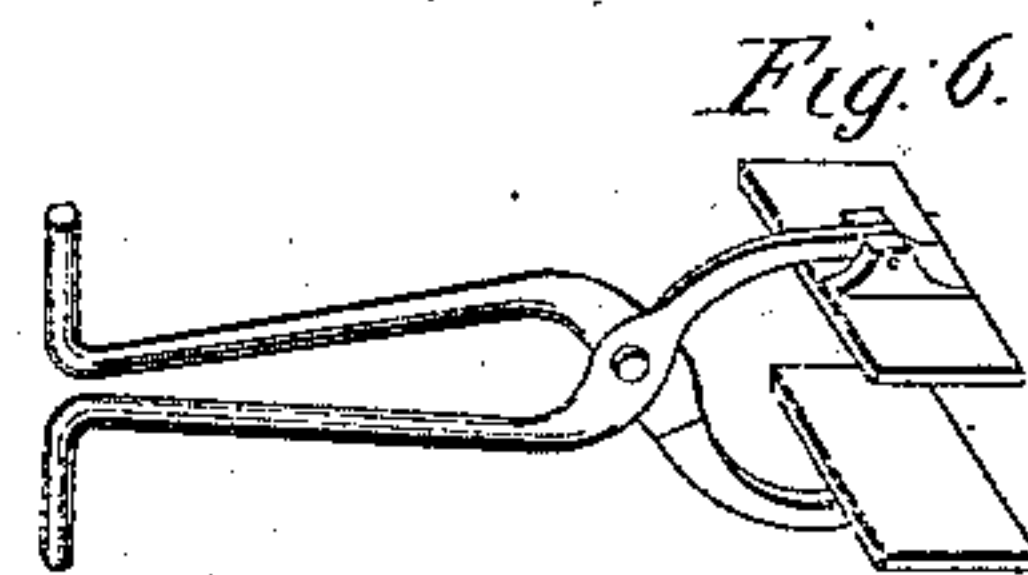
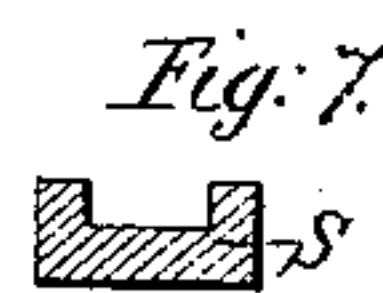
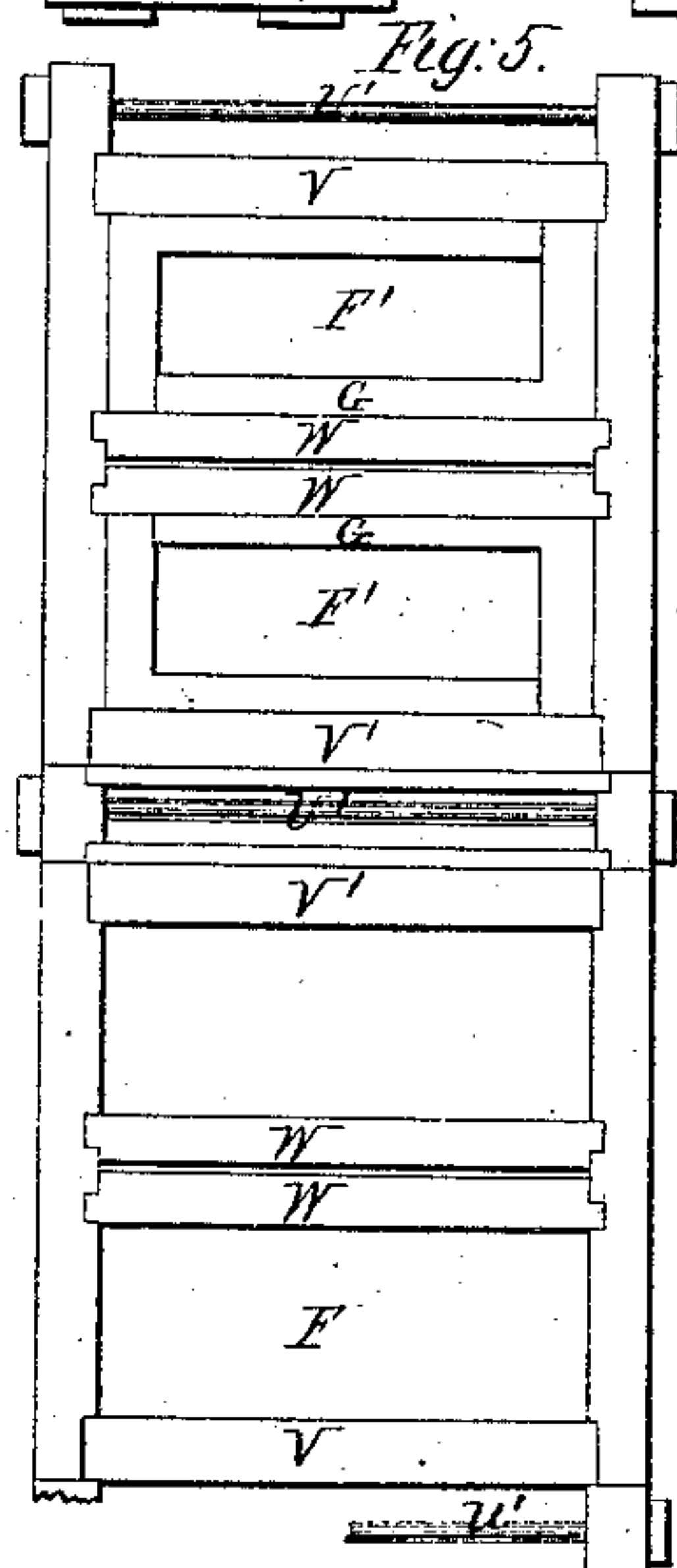
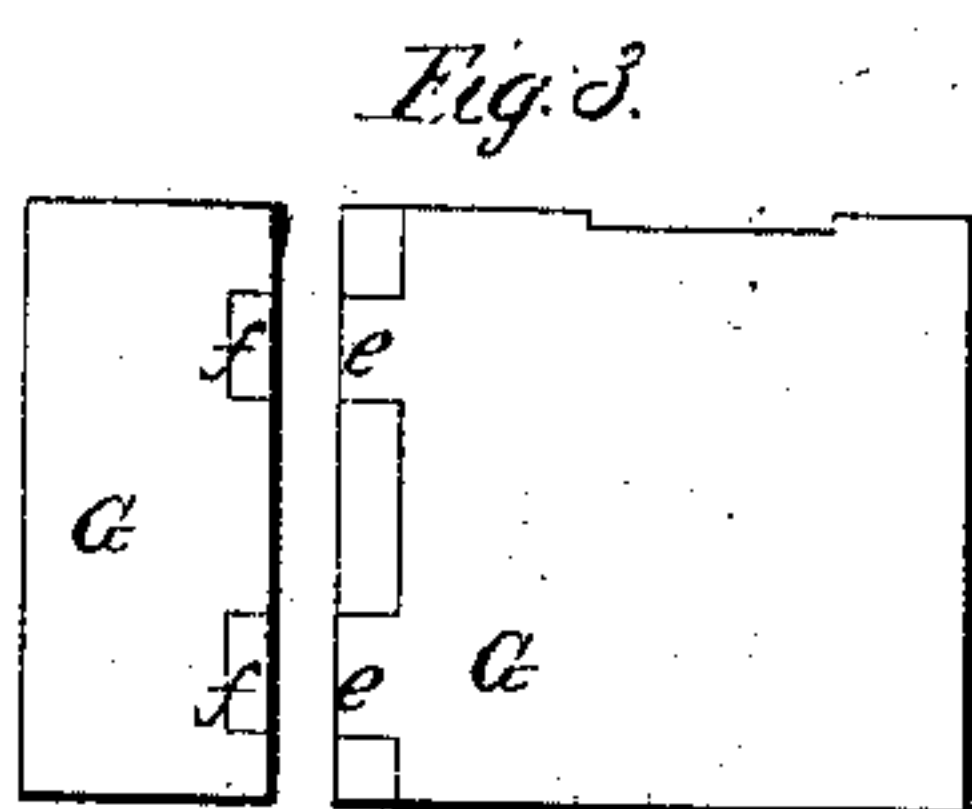
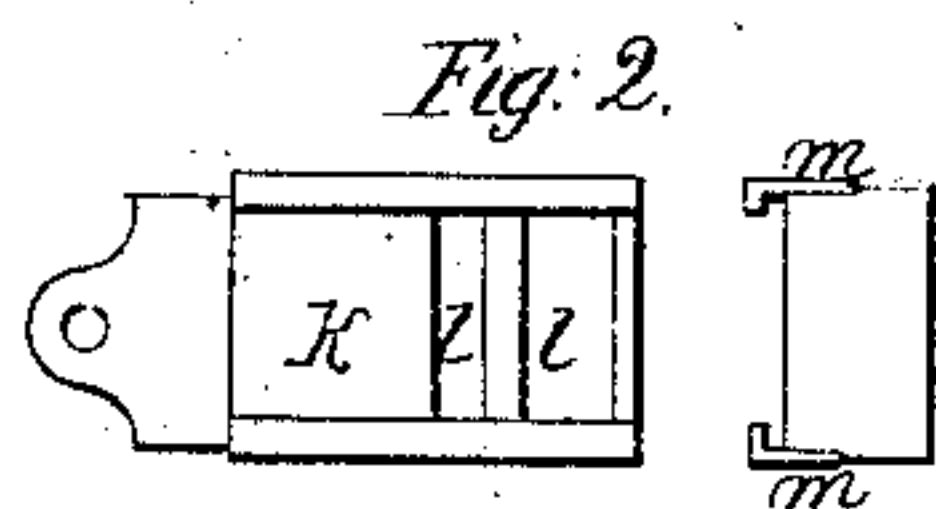
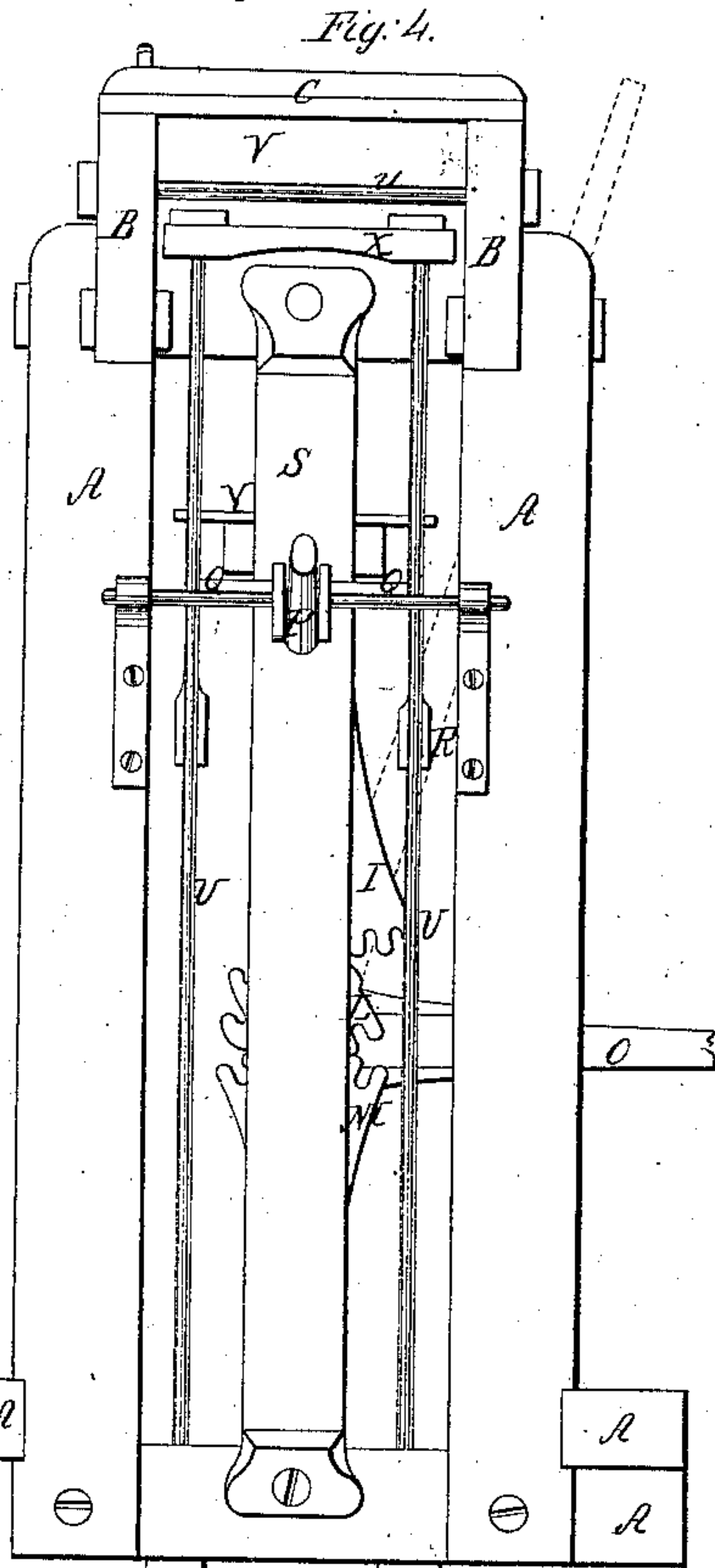
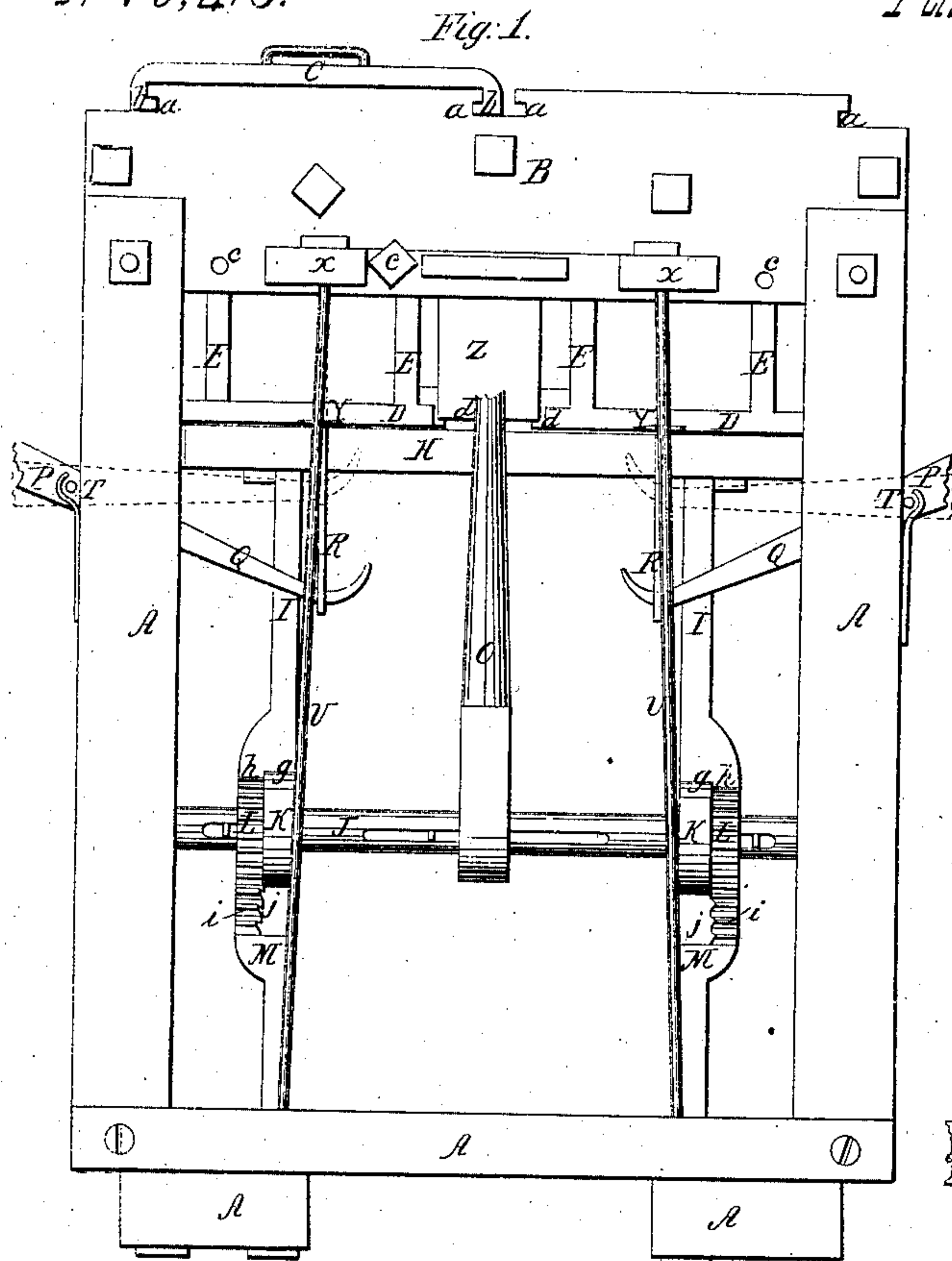


L. Dieterich

Brick Machine.

No. 76,415.

Patented Apr. 7, 1868.



Witnesses:
Nicholas Dieterich
J. A. Vander

Inventor,
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United States Patent Office

LEWIS DIETERICH, OF SANDWICH, ILLINOIS.

Letters Patent No. 76,415, dated April 7, 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, LEWIS DIETERICH, of the town of Sandwich, in the county of De Kalb, and State of Illinois, have invented certain new and useful Improvements in Brick-Presses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front elevation.

Figure 2, a bottom and end view of the removable hopper.

Figure 3, a side and end view of the lining or false box for moulding.

Figure 4 a side elevation,

Figure 5 a top or plan view,

Figure 6 a perspective view of the brick-carrier, and

Figure 7 a cross-section of the slotted bar S.

Like letters refer to the same parts in all of the figures.

The nature and object of my invention consist in constructing a machine for making pressed or gravel brick by hand or by power; in so applying the power that a number of brick can be made at a single operation of the machine; in so arranging the operative parts that a principal portion of the frame can be made of wood; in making the vertical bar or guide S slotted sufficiently to receive the movable parts; and in the several combinations hereinafter set forth and claimed.

To enable others skilled in the art to make and use my machine, I will describe its construction and operation.

The frame A is made of wood, and is about four feet high, three feet long, and one and a half foot wide, and of timbers sufficiently strong to make the machine permanent and durable. To the top of this wooden frame I attach or place an iron frame or box, B V, which is divided into as many compartments or moulds as may be desired, by the partition-plates V and W, fig. 5. This cast frame is secured together by the strong bolts or rods U', and fastened to the wooden frame A by the rods U and flanches X. In making gravel or sand brick, large sizes are usually made, but it is frequently desirable to make smaller sizes, or even clay brick, in the same machine. In order to do this, I make my moulds originally of the largest size desired, and then make linings or false moulds, G, which are fitted to the external ones, and made of the size desired for the smaller brick. These linings are made, as shown at fig. 3, in two sections, with recesses *e* and projections *f*, fitting into them, so that the parts cannot be displaced. They are held in place by the bolts or screws *c*, fig. 1. Some changes in the followers or platens are also necessary, and will be hereinafter set forth.

On each side of the machine I attach a vertical guide-bar, S, to the cast-iron frame, and to the base of the wooden frame. On the inside of each of these bars I make a slot, as shown at fig. 7, the entire length of the bar, or so far as may be necessary to enable me to take out the beam H and rock-shaft J without taking the machine apart at its fastenings. Into the slots or grooves of the bars S, I insert, near the moulds, a beam or cross-bar, H, by proper tongues or tenons. To the under side of this beam I hinge or otherwise attach the pendants I, so that their upper ends will rest strongly against the beam. The lower ends of these pendants are rounded off at *g*, and made broad, and to the side a gearing, *h*, is attached. Immediately beneath these, standards M are hinged or otherwise attached to the base of frame A, and rest upon it. The upper ends of these standards are made broad, and are rounded off at *j*, and have a gearing, *i*, at the side, like the pendants I. Between these, I and M, I insert or place a rock-shaft, J, the ends of which are inserted in the grooves of the guide-bars S, and near each end I attach the double cams K or eccentrics, which have gearings or cogs, L, on their sides, corresponding to *h* and *i*, and by means of which the pendants I and standards M are kept in place and made to operate, but the power is applied by the cam or eccentric, K. At the middle I attach the operating-lever O. This lever, and the cogs L and *i*, with the weight of the machine, will prevent displacement of the parts when in use.

In order to take these operative parts out of the machine, place a lever under the rock-shaft J, and elevate it slightly, when the standards M will turn down on the side. By dropping one end of J, it also comes out,

which releases beam H, which can, with the pendants I, also be taken out by depressing one end; and by drawing out levers P, the platen or follower will come out, so that the machine can be taken apart for repairs or adjustment without loosening a single bolt or stay by reason of the long groove in the guide-bars S.

The followers, figs. 1 and 5, are made in pairs, and as many pairs can be attached as desired by simply adding other short bars, Z, and increasing the width of the machine. Each pair has a horizontal bar, D, which rests its entire length on beam H. To this are attached uprights, E, and on the top of each one of these uprights is a platen or follower, F, fitted to the mould or die. The uprights E are of sufficient length to carry the platens F to the top of B, and are so adjusted with the covers C that when the power is applied, the pressed bricks will be of the required dimensions, and when bricks of a less size are to be made, the pairs of followers will be taken out, as described, and those with smaller platens and longer uprights will be put in in place of the large ones. These have to be changed for each size, or the proportions of the brick would not be preserved except by more expensive changes in the machinery for applying the power. Each end of the bar D has a tenon, J, the outer ones fitting the groove of the guide-bar S, and the inner ones fitting similar grooves in the block Z.

In a press to be operated by hand, there is not sufficient movement to elevate the bricks when pressed out of the machine. To obviate this difficulty, I attach a cross-bar, y, to the bar D, and to this cross-bar, at each end, the swinging bars or arms R. These arms or bars are connected at their lower ends with the prongs Q of the levers P, which levers are pivoted to the frame at T. By depressing the levers P, the followers are separated from the beam H and elevated to the top, so that the bricks can be taken off. The covers C are fitted into the iron frame by tongues b and grooves a, fig. 1, and slide either way. By this mode of attaching them, they not only act as upper platens when the power is applied, but, when being slid into position, will cut and push off any excess of material. In order to facilitate feeding, I provide detachable hoppers, fig. 2, which are made with a sliding bottom, k, and divided into compartments or divisions, l, corresponding to the number of bricks to be made by each follower. I usually make the side-pieces m of iron, and line the bottom k with sheet iron to prevent rapid wear.

In operation, the sand, gravel, or clay is first suitably prepared, when the hopper, fig. 2, is filled. The cover C is then shoved back and the hopper placed on the machine over the moulds. The bottom, k, is then drawn out, and the material already measured off falls into the mould. (It is desirable to have several hoppers.) The cover C is then drawn or pushed to its place, which cuts off all extra material. The lever O is then depressed, which elevates the beam H and the followers, and gives the brick the required pressure. The pressure is then somewhat relaxed, when the cover can be removed sufficiently to allow the brick to pass, when the levers P are depressed and the brick forced to the top of the machine, when they are taken by a pair of tongs, such as shown at fig. 6, or otherwise, and carried away, making, in the machine shown, four bricks at each operation, while in other hand-machines which I have known it was only possible to make one at each operation. By placing a stop or catch for the lever O at its lowest position, two men can operate this machine successfully, although a greater number can work advantageously.

Having thus fully described my invention and machine, what I claim as new, and desire to secure by Letters Patent, is—

1. The followers, composed of the parts D, E, and F, in combination with the beam H, guides Z and S, and lever P, substantially as specified.
2. The arrangement of the bar D, beam H, pendants I, and rock-shaft J, with the single slotted or grooved bars S, so that the operating parts can all be readily removed, substantially as herein described.
3. The combination and arrangement of the lever O, rock-shaft J, provided with the eccentrics K, the removable standards M, and pendants I, guide-bars S, and followers D E F with frame A B, all constructed and operating substantially as specified.

LEWIS DIETERICH.

Witnesses:

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J. H. VAN ORDEN.