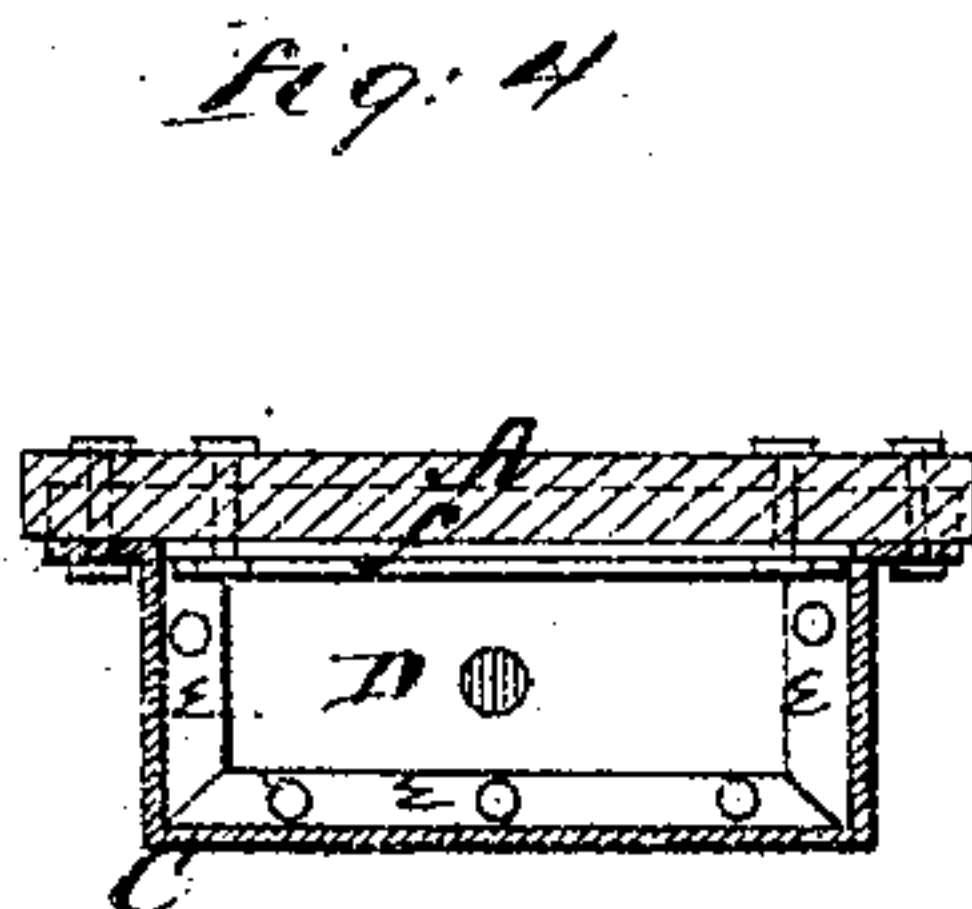
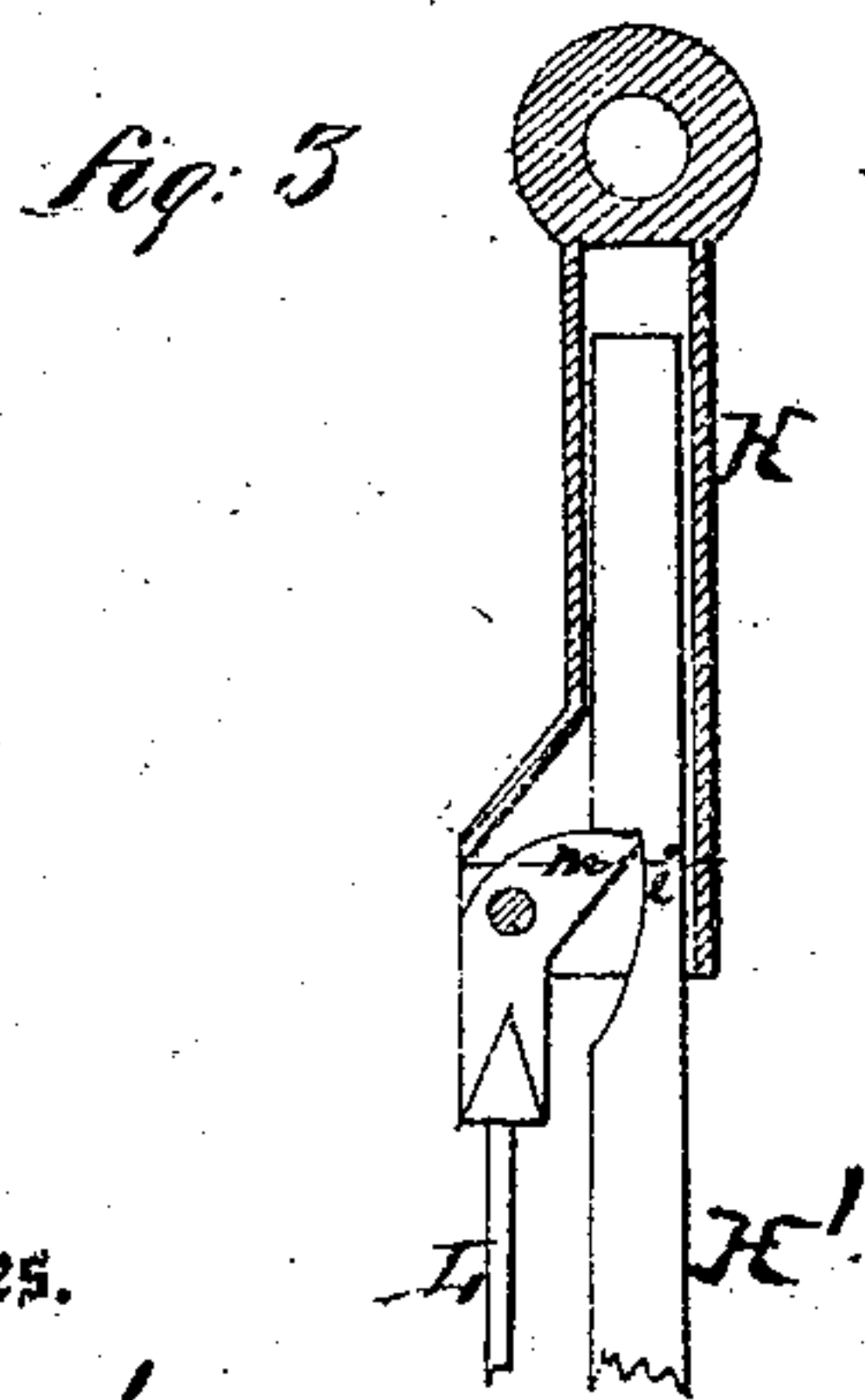
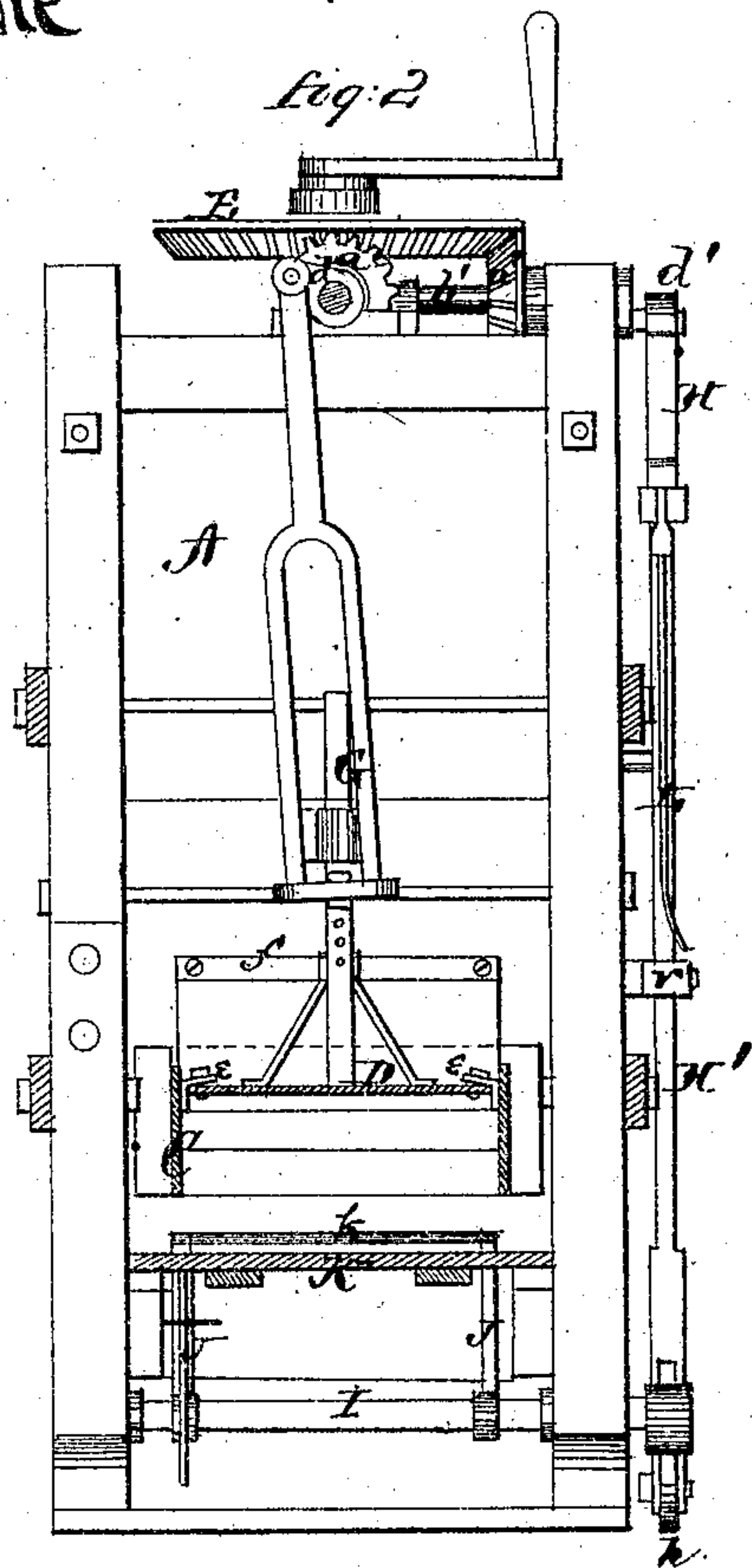
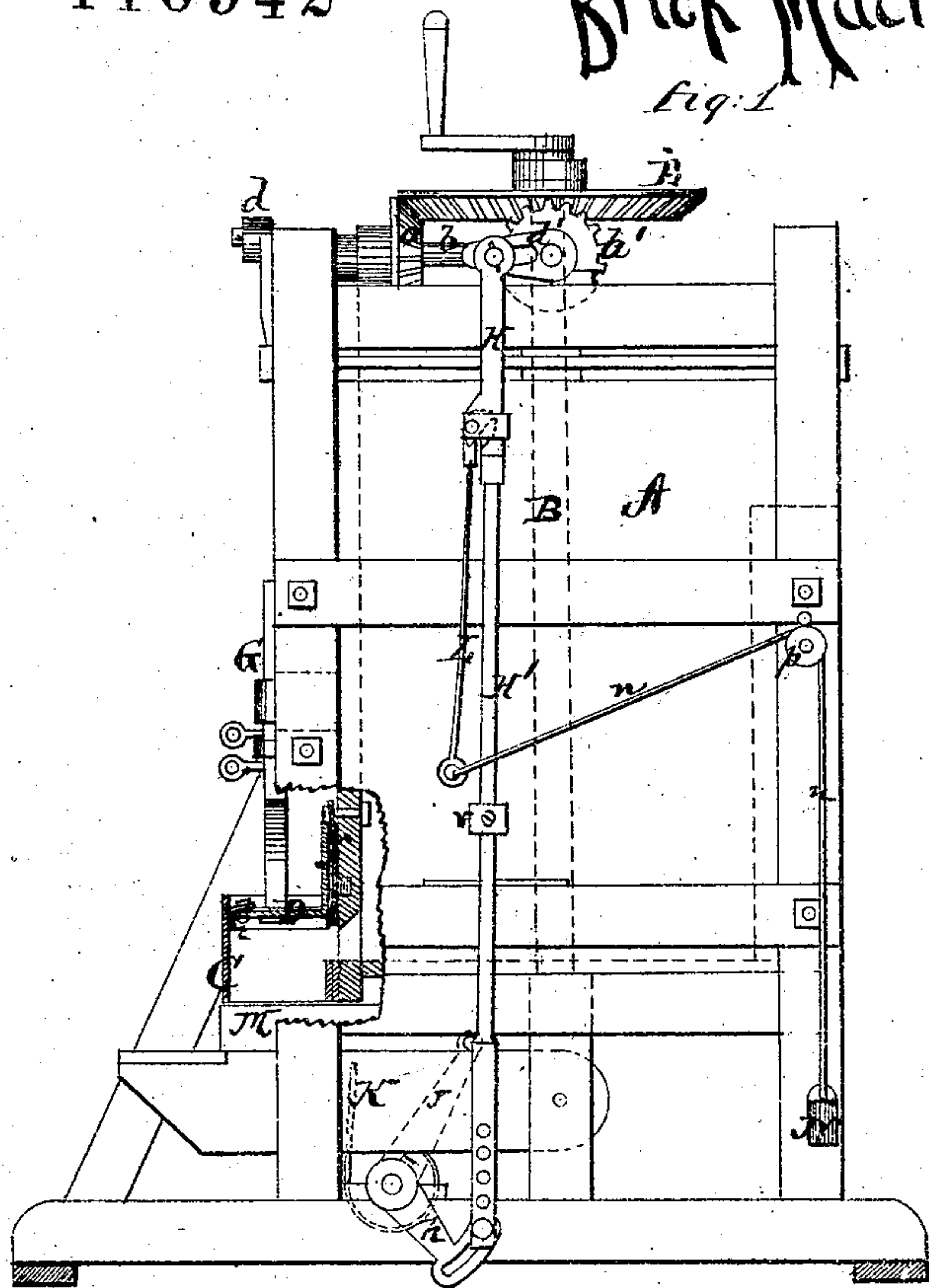


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PATENTED JUL 11 1871

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Brick Machine



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UNITED STATES PATENT OFFICE.

ALEXANDER FERGUSON, DAVID RALSTON, AND GEORGE HILDRETH, OF TROY,
NEW YORK.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 116,942, dated July 11, 1871.

To all whom it may concern:

Be it known that we, ALEXANDER FERGUSON, DAVID RALSTON, and GEORGE HILDRETH, of Troy, in the county of Rensselaer and in the State of New York, have invented certain new and useful Improvements in Brick-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of our invention consists in the construction and arrangement of the device in a brick-machine whereby the molds are removed after they have been filled, and also in the mode of packing the plunger or piston, all of which will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation of a brick-machine, showing the box in transverse vertical section. Fig. 2 is a front view of the same, showing the box in longitudinal vertical section. Fig. 3 is an enlarged vertical section of the upper end of the rod connecting the power-shaft with the device for removing the molds, and Fig. 4 is a plan view of the box and plunger or piston.

A represents the box in which the clay is placed. Through said box passes an upright shaft, B, to be provided with the usual knives for cutting and forcing the clay into the box C where the plunger or piston D works up and down. On the upper end of the shaft B is a large wheel, E, with cogs on its under side around the circumference, and there should be also attached a sweep, crank, or other device for the attachment of the desired power to run the machine. The wheel E gears with two pinions, *a a'*, upon two shafts, *b b'*, the shaft *b* extending to the front and the shaft *b'* to one side of the box A. Upon the front end of the shaft *b* is a crank, *d*, connected, by suitable rods G, with the plunger or piston D. This plunger is L-shaped, as shown in Fig. 1, and provided around its edges with packing-plates *e e*, or rather the horizontal part of the plunger is on the front edge and ends provided with said packing-plates. The plates *e e* are bent so as to form

an angle of more than ninety degrees, and attached in the manner shown by bolts. Their peculiar construction—that is, being larger than a right angle—allows them to spring outward by the pressure of the clay and fill up the box C as its sides are worn by use, thus rendering the press-box self-packing and preventing any leakage of clay from the box. To the front side of the mud-box A is attached a spring-plate, *f*, which bears against the vertical part of the L-shaped plunger and acts as a scraper to clean the mud or clay off of the same. Upon the outer end of the shaft *b'* is a crank, *d'*, connected, by means of a rod made in two parts, H H', with a crank, *h*, upon the end of a horizontal shaft, I, located in the lower part of the frame supporting the mud-box A. This shaft runs from side to side, and is provided with two arms, J J, connected at their outer ends by a rod or bar, *k*. The arms J J pass up through the slotted table K, upon which the molds M M are placed, and the rod *k* is above said table, so that as the machine is in operation and the arms J J, by their connections with the power, obtain a motion back and forth, the rod *k* will strike the molds, carrying the filled mold out from under the box C and the next mold to be filled in under said box. The outer end of the crank *h* is enlarged and slotted, as shown in Fig. 1, and in said slot works the pin from the lower end of the connecting-rod, so that after the rod *k* has been moved backward away from the molds it will remain stationary for a few moments while the attendant places another mold on the table immediately in front of said rod; thus this rod has not a continuous reciprocating motion but an intermittent reciprocating motion. The two parts H H' of the connecting-rod are constructed in the following manner: The upper part H, which is attached to the crank *d'*, forms a socket, as shown in Fig. 3, in which the upper end of the lower part H' is inserted. The lower end or mouth of the socket H is enlarged, and in this enlargement is pivoted a lever, L, the upper end of which is provided with a tooth, *m*, which engages with notch, *i*, in the rod H'. To the lower end of the lever L is attached a cord, *n*, which passes over a pulley, *p*, and has a weight, N, attached to it. This weight holds the lever in proper position, so as to retain the rod H' in its place in the socket H, except when stones, gravel, or other similar sub-

stances in the clay should block up the molds and prevent them from being moved. Then, by the resistance upon the rod *k*, the lever *L* rises so as to disengage the tooth *m* from the notch *i*, allowing the rod *H'* to drop down. An adjustable stop, *r*, upon said rod prevents it from dropping entirely out of the socket. As soon as the obstruction in the mold is removed the lever *L*, by means of the weighted cord, engages itself with the connecting-rod and the machine works as before. It is evident that the lever *L* may be arranged in various other ways to accomplish the same result; hence we do not confine ourselves to the employment of the weighted cord, but wish to include any arrangement whereby the same is held in position and allowed to yield or disengage itself when obstructions occur, thus preventing breakage of any part of the machinery. For instance, the lower end of the lever may be turned upward and a weight either placed thereon or attached to it; or one or more springs may be arranged to operate in the same manner or for the same purpose.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The packing-plates *e e*, constructed as described, and attached to the plunger or piston *D*, substantially as and for the purposes herein set forth.

2. The spring-plate *f*, attached to the box *A* and operating upon the plunger or piston *D*, substantially as and for the purposes herein set forth.

3. The socket *H*, rod *H'* with notch *i*, and the lever *L* with tooth *m*, constructed and arranged to operate substantially in the manner and for the purposes herein set forth.

4. The combination of the connecting-rod *H H'*, crank *h* with enlarged and slotted end, shaft *I*, arms, *J J*, and rod *k*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

In witness that we claim the foregoing we have hereunto set our hands this 27th day of May, 1871.

ALEXANDER FERGUSON.
DAVID RALSTON.
GEORGE HILDRETH.

Witnesses:

C. L. EVERT,
CHARLES D. KELLUM.