

W. S. Watson,

Brick Machine

N<sup>o</sup> 31,918.

Patented Apr. 2, 1861.

Fig. 1.

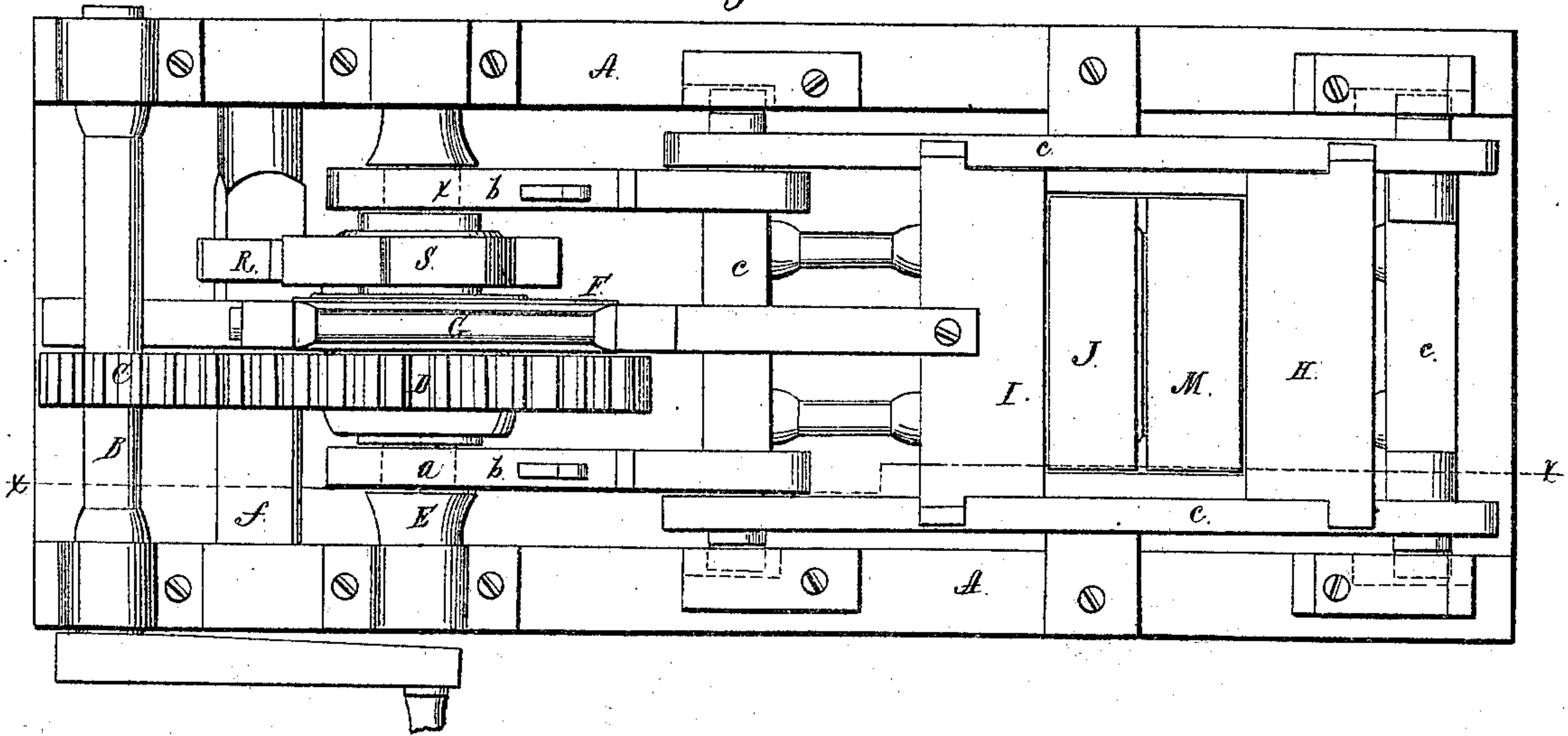
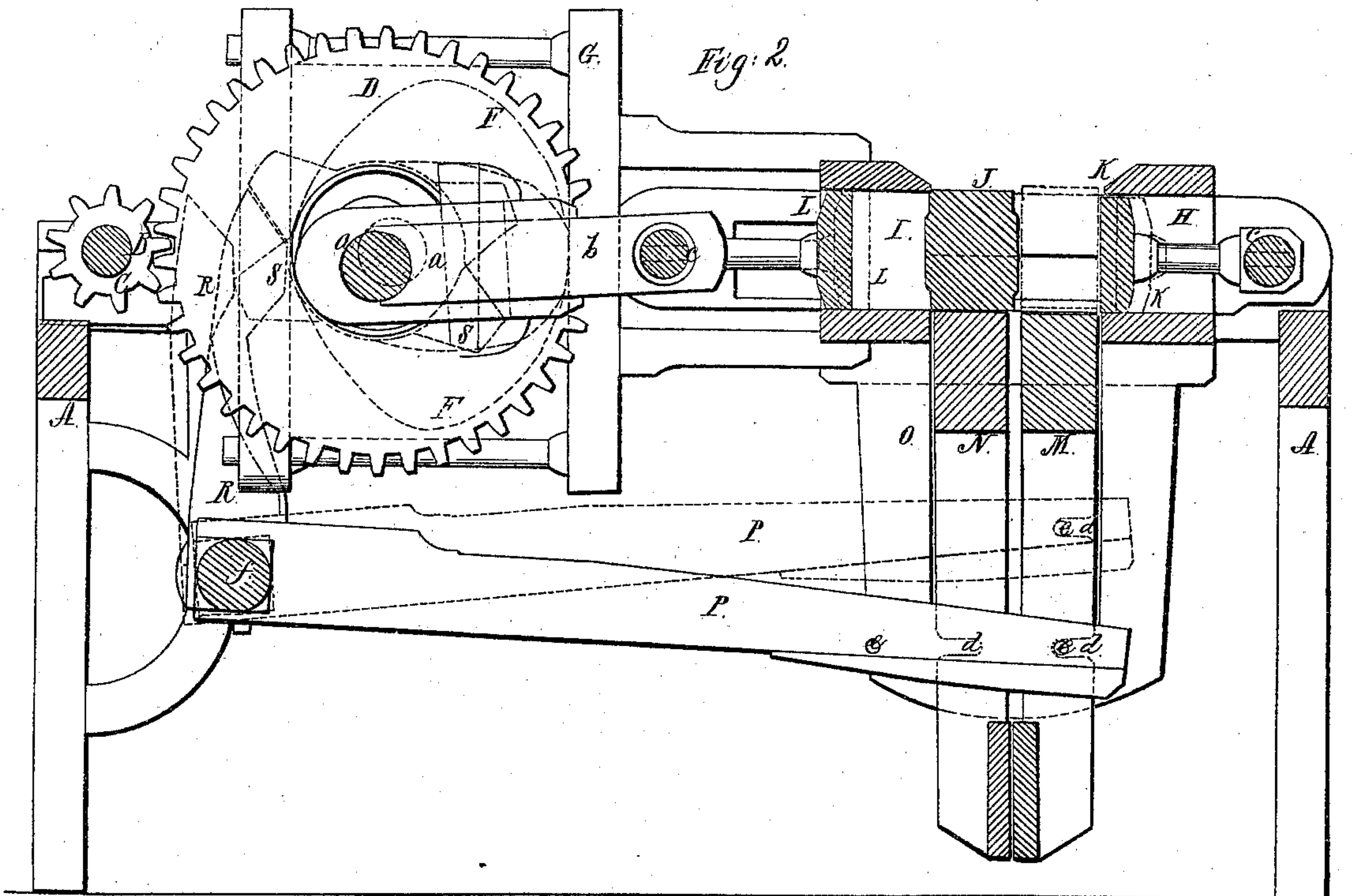


Fig. 2.



Witnesses:  
Alexander Admison  
C. L. Hughes.

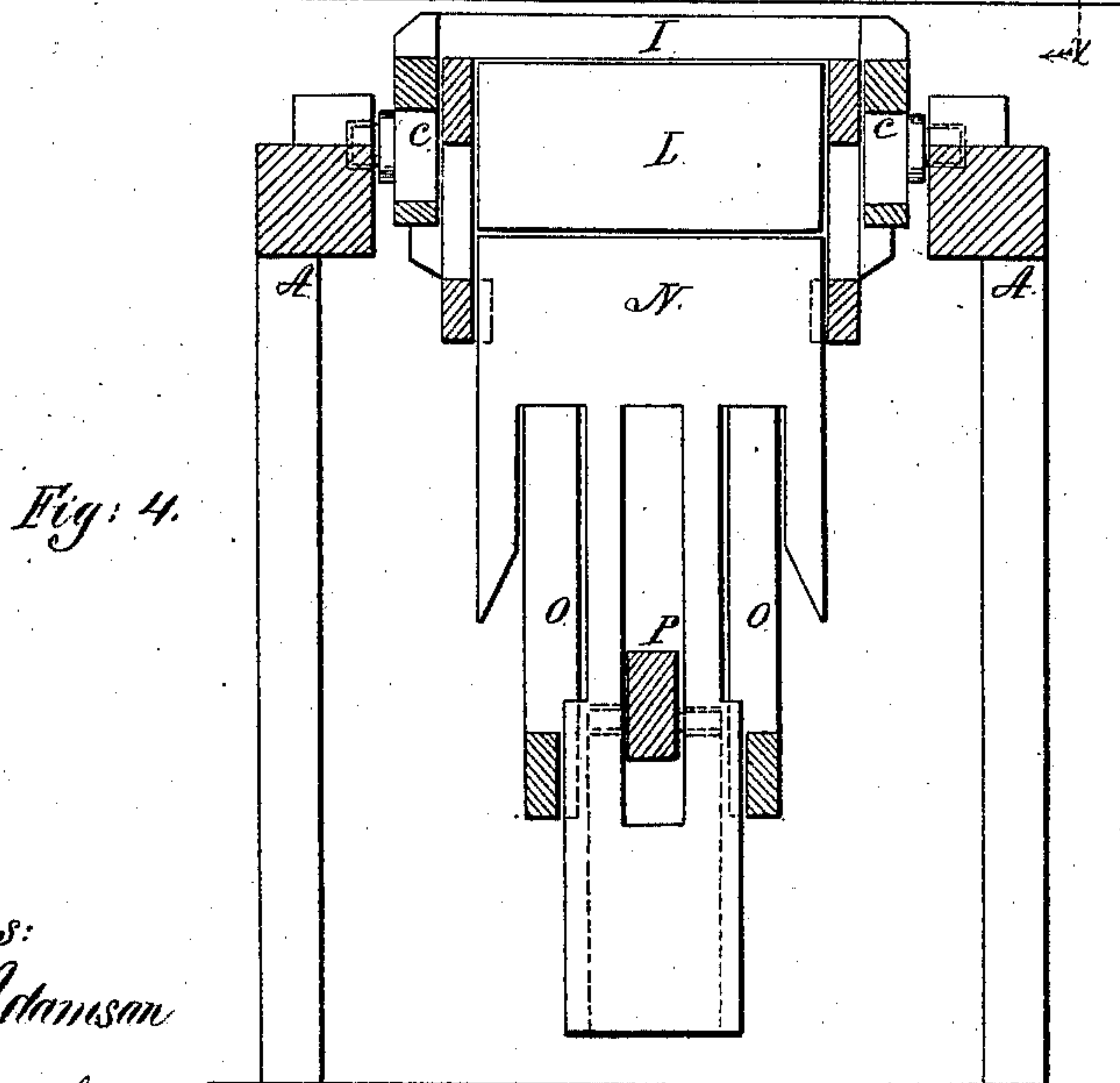
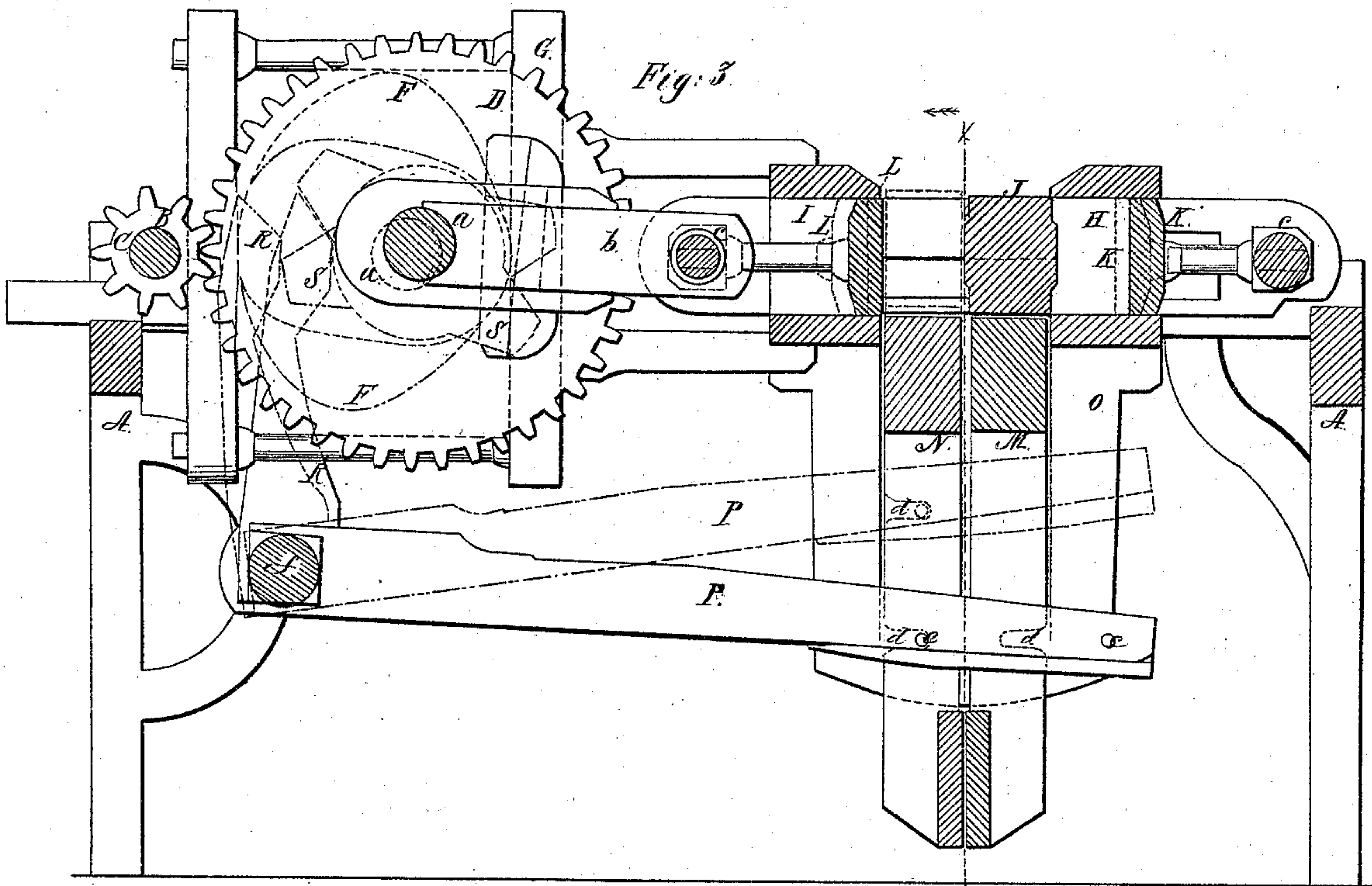
Inventor:  
Wm. S. Watson  
by Atty. A. Gregory

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*2 Sheets. Sheet 2.*

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*Alexander Adamson*  
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*Inventor:*  
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# UNITED STATES PATENT OFFICE.

WILLIAM S. WATSON, OF MADISON, INDIANA.

## BRICK-MACHINE.

Specification of Letters Patent No. 31,918, dated April 2, 1861.

*To all whom it may concern:*

Be it known that I, WILLIAM S. WATSON, of Madison, in the county of Jefferson and State of Indiana, have invented a certain new and useful Improvement on Brick-Making Machines, of which the following, taken in connection with the accompanying drawings, that form part of this specification, is such a full and clear description as to enable others skilled in the art to which this belongs to make and use the same.

My present improvement, which is designed more particularly for pressing brick after it has been molded or roughly formed and partially dried, to give increased solidity and a smoother and better finish to the brick and to render it less susceptible to injury in finally drying or handling and removal of it for such purpose, resembles in some respects the machine secured to me by Letters Patent of the United States bearing date June the 7th A. D. 1859. But, while my present improvement, like such former machine, uses a combination of stationary pressing block, intermittently reciprocating press-box, and plunger or plungers having a joint motion with the press-box and independent movement thereto, it dispenses or may dispense with the separately reciprocating top and bottom brick holding slides, chambered feed box, and delivery apron or endless-belt conveyer, shown in said previous machine, and employs a less complicated construction and action of parts involving or including a novel combination of a table or tables or lifters with the former devices which I use as aforesaid.

In my previous machine, as referred to, it would sometimes happen that when the brick was a little moist it would adhere to the plunger, the brick fail to fall straight and level on the apron in its delivery from the press-box, and the edges or corners of it be clipped or bruised, also the dirt and trimmings of the brick that fell from the press-box being received by the apron were apt to adhere to the face of each newly discharged brick. By my present improvement all these disadvantages or liabilities are avoided and certain advantages obtained as will appear from the following description in which I need only refer briefly to the parts and actions which are common to my former machine as already alluded to.

The machine represented in the accompanying drawings is what may be termed a

double machine, but machines working on the same principle may be made single, or more than double that is with more than two brick pressing chambers and their pertaining devices.

In said drawings, Figure 1 represents a plan of a brick pressing machine embracing my present improvement; Figs. 2 and 3 vertical longitudinal sections thereof, showing certain parts in different positions; and Fig. 4 a vertical transverse section of the same at the portion occupied by the tables or lifters, as indicated by the line *x x* in Fig. 3.

In these figures, A indicates the frame of the machine which may be constructed of any suitable shape.

B, is a driving shaft made to revolve by any convenient power. C, a pinion on said shaft giving motion to a spur wheel, D, on the shaft, E, of which is a cam, F, for giving through a sliding yoke, G, the necessary movement to the intermittently reciprocating press-box which is here shown double or as having two brick pressing compartments, H and I, one on either side of the stationary pressing block, J, toward and from which said compartments are made to alternately advance and recede at proper intervals. The same shaft, E, may also give motion, by means of eccentrics (*a*), connecting rods (*b*) and sliding yoke or frame (*c*), to the reciprocating plungers, K, L, which independently of the movement thus communicated to them alternately toward and from the pressing block, J, have a joint motion with the press box, in the compartments H and I of which they work.

A brick is pressed, alternately by either plunger slowly advancing toward the pressing block while and after (or after) the compartment of the press-box, in which said plunger works, finishes its stroke toward the pressing block; when the press-box remains stationary a while not only to give time for the plunger which is pressing brick to more perfectly perform its work, but also for the delivery of the pressed brick on the other side of the pressing block and feeding in of fresh brick as will be now fully described.

M, N, are tables or lifters, one to each brick pressing compartment. These tables or lifters are arranged to alternately act as plungers to receive and discharge the pressed brick and to lower the newly fed brick down to its place for the press-box to receive it.



For this purpose, said tables or lifters have a double intermittent motion given them. They (that is each lifter) first slide from underneath the stationary pressing block, moving in concert with the press-box, so as to receive the pressed brick as the one compartment of the press-box recedes, and then and after said compartment has receded and the press box remains stationary, said lifter rises to the level or thereabout of the top of the pressing block to discharge the pressed brick or permit of its easy removal and to present a convenient table or surface for the feeding in of fresh brick which is lowered to its place by the next motion of the lifter, which is a falling one; after which and as the compartment of the press-box advances to take in the newly fed brick, the lifter again passes to one side or under the stationary pressing block. Such is the action of either table or lifter alternately, and it is preferable that, before or as the lifter discharges the brick, the brick-pressing plunger of the compartment to which it belongs be given its receding motion so as to prevent sticking and to facilitate the discharge of the brick. Various modes of thus operating the tables or lifters may be adopted, but the following mechanism is a simple and advantageous one for actuating the lifters where they work in pairs, and whereby one lifting lever is made to raise at their proper intervals both lifters.

O, is a frame to carry the lifters and which may be connected to the press-box so as to reciprocate with it in order to give to the lifters their before specified sideward actions at intervals alternately beneath and out of the range of the brick pressing chambers or cavities. This secures to the lifters their one intermittently reciprocating motion, and the same movement aids in alternating the raising and lowering of the lifters. To give the lifters, M, N, this last

named or second reciprocating motion at intervals to lift or discharge the pressed brick and lower fresh brick to its place for pressure, the lifters, which are hung to have free vertical movement in the sliding frame, O, are each provided with slots (*d d*) that alternately, and accordingly as the sliding frame, O, finishes its stroke to the right or to the left, receive within them studs or pins (*e e*) that project from a lifting lever, P. This lever (P), each time that it is thus thrown into gear with either lifter alternately, is struck or operated so as to raise the lifter and then allowed to fall with the lifter, which effects the discharge and feed as aforesaid. Such motion may be given to said lever by means of an arm, R, on its fulcrum or rock-shaft (*f*), operated by a two throw cam, S, on the spur wheel shaft, E; or said motion may be produced in any other suitable manner.

Figs. 2 and 3 of the drawing show either lifter as about to be raised in its turn and in accordance with a reversed position of the press-box and its plungers.

I claim—

The combination of a pressing block, intermittently reciprocating press-box formed with one or more pressing chambers, independently reciprocating plunger or plungers, and table or lifter or tables or lifters having at intervals not only a raising and lowering action across or through the press box but also an intermittently reciprocating motion in concert with the press-box substantially as and for the purpose or purposes herein set forth.

In testimony whereof, I have hereunto subscribed my name this eighth day of February 1861.

WILLIAM S. WATSON.

Witnesses:

RUFUS GALE,  
EPH KENNEDY.