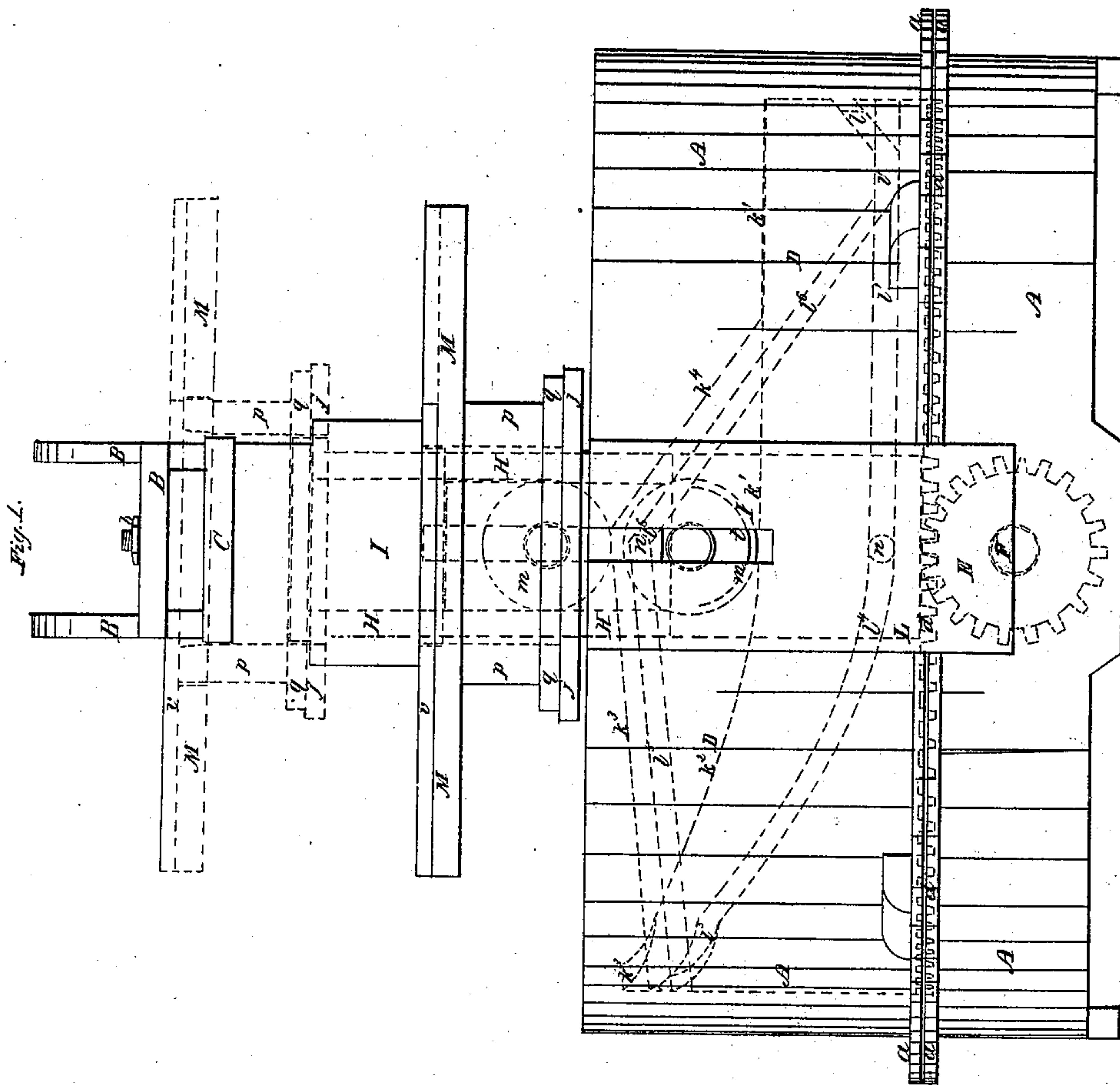


J. N. SMITH.
BRICK MACHINE.

No. 62,782.

Patented Mar. 12, 1867.



Witnesses

J. Fraser
E. Brown.

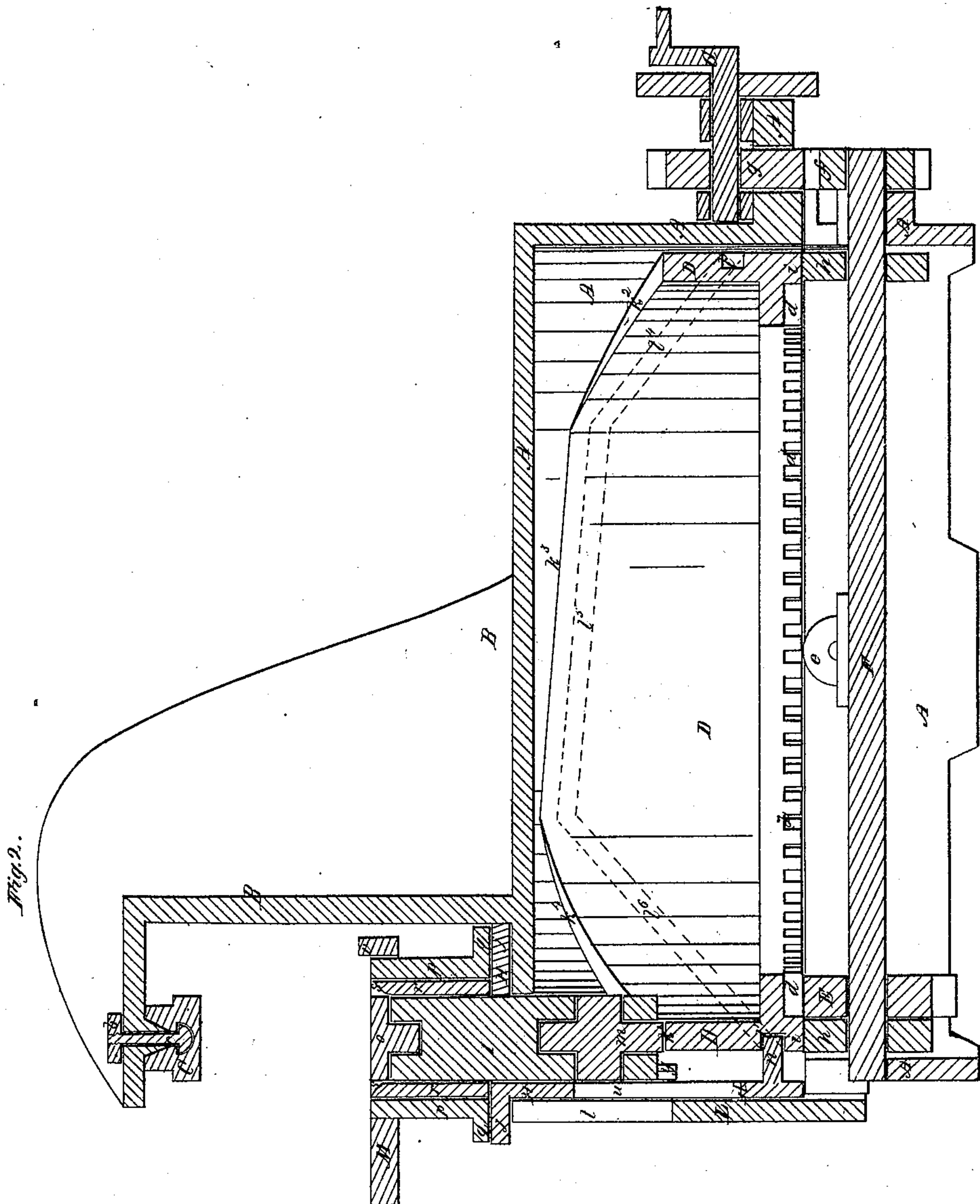
Inventor.

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Fig. 3.

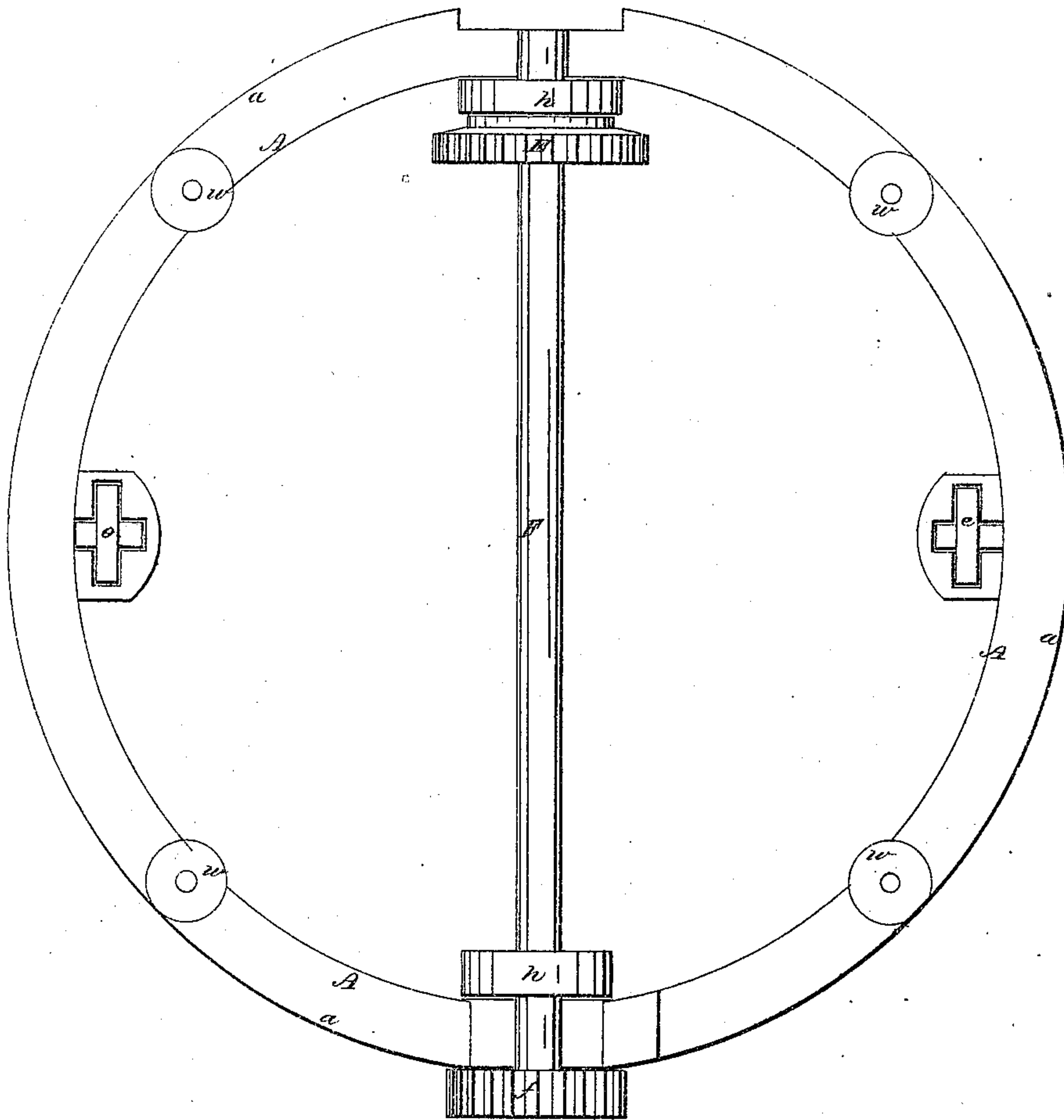
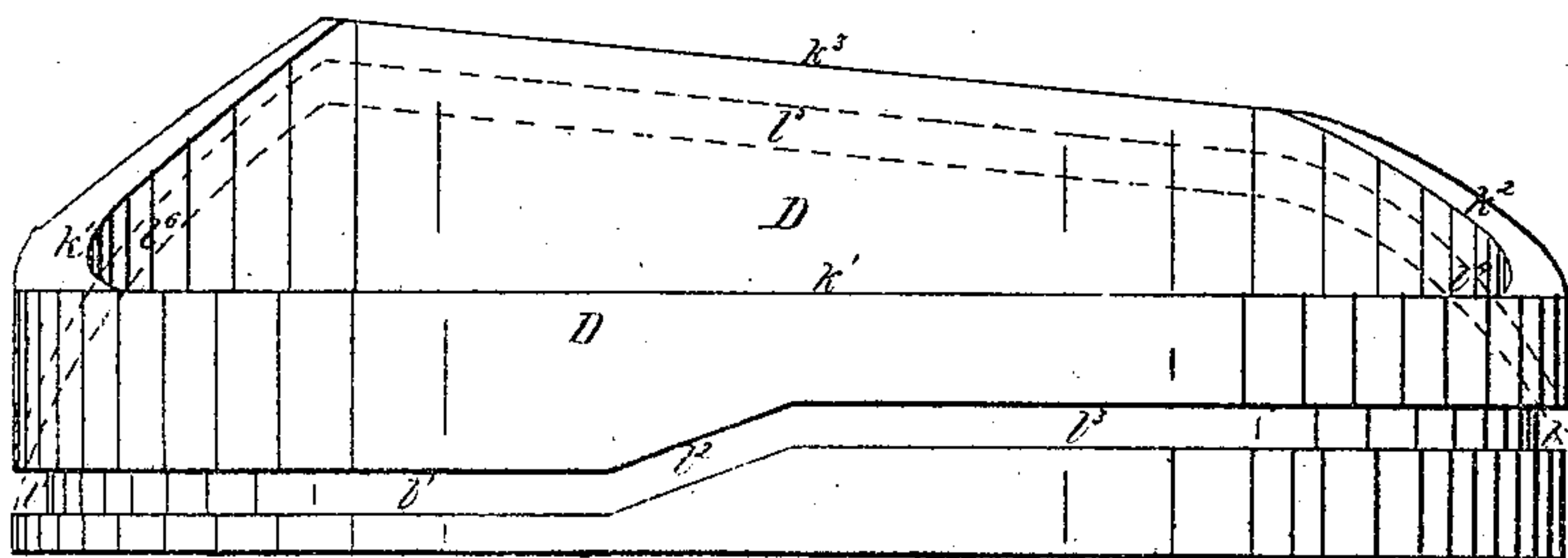


Fig. 4.



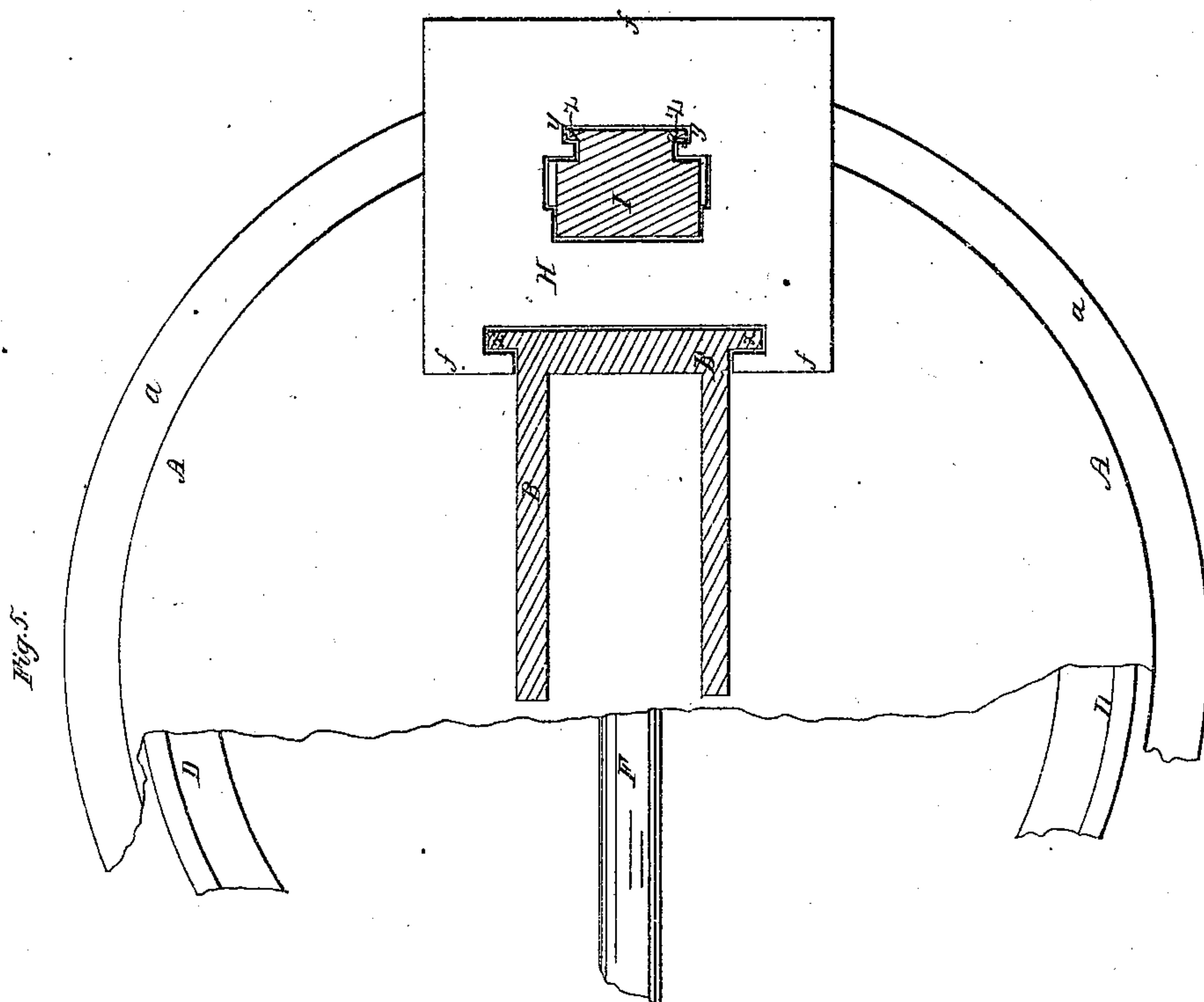
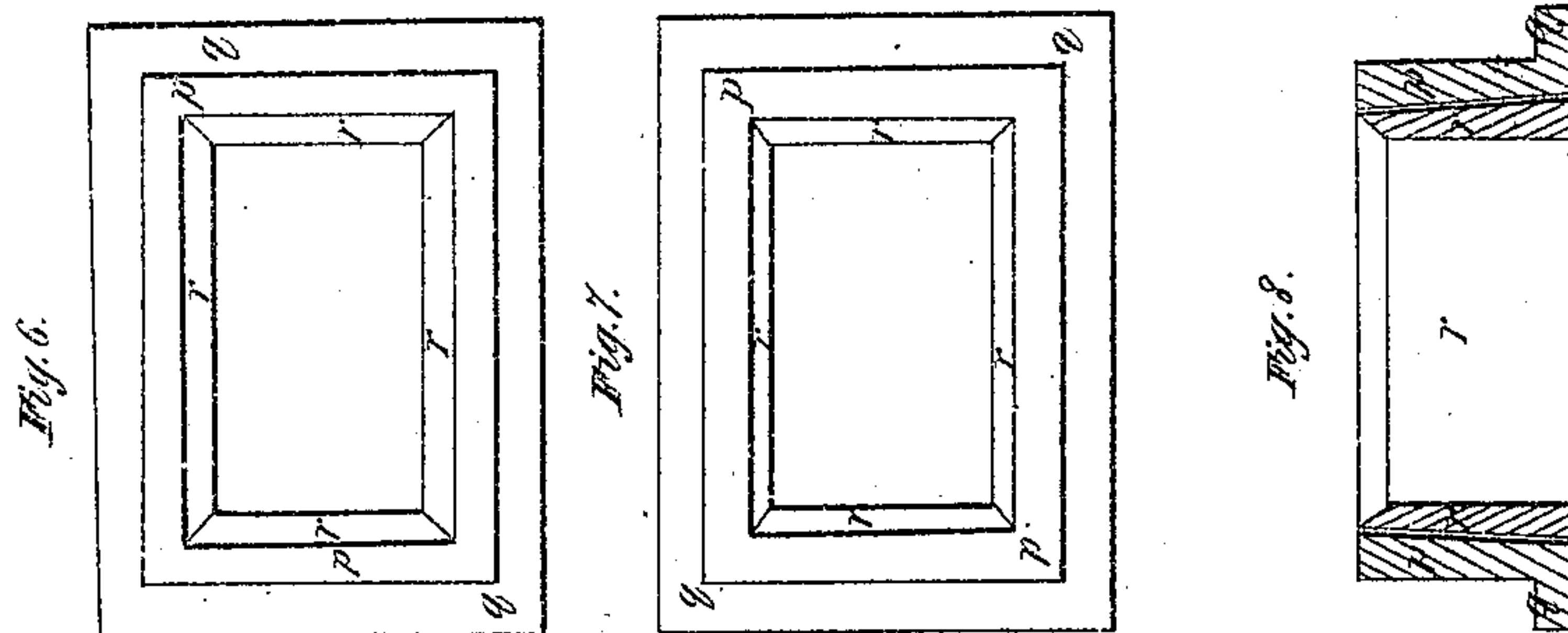
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Inventor:
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United States Patent Office.

J. NOTTINGHAM SMITH, OF JERSEY CITY, NEW JERSEY.

Letters Patent No. 62,782, dated March 12, 1867.

IMPROVED BRICK MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, J. NOTTINGHAM SMITH, of Jersey City, in the county of Hudson, and State of New Jersey, have invented an Improved Brick Press; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a front elevation of the machine, some of the interior parts also being indicated in colored lines.

Figure 2, a central vertical section of the same from front to rear.

Figure 3, a plan of the lower division of the case, together with the driving-shaft and gearing.

Figure 4, elevation of the revolving wedge which actuates the press.

Figure 5, a top view of the machine, some parts being shown in horizontal section, and some parts being broken away.

Figures 6 and 7, top views of the pressing mould, one varied somewhat in construction from the other.

Figure 8, a central longitudinal vertical section of the mould as in fig. 7.

Like letters designate corresponding parts in all of the figures.

The main feature in this invention is an annular wedge, D, which is caused to revolve, by suitable driving power, within a frame or case, and operates both the brick-mould and plunger, substantially as hereinafter specified. I find it preferable to employ a close case, A, in which the wedge D revolves, and on which the other parts of the machine are mounted; but an open frame may be used in its stead. The case A may be made in two parts, the upper part bolted or otherwise secured to the lower, by means of the flanges *a a* and bolts or screws, as represented. This is for convenience in inserting the annular wedge and in mounting other parts. The top may be covered; and upon it is located the strong, firm standard or neck B, cast with or bolted to the case. To this neck is secured the stationary bed or block C, against which the bricks are pressed by the action of the plunger I, forced upward from below by the wedge D. This bed is suspended in the right position by a bolt, *c*, and nut, *b*, substantially as represented. The wedge D revolves closely inside of the case A, being guided laterally therein by friction-rollers, *w w*, fig. 3, and supported strongly by rollers, *e e*, mounted in the case A, and by other rollers, *h h*, which turn on the driving-shaft F. Within the bearing rim *i*, which rests on these rollers, a set of cogs or gear-teeth, *d*, is formed in the lower edge of the wedge, and into these cogs a cog-wheel, E, on the shaft F gears and causes the wedge to revolve in the proper direction. On the outer end of the driving-shaft F is a pinion, *f*, into which another pinion or cog-wheel, *g*, on the crank or other power shaft G gears. The upper surface *k* of the wedge D operates the plunger or piston I of the press, a friction-roller, *m*, in the lower end of the plunger, resting on the said wedge surface. A cam groove, *l*, in the outer periphery of the wedge, lifts and lowers at the proper times the mould-carrier H, by the means of a projecting pin, *n*, on the carrier, which runs in the said cam groove. The upper cam surface *k*, and the cam groove *l*, act in harmony, to produce the motions required for the pressure. Thus, as indicated in the drawings, the respective portions *k* and *l* simply, of each, bring the plunger and carrier down to their lowest positions, the top of the plunger then being just flush with the top of the mould, as shown in fig. 2, when the brick just pressed can be slid away over the table M, secured to the upper edge of the mould, and another brick moved into place ready to be pressed. Then, while the face *k* still retains the plunger at its lowest position, a short ascending portion, *l*¹, of the groove raises the mould sufficiently to enclose the brick therein, and the level portion *l*² of the groove retains the mould at that height till the ascending face *k*² begins to raise the plunger and the brick thereon up nearly to the bed C, when, during this ascent of the plunger with the bricks, the ascending portion *l*² of the groove raises the mould as fast as or faster than the plunger. Then the gradually-inclined portion *k*³ gives a powerful pressure to the brick against the bed C, while the groove portion *l*² keeps the mould at the same relative height as the plunger. Finally, the declining portions *k*⁴ and *l*³ bring both plunger and mould back to the original position, ready for making another revolution of the wedge and pressing another brick. More than one brick can be pressed at each revolution of the wedge by duplicating or triplicating the plunger mould and bed. The mould-carrier is guided in its place by notches in the upper plate *j j* thereof, claspings wings, *x x*, fig. 5, on the sides of the neck B; and the plunger is guided in the carrier by its rectangular form, and by grooves and projections, *y y* and *z z*, as seen in the same figure. The mould is composed of a strong outer box, *p*, bolted or screwed by its flanges, *g g*, to the flanch-plate *j* of the carrier. Inside of this box four chilled cast-iron

plates, *r r*, are placed, fitted in by mitred joints at the corners, and held from drawing out by the box *p* being a little larger, and these plates a little thicker at the bottom, as seen in figs. 7 and 8. Thus no screw or other positive means is required to keep the plates in position, and they can be inserted and renewed by taking off the box *p p* from the carrier. The top of the plunger *I* may have a cap, *o*, of chilled cast iron, removable at pleasure. The table *M* has the portion at the right (fig. 1) from which the impressed bricks are slid upon the plunger a little higher than the left-hand portion upon which the pressed bricks are slid off, for convenience in handling. There is a lip or ledge, *v*, back of the low portion of the table.

The several parts of the machine may vary considerably from the description above given, provided no substantial departure from the invention is made.

What I claim as my invention, and desire to secure by Letters Patent, is—

The revolving annular wedge *D*, applied to a brick press, and constructed and operating substantially as and for the purpose herein specified.

I also claim the mould-carrier *H*, in combination with the annular wedge *D*, substantially as herein set forth.

I also claim the plunger *I*, in combination with the annular wedge *D*, substantially as herein described.

I also claim the combination and arrangement of the mould-carrier *H*, plunger *I*, and annular wedge *D*, substantially as herein specified.

I also claim the combination of the suspended bed *C*, in combination with the mould-carrier *H*, plunger *I*, and annular wedge *D*, substantially as herein set forth.

I also claim the mould with chilled cast-iron plates *r r*, applied substantially as herein described.

J. NOTTINGHAM SMITH.

Witnesses:

WM. F. BROWNE,

THOS. E. WHITING.