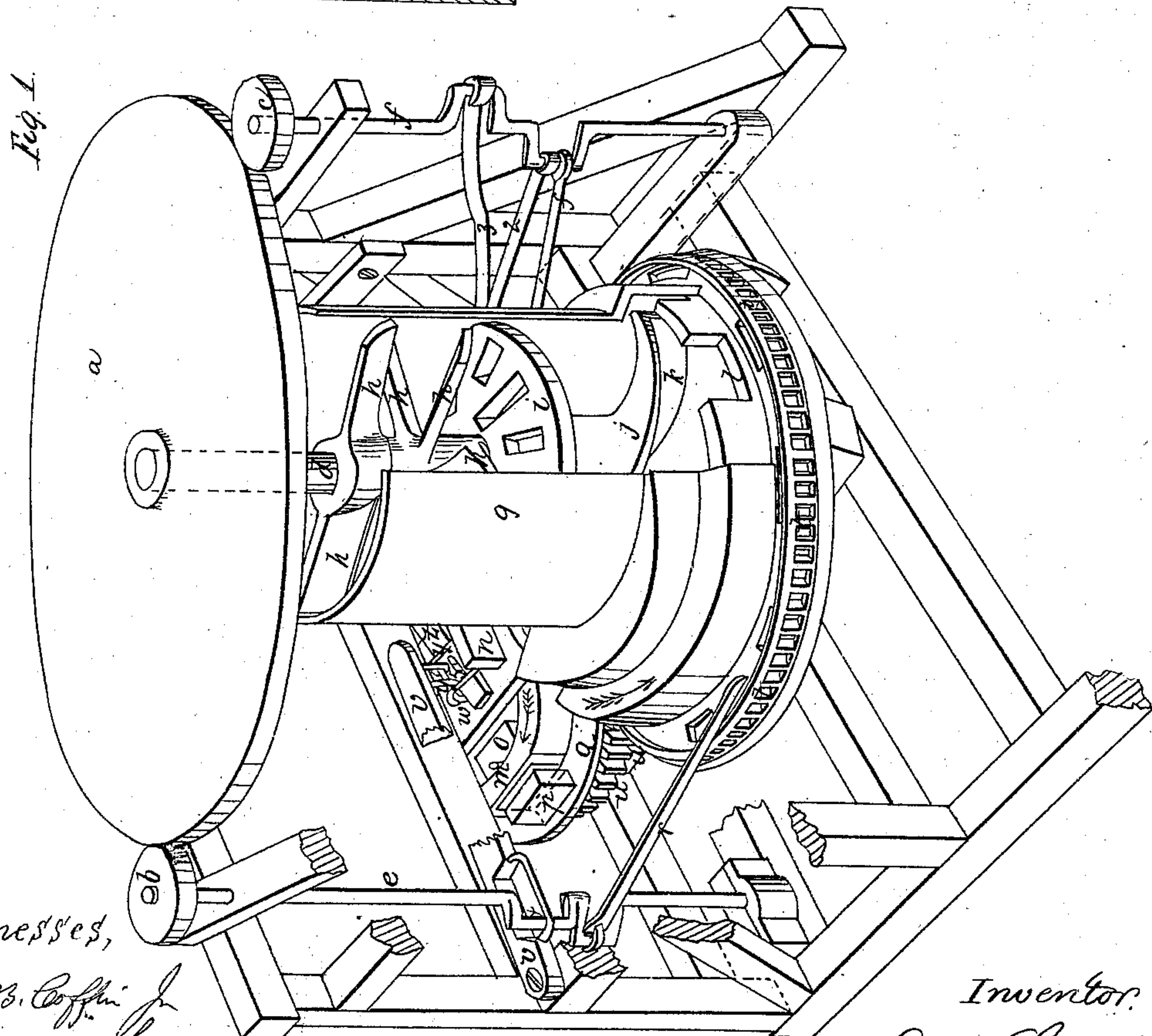
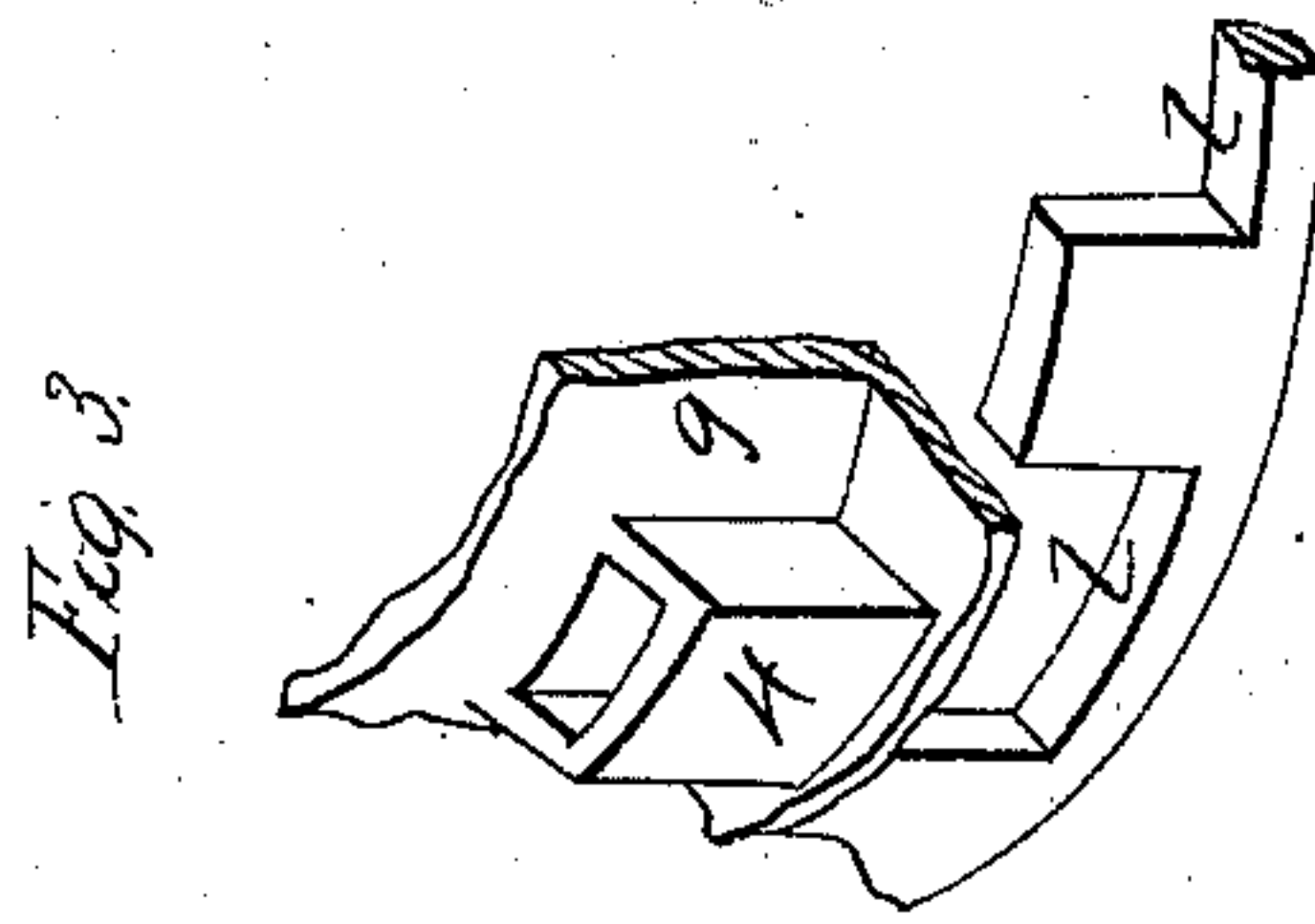
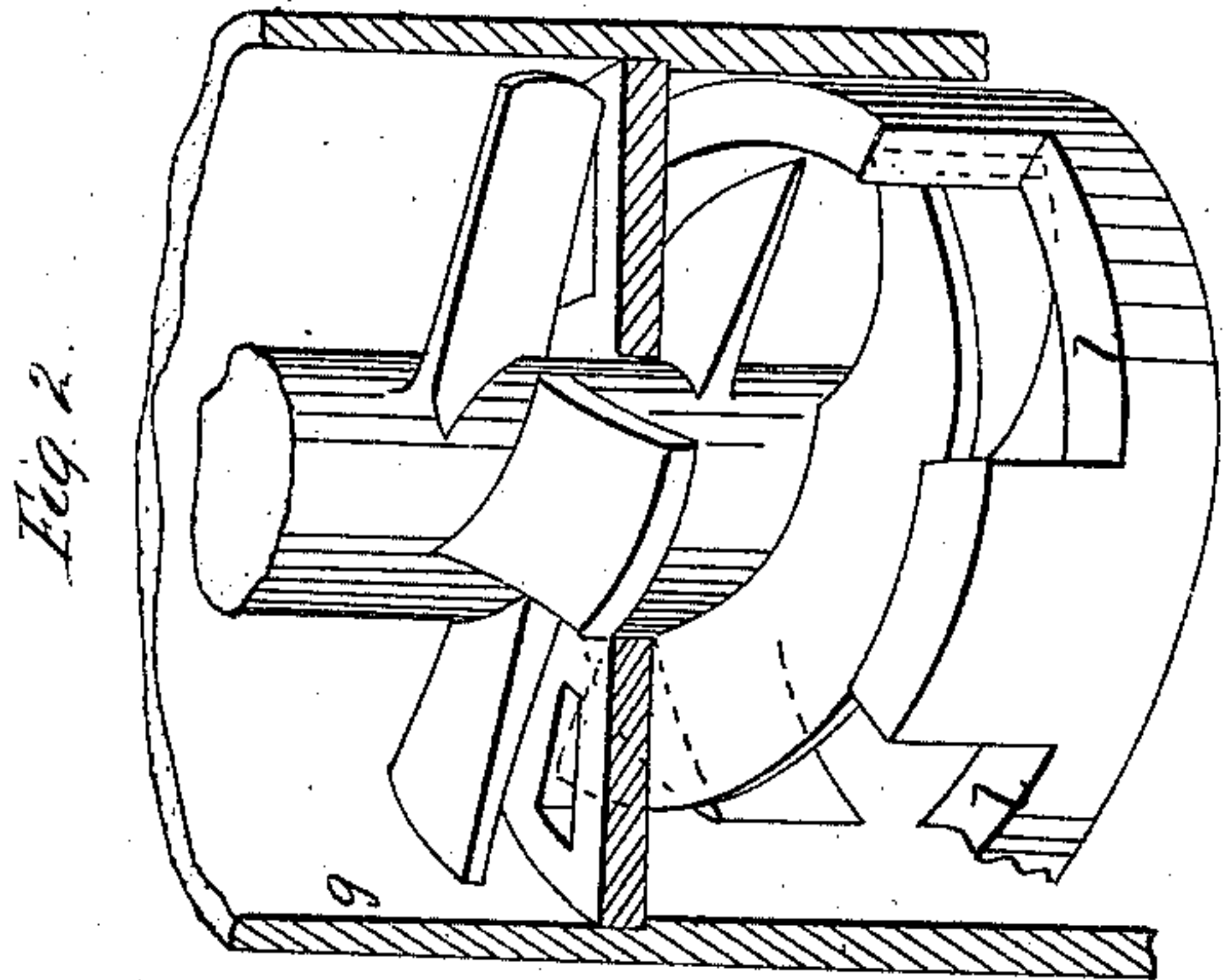


D. Smith,
Brick Machine,
No 78,765 *Patented June 9, 1868.*



Witnesses,
J. M. B. Coffin
John D. Spaulding

Inventor,
David Smith

United States Patent Office.

DAVID SMITH, OF NEWBURYPORT, MASSACHUSETTS.

Letters Patent No. 78,765, dated June 9, 1868.

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, DAVID SMITH, of Newburyport, in the county of Essex, and State of Massachusetts, have invented certain Improvements in Brick-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

With reference to the drawings—

Figure 1 represents a perspective view of a machine, showing my improvements, a portion of the framework, &c., being broken away, the better to show the working parts, and a portion of the cylindrical case of the grinding and moulding portion of the machine being removed to show the parts within.

Figure 2 shows the arrangement of the moulds, so as to have a clear space above for the material to be pressed directly downward into them as well as outward radially, as shown in fig. 1.

Figure 3 shows a sand-case, arranged over the moulds *l*, so that after being filled, the moulds pass through sand with the moulded brick, so that the exposed parts become sanded to prevent sticking in the press, &c.

The three gear-wheels *a b c* serve to give movement to the various operative parts through their respective shafts *d e f*. The driving-power may be applied to shaft *d* through the gear *a*, or otherwise, to cause it to revolve with its attached arms *h j k*, and so drive the gears *b c* and their shafts *e f*. Or either of the shafts *e f* may be made the driver, if preferred.

Around shaft *d* is the case *g*, into which the material for bricks is put. The arms *h* grind and stir the same, and by their inclined or screw-shape press the material downward through a stationary perforated plate or grating, *i*. This grating insures the passing of the material with a sufficient degree of fineness to the arms *j k*, which further stir and reduce it to a proper consistency for moulding.

The arms *j k* are attached to and revolve with the shaft *d*.

Just outside of arms *j k* is arranged an annular series of brick-moulds, *l*, open at top and sides. Into these moulds *l* the material is pressed by the arms *j k*, the part *j* of which is in screw-blade form or angular form to press downward into moulds *l*, while the part *k* has a spiral or curved eccentric form, and operates at the same time to press the material outward into the moulds *l*, more perfectly when they arrive in succession at the side shown in the foreground of the drawing and opposite to the presses hereinafter alluded to.

The annular series of moulds *l* forms a larger circle than the case for grinding up and pressing the material into the moulds, so that in their revolution they pass at one point entirely outside of the case or to an open space afforded for the operation of the presses, hereinafter described.

The series of moulds *l* has an intermittent movement, each period of which corresponds to or measures the distance from centre to centre of the adjacent moulds.

And each mould, after being filled, stops in succession at a point opposite to that where the arms *j k* press closest to the moulds. A series of presses, *m o*, also arranged and moving in a circular track, has a corresponding intermittent movement, and each press *m o* in the series stops in its movement directly against one of the moulds *l*, also at rest, at the same instant.

At this same moment the follower *n* has a movement from a point within the track of moulds *l*, toward one of the presses *m*, moving the moulded brick thereby from the mould into the press, and properly pressing it with the same movement.

The moulds *l* and presses then pass along in the direction of the arrows to the next point of rest and coincidence, and a cam, within the series of presses *m o*, acts on the movable back *o* of the press and forces the new-formed and pressed brick, *p*, out of the press; then, it rests on a rim or table, *q*, from which it may be taken by hand; or an endless belt, or other automatic carriage or stationary table may be arranged instead to receive the brick as it leaves the press.

The movable back *o* is pressed back again by the introduction of the next brick, at a point where the cam, which throws it out, is inoperative. The series of moulds *l* receives its movement from the cranks of shafts *e* and *f* through pawls *r s*.

The series of presses, or *m o*, the movable parts, receives its rotary intermittent movement from the series of moulds *l*, by means of the gears *t* and *u* connected to the series of moulds *l*, and the series of presses, these wheels *t* and *u* playing into each other.

The arm *v* serves to give the follower *n* a movement up and down in the slide *w*, and this movement keeps the material scraped off, that otherwise might adhere and accumulate, so as to give roughness to the brick, and allows it to pass over the brick inward, preparatory to the pressing operation.

The slide *w* is operated with a reciprocating intermittent movement, so as, by the follower *n*, to move the moulded brick from the mould into the press *m*, and press it by means of a pin and slot, *5*, in lever *z*, and the rods *2* and *3* embracing cranks on shaft *f*, and which operate said lever *z*.

The lever *v* receives its movement from the crank *x* of the shaft *e*, which it embraces and operates follower *n* through the crank-arms *y*.

The sand-case *4*, fig. 3, furnishes sand to the surface of the moulded bricks as they pass toward the press.

The sand thus applied to the surface tends to prevent the brick from adhering too tenaciously to the press.

The machinery may be made of iron entire, or the same, or other metals combined with wood, according to the convenience or facilities of the maker.

Thus having described my improvements, what I claim as my invention, and desire to secure by Letters Patent, is as follows:

Claims.

1. I claim the annular series of open moulds *l*, operating in combination with the arms *j k*, substantially as described.
2. The intermittent rotary series of presses *m o*, constructed and operating in combination with the follower *n*, substantially as described.
3. The combination and arrangement of the annular series of moulds *l*, and the intermittent rotary series of presses *m o*, constructed and operating substantially as described.

DAVID SMITH.

Witnesses:

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IRAH D. SPAULDING.