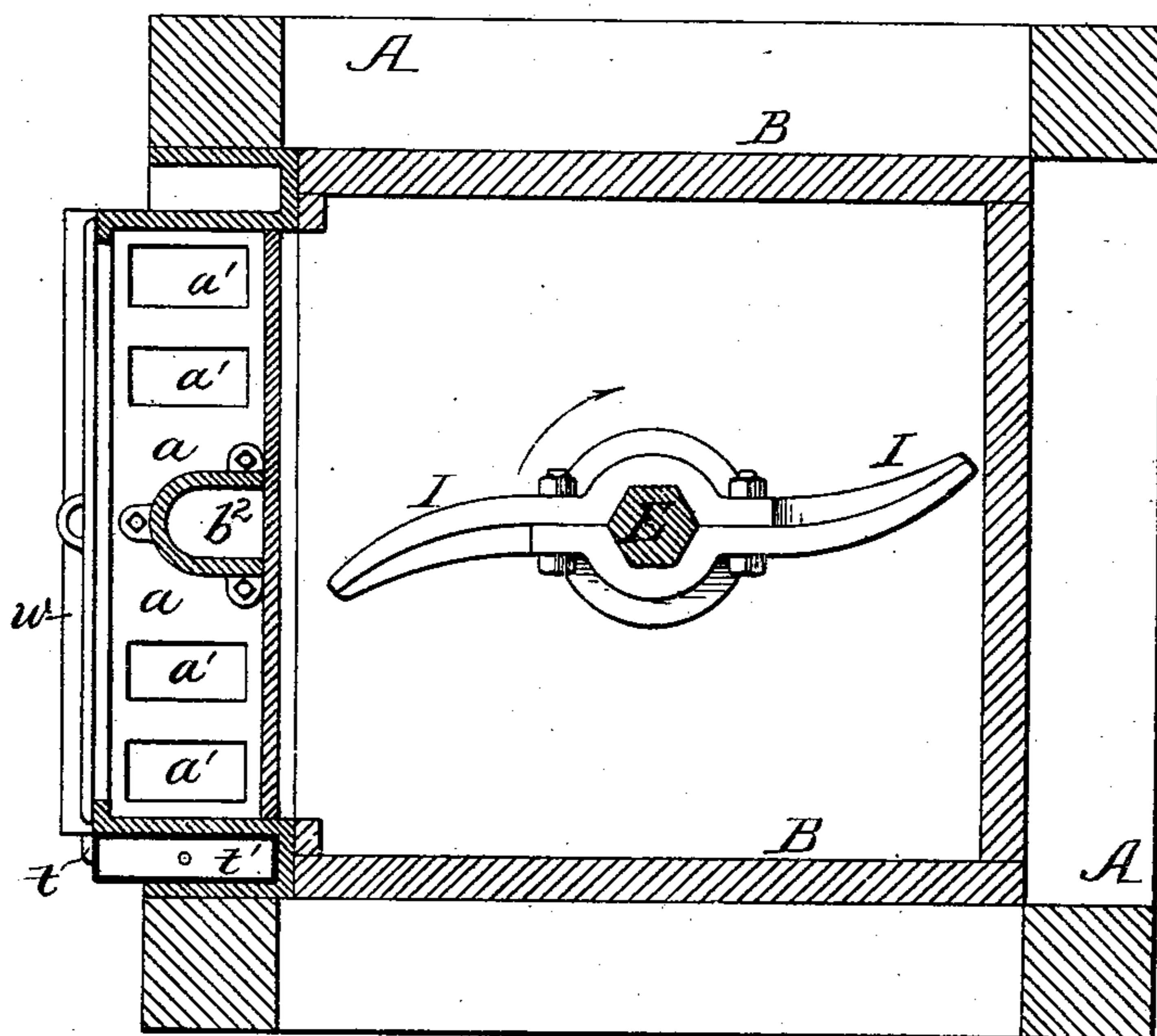


FIG. 4.



Witnesses:

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Inventor:

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Horton and Jones

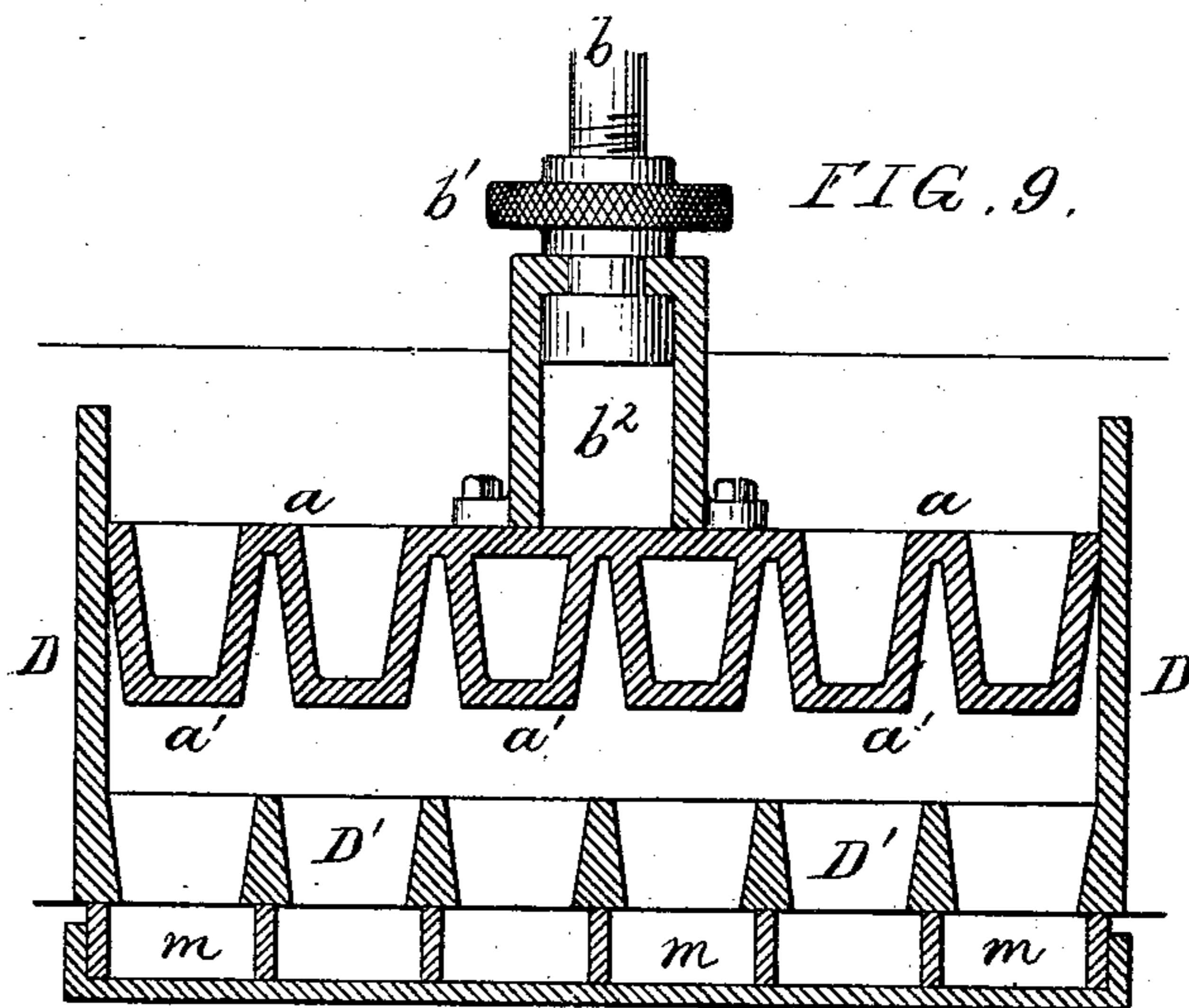
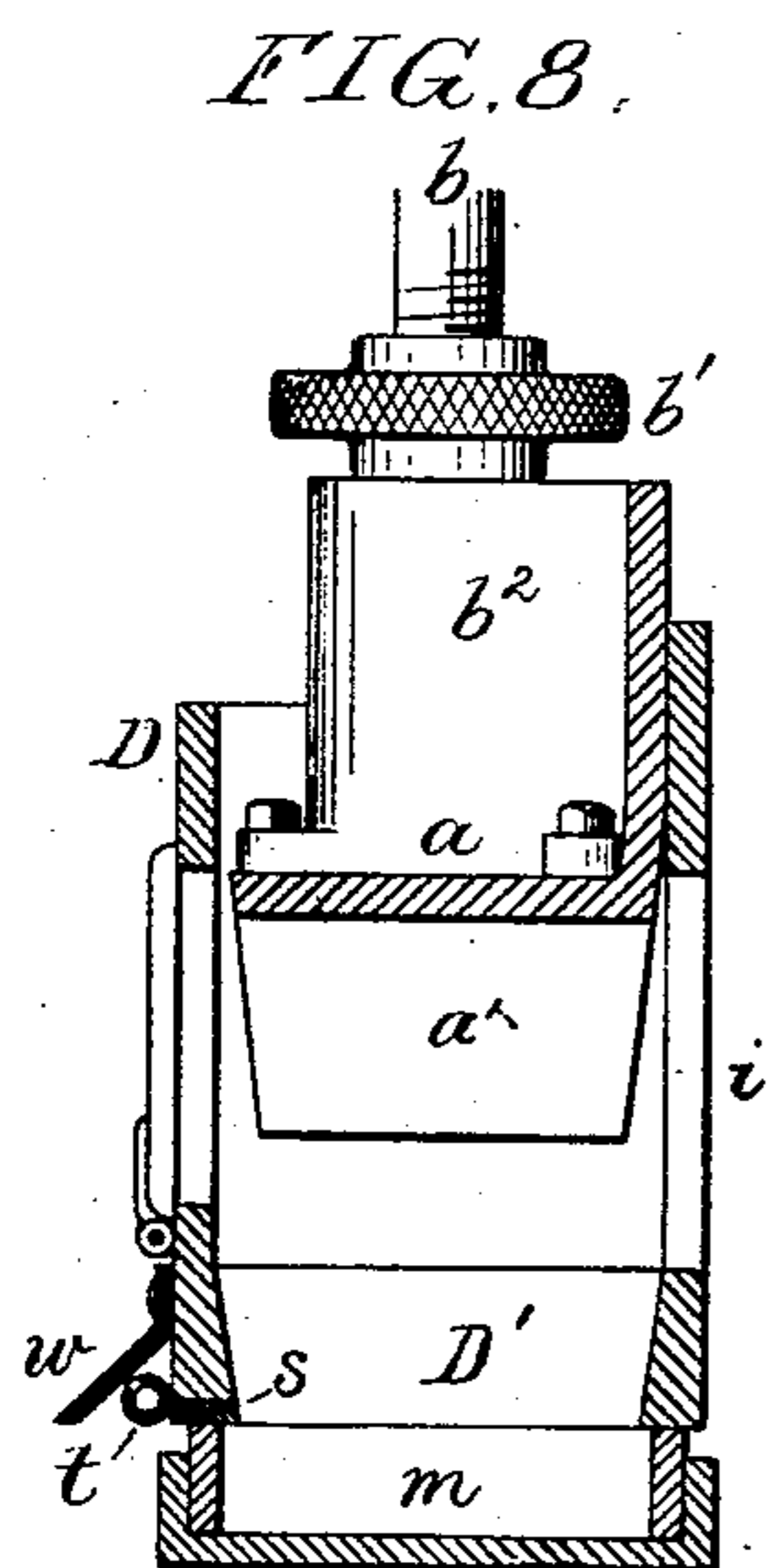
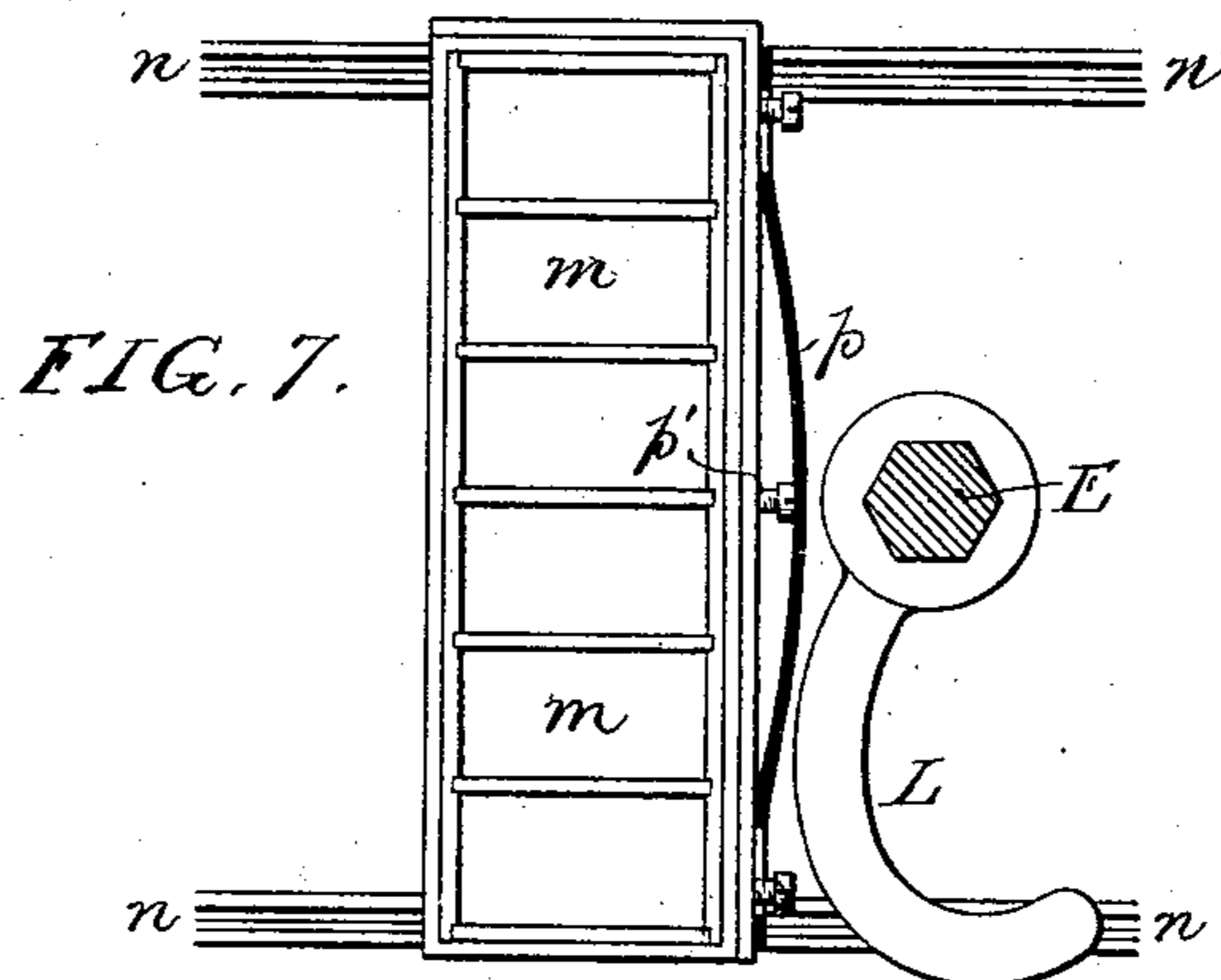
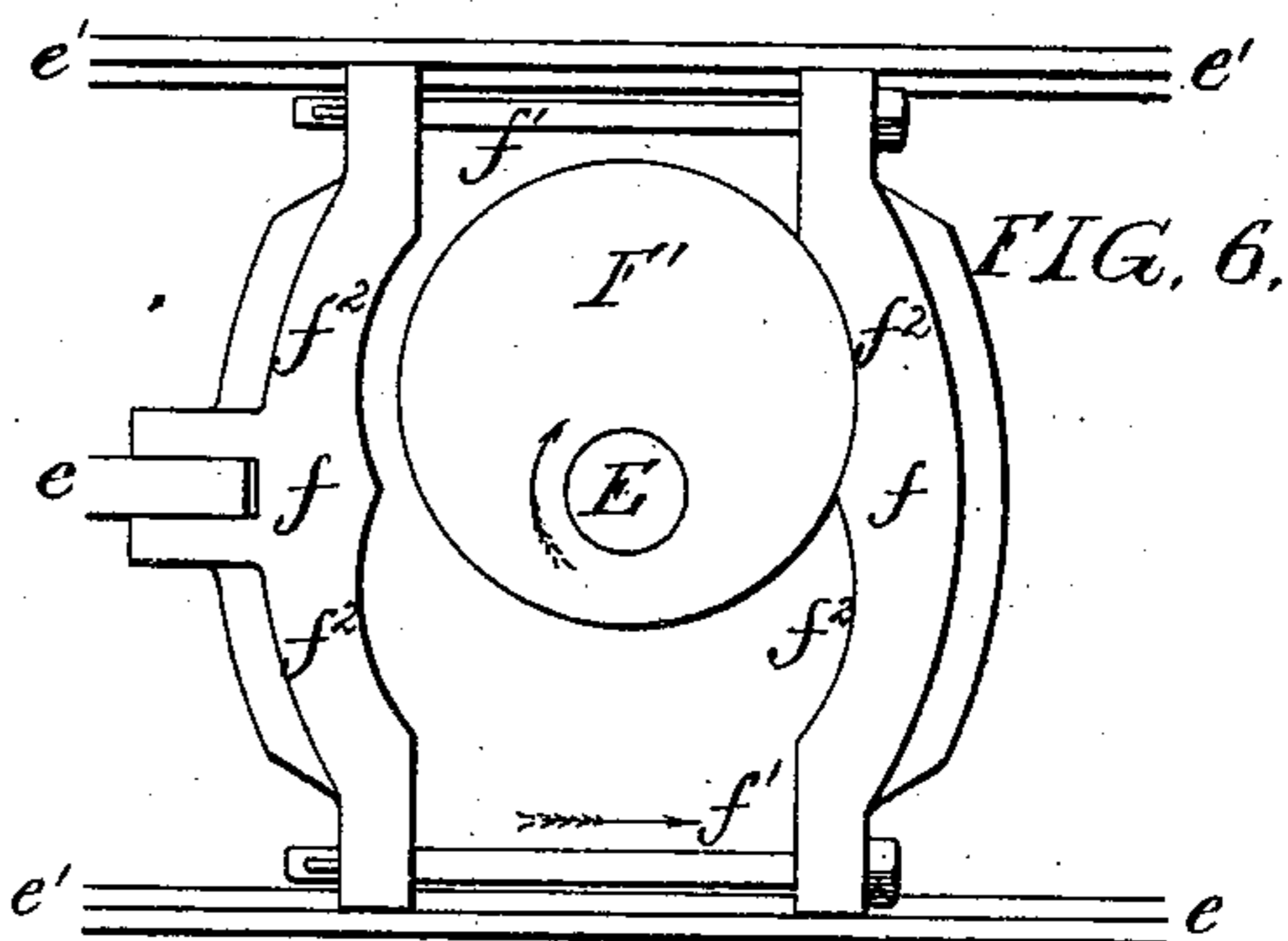
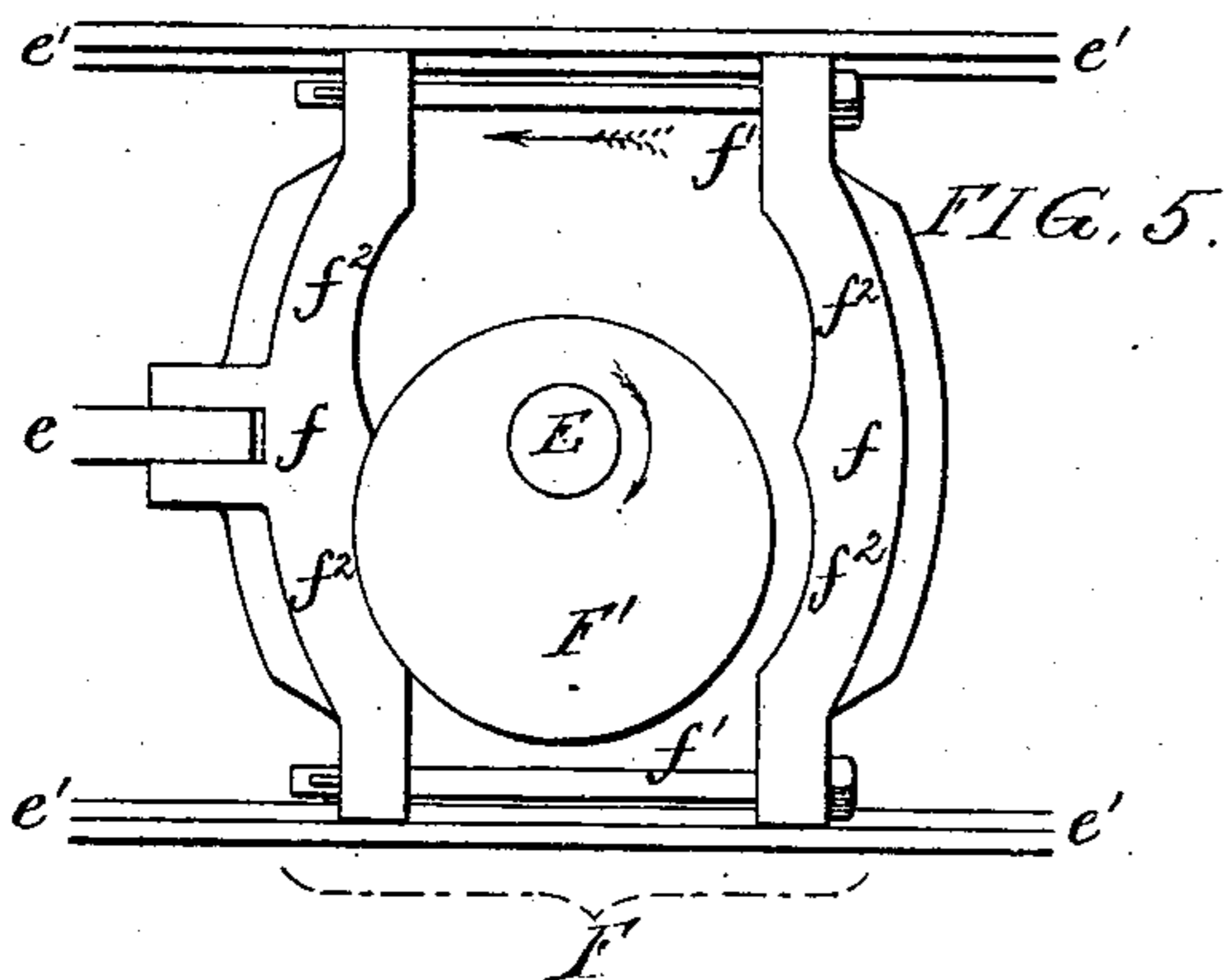
(No Model.)

4 Sheets—Sheet 4.

G. CARNELL.
Brick Machine.

No. 243,505.

Patented June 28, 1881.



Witnesses:

James F. Tobin.
McQuemner

Inventor:
George Carnell
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UNITED STATES PATENT OFFICE.

GEORGE CARNELL, OF PHILADELPHIA, PENNSYLVANIA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 243,505, dated June 28, 1881.

Application filed April 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CARNELL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Brick-Machines, of which the following is a specification.

My invention relates to certain improvements in that class of brick-machines in which the clay is forced from the filler-box by a plun-
10 ger into a series of molds beneath said filler-box, my improvements relating to details in the construction of the machine, too fully described hereinafter to need preliminary explanation.

15 In the accompanying drawings, Figure 1, Sheet 1, is a perspective view of the machine; Fig. 2, Sheet 2, a longitudinal section of the same; Fig. 3, Sheet 3, a sectional plan on the line 1 2, Fig. 2; Fig. 4, a sectional plan on the
20 line 3 4, and Figs. 5, 6, 7, 8, and 9, Sheet 4, detached views of parts of the machine.

A is the frame of the machine; B, the vertical clay-box; D, the filler-box on one side of the same; and E the main driving-shaft, passing vertically through the center of the clay-
25 box, and rotated by power derived from any adjacent shaft.

To the filler-box D is adapted a plunger, *a*, rendered vertically adjustable on a rod, *b*, by
30 means of a nut, *b'*, adapted to the threaded lower end of the rod and bearing on the top of a hollow lug, *b²*, on the plunger. The rod *b* is adapted to a guide on the clay-box, and is connected by means of a link, *c*, to an arm, *d'*, on
35 a rock-shaft, *d*, the latter being adapted to bearings on the frame A, and having a forked arm, *d²*, a pin, *d³*, which engages with a slot in a rod, *e*, hung to a yoke, F, which slides in guides *e'* on the top of the frame, and is acted
40 upon by an eccentric, F', on the main shaft E, so that as said shaft is rotated a vertical reciprocating movement will be imparted to the plunger *a*.

The yoke F consists of end bars, *f f*, and connecting-rods *f' f'*, and in order to permit the
45 movement of the eccentric F' without imparting any lateral movement to the yoke, the said eccentric is adapted to act upon the end bars, *f*, of the yoke only, and the latter have segmental recesses *f²* formed in them to prevent
50 the eccentric from becoming jammed between

the said end bars as it rotates. (See Figs. 1, 5, and 6.)

When it is desired to stop the reciprocation of the plunger *a* without interfering with the
55 movement of the shaft E, the rod *e* is elevated so as to free the slot in said rod from the pin *d³* of the arm *d²*, the elevation of the rod being effected by manipulating a lever, G, hung to the arm *d²*, the short arm of this lever having
60 a projecting pin, on which the rod *e* rests.

The shaft E has within the clay-box the usual tempering blades or arms *g* and two pressers, H and I, the presser H being located immediately above a slotted partition, H', in
65 the clay-box, and the presser I being at the bottom of said box. The presser H has curved plates *h*, which, as the presser revolves, tend to force the clay downward through the slots *h'* in the partition H'. Stones or other hard
70 particles which are too small to interfere with the formation of the brick or the operation of the pressing mechanism will be forced through the slots *h'* with the clay, but larger stones or
75 other foreign matters will be carried around by the blades *h*, as they cannot pass through the slots. In order to dispose of these larger particles and prevent them from accumulating on
80 the top of the partition I make the slots in the latter in the form of scrolls, there being in the present instance in the partition four independent scroll-slots, terminating, respectively,
85 in the four corners of the clay-box, as shown in Fig. 3, so that stones, under the influence of these scroll-slots, will, as they are carried around by the blades *h*, be thrown outward, and will
90 finally be deposited in one or other of the corners of the box, out of the path of the blades *h*, the accumulated stones in the corners of the box being removed at intervals by the attendant.

The presser I, Fig. 4, consists simply of a cam-blade, adapted to force the clay through
a side opening, *i*, in the clay-box and into the filler-box D, where it is acted upon by projec-
95 tions *a'* of the plunger *a*, and is forced through the grating D' at the bottom of the filler-box into the series of molds *m* beneath said grating. The molds *m* are preferably of a character similar to that described in a separate
100 application filed by me on the 9th day of February, 1881, although my machine is adapted

for use in connection with any mold having a series of openings side by side, so as to form a series of bricks at each operation of the plunger.

5 The molds *m* rest upon rollers *n* carried by bars *n'*, which are adjustable in respect to the frame of the machine, in order that a proper joint between the tops of the molds and the bottom of the filler-box grating *D'* can always
10 be maintained, the adjustment in the present instance being effected by set-screws *n*². When one set of molds is filled it is pushed from beneath the filler-box and onto a platform, *J*, by the action of a fresh set of molds on a carriage, *K*, the latter being adapted to suitable guides in the bars *n'*, and being actuated by a
15 cam, *L*, on the shaft *E*. As soon as the new set of molds is adjusted to its place beneath the filler-box the carriage is retracted by the action of the weight *L'*, and a fresh set of
20 molds is slipped laterally onto the said carriage prior to a repetition of the operation. The cam *L* acts upon a spring, *p*, on the carriage *K*, as shown in Fig. 7, this spring bearing upon
25 a central set-screw, *p'*, but being free to yield at each end, so as to lessen the shock caused by the first contact of the cam *L*, the adjustment of the set-screw *p'* serving to govern the limit of movement of the carriage *K* by the cam *L*, so that
30 the depositing of the molds *m* exactly under the center of the filler-box is insured. As the molds are pushed from under the filler-box the bricks are leveled by the action of the plate *s*, which is let into the filler-box grating, and
35 forms part of the bottom edge of the same. (See Fig. 8.) It will be observed that this cutting-plate *s* overhangs the outer edges of the molds, so that when said molds are pushed from under the filler-box the plate commences
40 to act upon the surface of the brick at some distance from the edge of the same, and there is not that tendency to tear the clay away from the end of the mold which exists when the cutting-plate commences to act upon the
45 extreme edge of the brick. As the molds pass from under the filler-box the upper faces of the bricks are moistened by a stream of water from a pipe, *t*, communicating with a reservoir, *t'*, at the end of the filler-box, and the
50 moistened faces of the bricks are then smoothed by the action of a scraping-plate, *w*, secured to the side of said filler-box.

By providing the plunger *a* with projections *a'*, adapted to the openings in the grating *D'* of the filler-box, almost the entire body of clay 55 in the filler-box is forced therefrom into the molds on the downward stroke of the plunger, so that there is not left in the filler-box or grating a large mass of clay, from which the bricks must be forcibly separated on pushing 60 the molds from beneath the filler-box. The tearing of the clay from the molds and the formation of defective or imperfectly shaped bricks is thus prevented.

I claim as my invention—

1. The combination of the shaft *E* and its eccentric *F'* with a sliding yoke, *F*, having recessed end bars, *f*, as set forth. 65
2. The combination of the plunger-rod *b*, rock-shaft *d*, having arm *d*², with pin *d*³, the yoke *F*, the slotted connecting-rod *e*, and the lever *G*, hung to the arm *d*², and adapted to elevate the rod *e*, as set forth. 70
3. The combination of the clay-box, the shaft *E*, the presser *H*, and the partition *H'*, having scroll-slots *h'*, as set forth. 75
4. The combination of the mold-carriage, having a spring, *p*, with the operating-cam *L*, adapted to act upon said spring, as specified.
5. The combination of the operating-cam *L* 80 with the mold-carriage *K*, its spring *p*, and set-screw *p'*, as set forth.
6. The combination of the molds with a filler-box, having on its under edge a cutter-plate, *s*, adapted to overlap the outer edges of 85 the molds, as set forth.
7. The combination of the filler-box with the sprinkling-tube and scraper-plate, whereby the surfaces of the bricks are smoothed as the molds are moved away from the filler-box, as 90 specified.
8. The combination of the filler-box, its grating *D'*, the molds, and mechanism for moving the molds beneath the box, with the plunger *a*, having projections *a'*, adapted to the open- 95 ings of the filler-box grating, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE CARNELL.

Witnesses:

ARMER F. MCCORMICK,
HARRY SMITH.