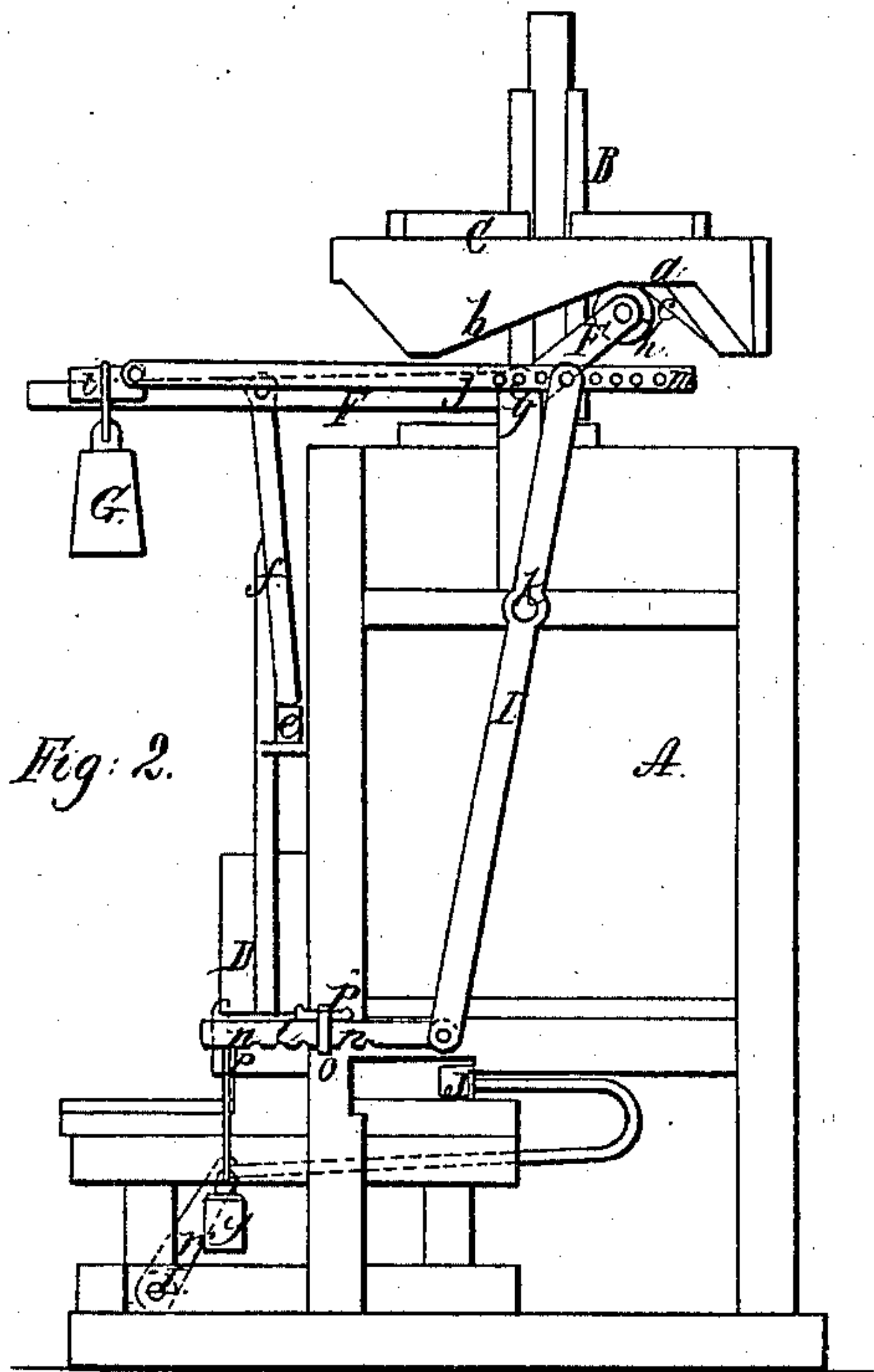
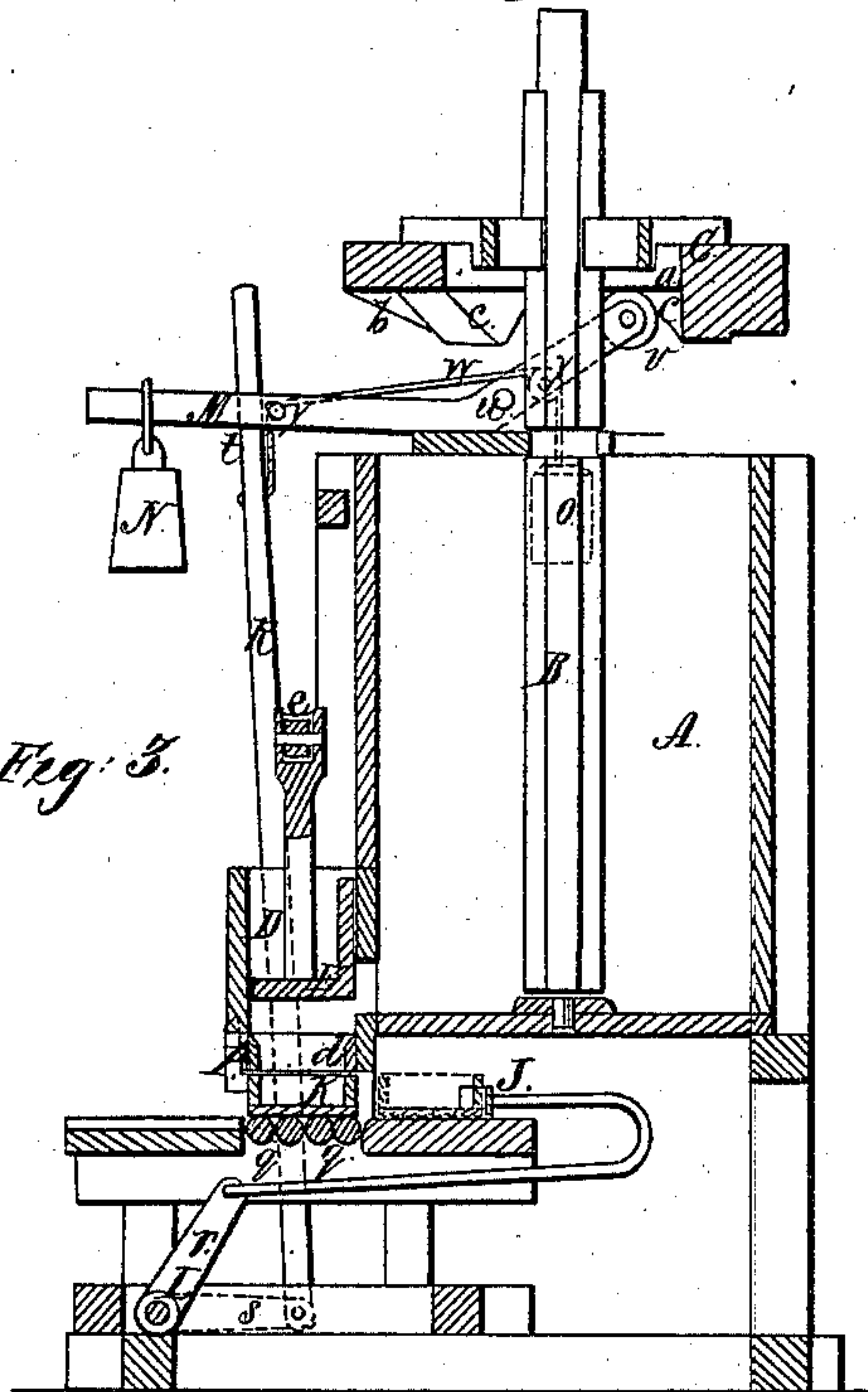


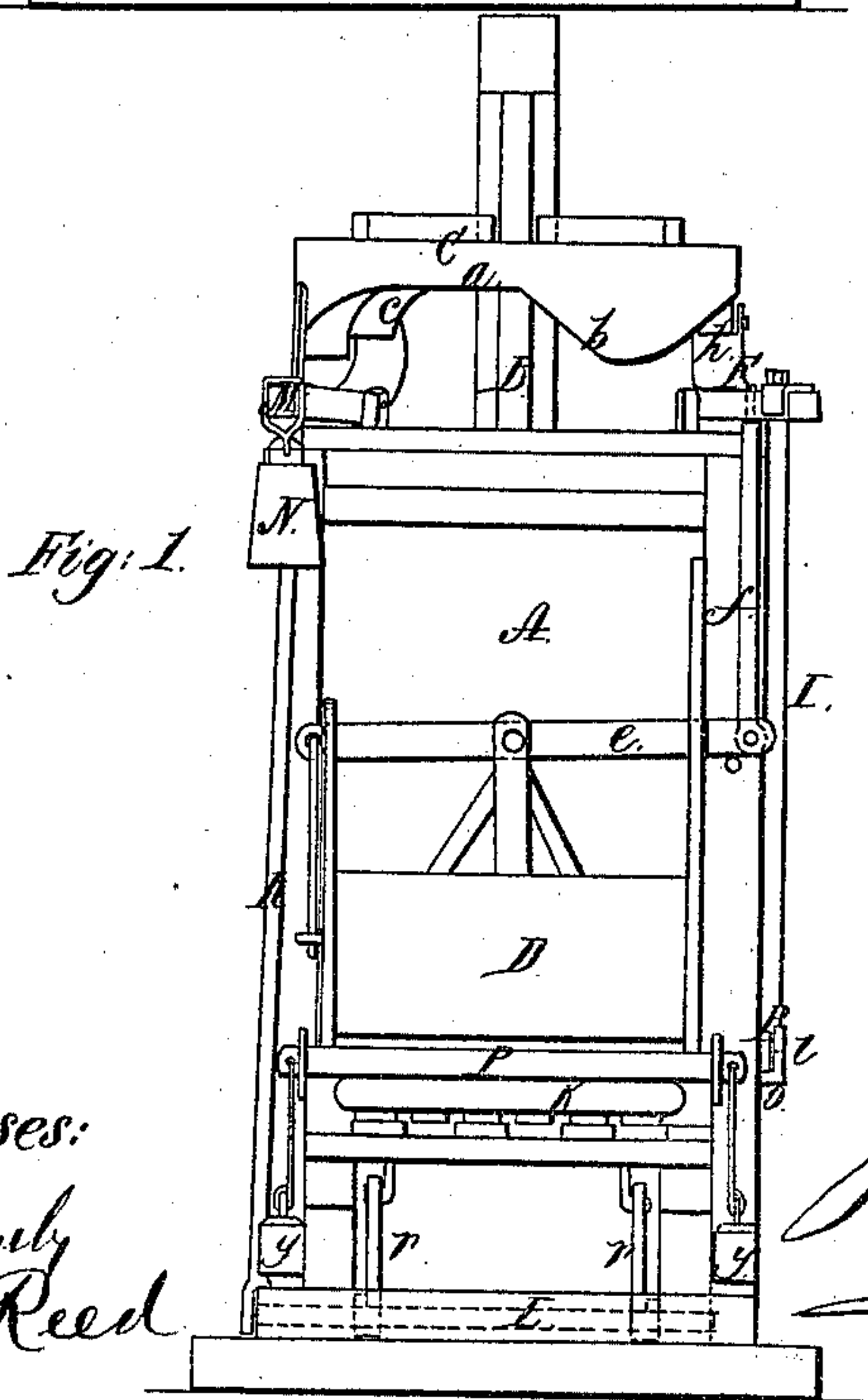
*C.C. & J. Mc.Dermid,*  
*Brick Machine,*  
*Nº 66,605, Patented July 9, 1867.*



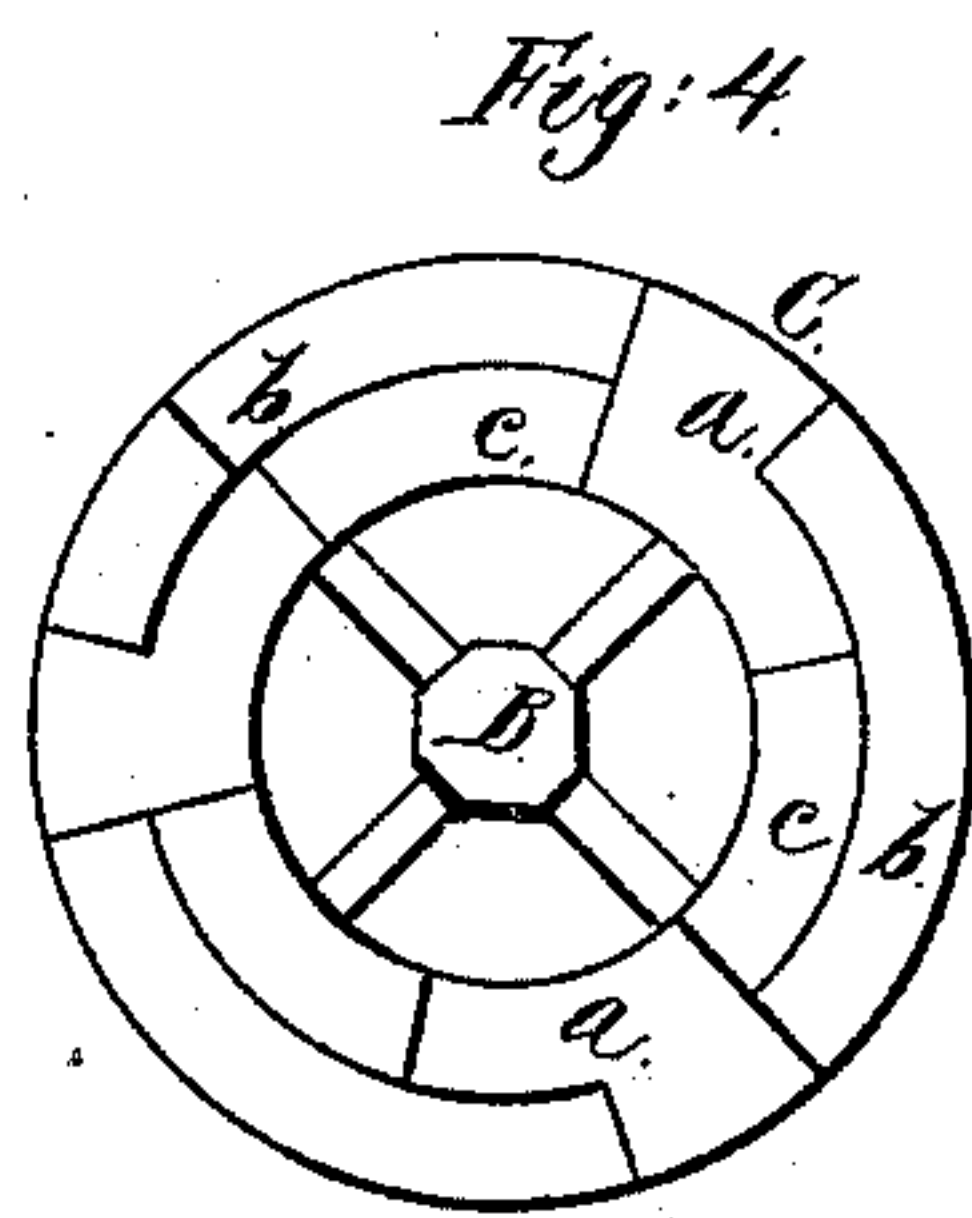
*Fig. 2.*



*Fig. 3.*



*Fig. 1.*



*Fig. 4.*

*Witnesses:*  
*Wm. Reed*

*Inventor:*

*J. C. & J. Mc.Dermid*  
*Per Brown, Combs & Co*



# United States Patent Office.

CHARLES C. AND J. McDERMID, OF CAMBRIA MILLS, MICHIGAN.

*Letters Patent No. 66,605, dated July 9, 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 we, J. and C. C. McDERMID, of Cambria Mills, in the county of Hillsdale, and State of Michigan, have invented a certain new and useful improvement on Brick Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figures 1 and 2 represent elevations at right angles to each other of a brick machine constructed according to our improvement.

Figure 3, a vertical section of the same in a plane or planes parallel to fig. 2; and

Figure 4, an inverted plan of a double cam or wheel with double inclines on its face, for, in conjunction with weights or weighted levers, operating the plunger and mould-box pusher.

Like letters of reference indicate corresponding parts.

The nature of our invention consists, firstly, in a novel combination of a positive motion to the raising of the plunger, with a free weighted action to the pressing action of the same. Also, to a controllable adjustability of such weight to regulate the pressing force of the plunger. And said invention further consists in a similar positive and free or independent weighted action for actuating the moulds, pushing frame, and novel gear or connection of devices for accomplishing the same through a separate weight, whereby the action of the pusher is automatically arrested on the fouling or sticking of a mould.

Referring to the accompanying drawing, A is the grinding-mill, which may either be carried by the same or a separate frame to that of the press-box with its appurtenances. B is the mill-shaft, that may be driven by any suitable power, and provided with the usual or other grinding or forcing-knives, not necessary here to be represented or described. C is a wheel or attachment to the vertical revolving mill-shaft B, forming on its under face a circular track or tracks, *a*, with cam or inclined projections *b c* thereon, for operating, in conjunction with weights or weighted levers, the plunger or follower to the press-box and pusher or pushing frame to the moulds, the cam projections *b c*, and track or tracks they are arranged upon, serving as it were to control the lifting action of the plunger and advance stroke of the pushing frame, and secure to such devices their proper relative operations and pauses, while the weight or weighted levers serve to give the pressing stroke to the plunger and return motion to the pushing frame, essentially as hereinafter described. D is the moulding or pressing-box, which may be of wood, and made to rest upon an iron grate or clod-cutter, *d*, the same being suitably stayed or supported, no particular reference to the construction of the framework here being considered necessary. E is the follower or plunger, worked by a lever, *e*, which is connected by a rod, *f*, with a lever, F, that is hung on a fulcrum, as at *g*, and carries on its inner or back end a roller, *h*, which bears against the outer portion of the track *a* of the wheel C and outer cam projections *b*, while said lever F carries at its outer or front end a weight, G, attached to a slide, *i*, arranged to admit of its adjustment on or along the lever F, and controlled, it may be, by a rod, *j*, attached to a lever, I, having its fulcrum as at *k*, and operated by a rod, *l*. This arrangement serves to give to the plunger, by weight as distinguished from pressure, its requisite power to force the clay into the moulds, and this power is made readily controllable by the movement of the weight G closer to or further from the fulcrum *g* as effected by the lever I, which may be connected to the slide *i* at any one of a series of holes *m* in the rod *j* for the pin uniting said rod *j* with said lever I, and also by a notched construction, as at *n*, of the rod *l*, held by a locking staple or other device, *o*, and secured, it may be, by a key, *p*. By these means any desired amount of pressure may be applied to the clay in the moulding-box, and changed with facility and dispatch should the pressure be either too little or excessive. A similar principle of action is made to govern the pushing frame J, which serves to give the moulds or mould frame K its or their advance movement under and from beneath the grate *d*. These mould frames are or may be fed in at one side or end of the machine to lie in front of the pusher J, which latter each advance movement moves said mould frames in succession beneath the grate *d*, where they may rest on rollers *q*. The means for accomplishing this are or may be as follows: L is a rock-shaft, carrying arms *r* that are connected with the pusher J, and by means of an outside arm or lever, *s*, with a rod, R, which is provided near its upper end with a shoulder, *t*, on which rests a lever, M, having its fulcrum as at *u*, and bearing by a roller, *v*, against the inner portion of the track and cam projections *c* of the wheel C by means of a weight, N, which projections *c* under such an arrangement become the driver or power to give to the



pushing frame J its advance movement. As it is necessary, however, to provide against a mould frame fouling or getting fast on putting it into the machine, the lift of the rod R with the front portion of the lever M is effected by means of a weight, O, connected by cord or chain *w* and suitable pulleys or guides *x* with the rod. This gives a freedom to the rod R, under control of the weight O, irrespective of the lever M and weight N, which, in case of any fouling of the moulds or mould frames, arrests in an automatic manner motion of the latter by the pusher J, till, say, the lever M again lowers, when the mould frame may be properly put in. P is a striker, bevelled on front and in rear at its bottom edge, and kept down by weights *y* at each end, and arranged in front of the clod-cutter to clear the moulds of surplus clay as they are delivered by the pusher J in its advance stroke.

What is here claimed as new and useful, and desired to be secured by Letters Patent, is—

1. The combination, with a positive or cam-like action to the lever F, which controls the motion of the follower, of a weight to said lever arranged to give pressing power or force to the follower on relief of the lever from its positive lifting action on the follower, substantially as specified.

2. The combination, with the lever F, of the adjustable or sliding weight G under control of a lever, I, and rod L, or their equivalents, essentially as and for the purpose or purposes herein set forth.

3. The pusher or pushing frame J, actuated by a cam-like or positive action in its advance stroke, and by a weight or weighted lever in its return stroke, substantially as specified.

4. The gear of the rod R, which actuates the pusher J, with the weighted lever M in a loose or independent manner, under control of a weight, O, essentially as and for the purpose herein set forth.

J. McDERMID,  
CHARLES C. McDERMID.

Witnesses:

HULBERT WHEELER,  
GEO. N. NAUGHTY.