

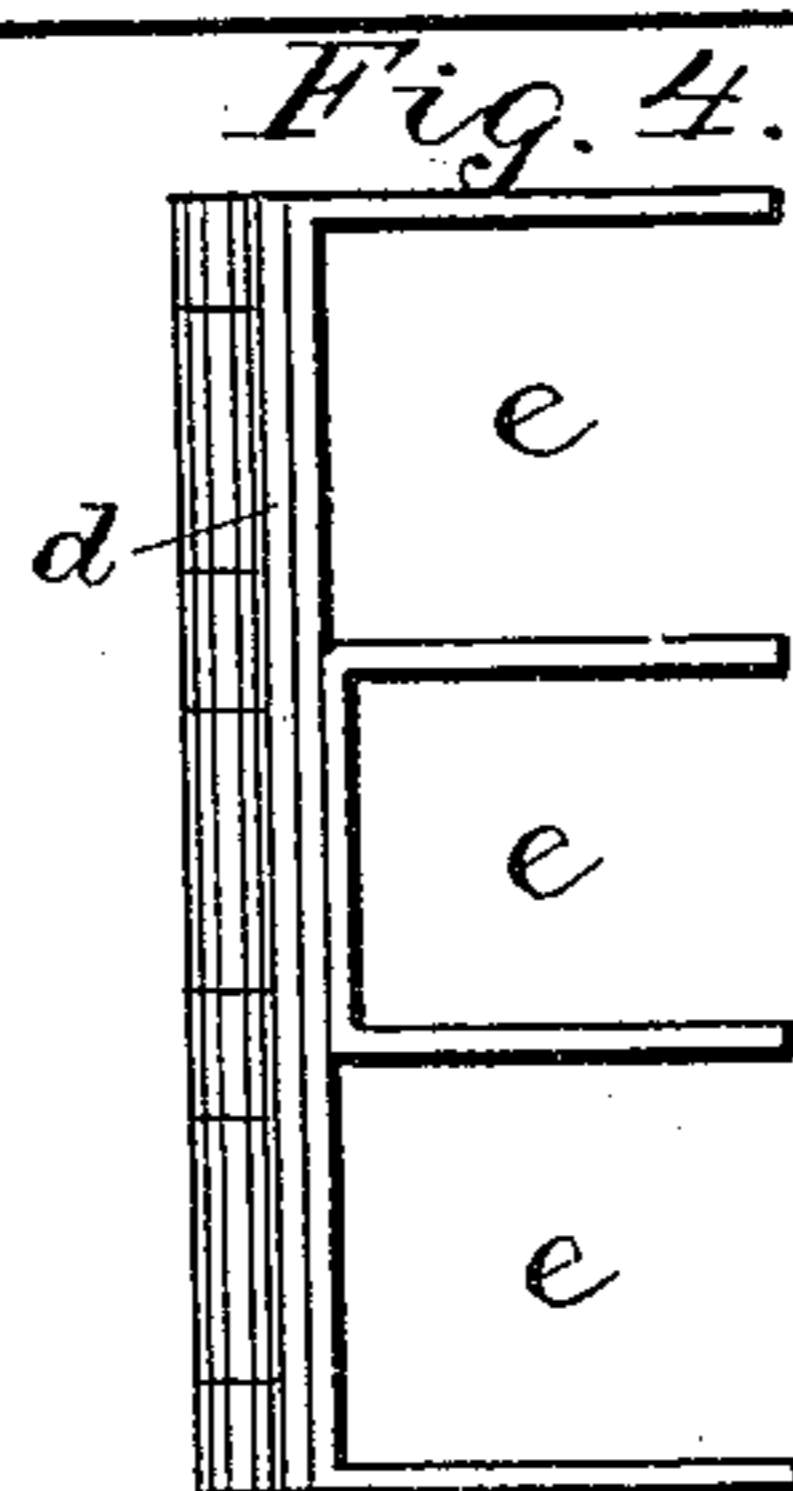
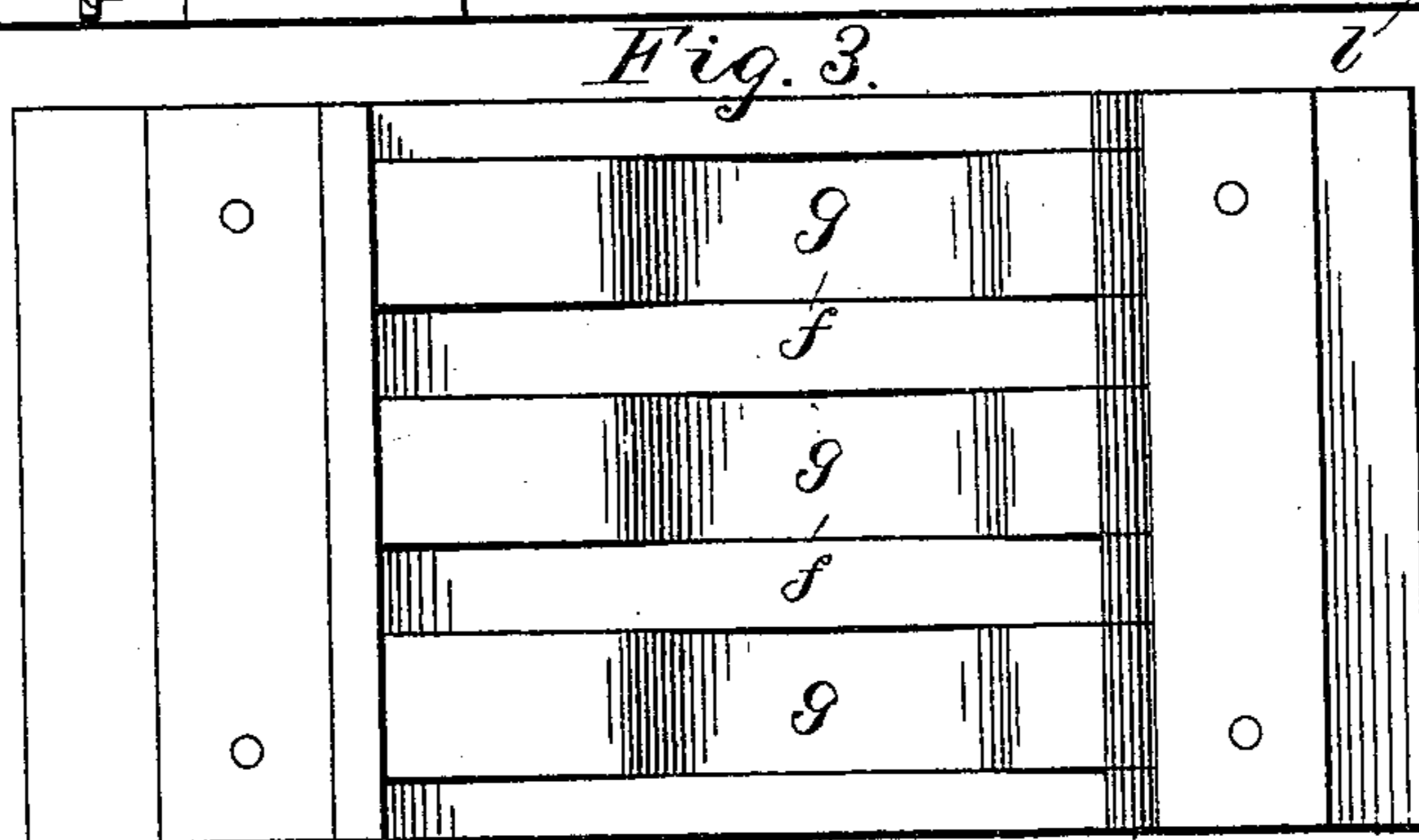
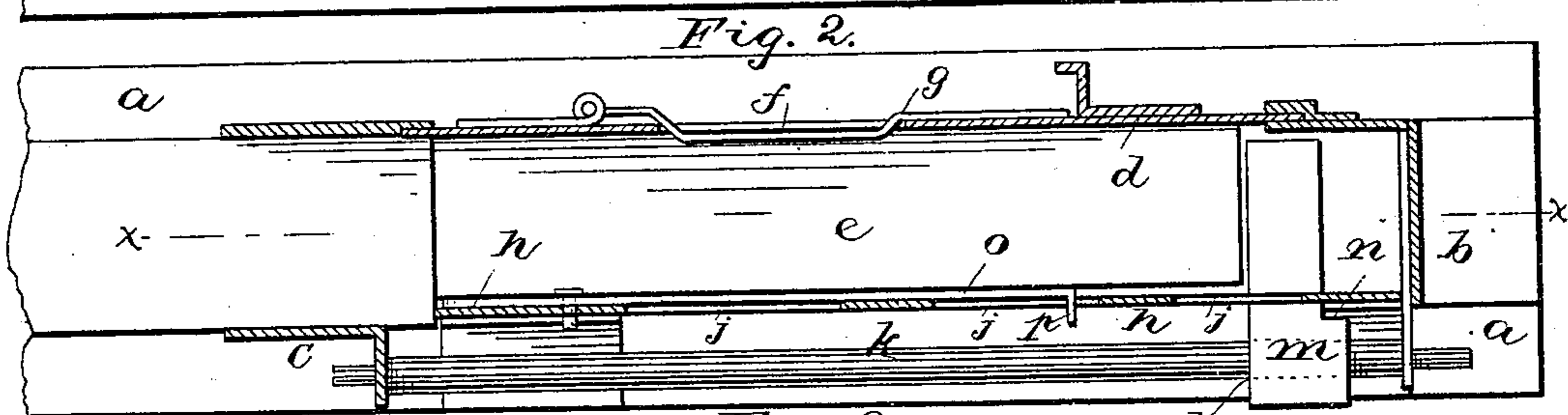
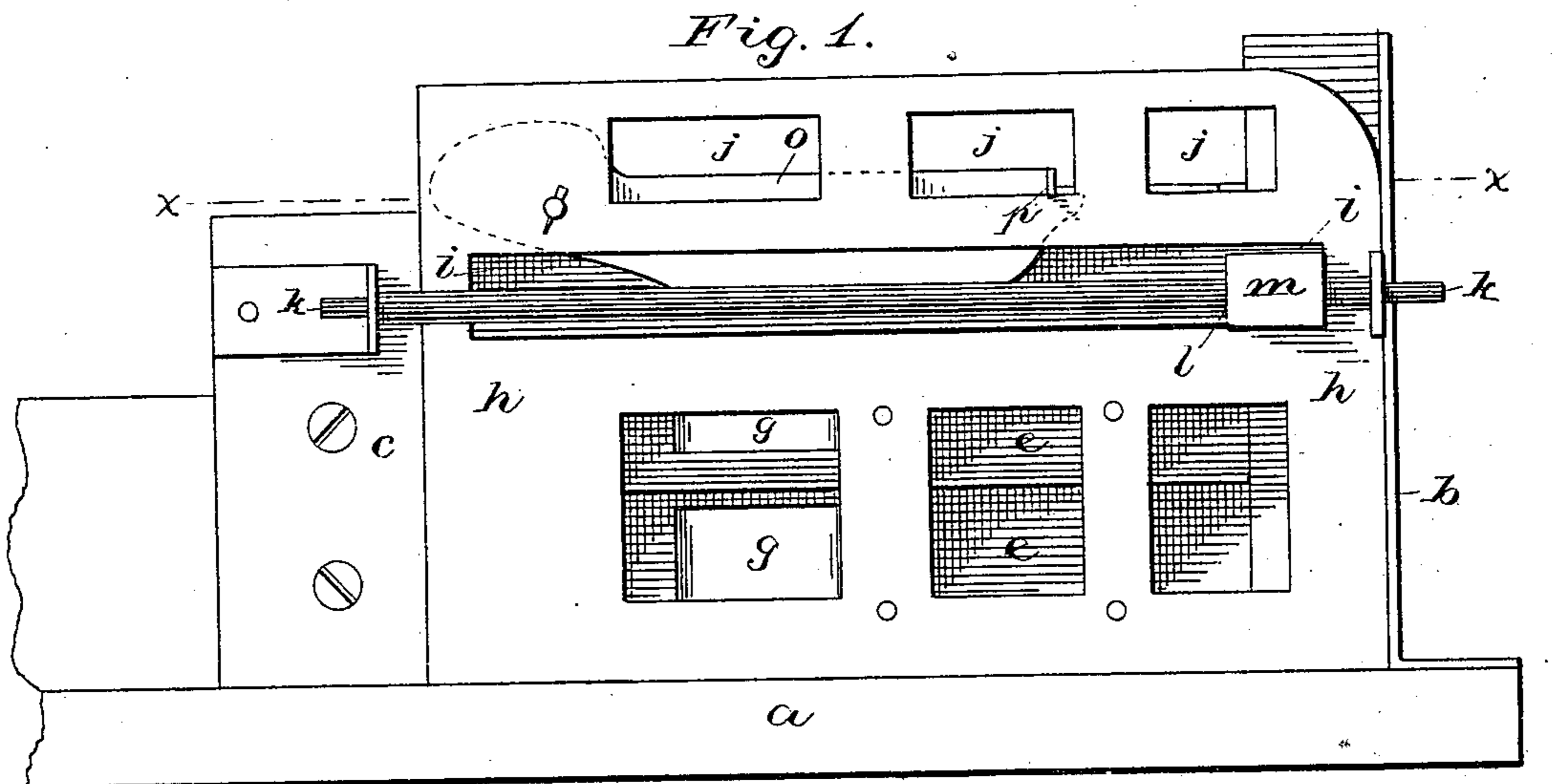
(No Model.)

L. L. LUKENS & H. HOLCROFT.

SHUTTLE BOX FOR LOOMS.

No. 250,632.

Patented Dec. 6, 1881.



WITNESSES:

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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

LEVI L. LUKENS, OF CHESTER, AND HENRY HOLCROFT, OF MEDIA, PENNSYLVANIA, ASSIGNORS TO THEMSELVES AND EMMOR L. LUKENS AND JESSE P. LUKENS, BOTH OF CHESTER, PENNSYLVANIA.

## SHUTTLE-BOX FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 250,632, dated December 6, 1881.

Application filed April 22, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, LEVI L. LUKENS, of Chester, in the county of Delaware and State of Pennsylvania, and HENRY HOLCROFT, of Media, in the county of Delaware and State of Pennsylvania, have invented a new and useful Improvement in Shuttle-Boxes for Looms; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of our improved shuttle-boxes. Fig. 2 is a section on the line *x x*, Fig. 1. Fig. 3 is a rear elevation of the shuttle-boxes. Fig. 4 is an end view of the same.

Our invention relates to improvements in shuttle-boxes for looms; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings the shuttle-boxes are arranged vertically, one above the other, each carrying a shuttle, and all secured to a common plate adapted to be raised and lowered by the Jacquard mechanism of the loom.

*a* represents the lathe of a loom, to the upper side of which are secured the uprights *b c*, provided with grooves lying opposite each other, in which the plate *d*, secured to and carrying the shuttle-boxes *e e e*, is adapted to be raised and lowered by suitable mechanism. The shuttle-boxes *e* are open on one side, and the ledges ordinarily made on the bottoms of the boxes on their open sides are dispensed with. The plate *d* is provided with slots *f*, one in each box, for the reception of springs *g*, each bent near its middle and projecting into a box. The springs are hinged to a common pintle passing through eyes in a plate secured to the back of the plate *d*, and the outward play of the springs is limited by an angular plate. The function of the springs is to hold the shuttles in place, in the oscillations of the lathe, and to prevent the rebound of the shuttles as they are driven into the boxes.

*h* represents a plate secured to one end of the lathe, between the uprights *b c*, and provided with an elongated slot, *i*, for the passage back and forth of the picker *m* in one or other of the shuttle-boxes. The plate *h* lies adjacent to and over the open sides of the shuttle-boxes, and retains the lower shuttles in their boxes. The plate *h* is preferably provided with openings near its lower end, and is provided with slots *j* near its upper end.

*k* represents a spindle having its bearing in lugs secured to the uprights *b c*, and passing through a hole, *l*, near the outer end of the picker *m*, the latter being operated in the elongated slot *i* by the picker-staff connected with the picker by the picker-strap. The picker *m* is provided with a recess, *n*, in its outer side face, which abuts against the end of the slot *i* at the end of the outward movement of the picker, so as not to interfere with the raising or lowering of the shuttle-boxes.

*o* represents a latch pivoted to the inner face of the plate *h*, over the elongated slot *i* in which the picker operates, and projecting down over the upper part of the slot *i*, to hold the shuttle in place in its box. The outer end of the latch *o* is provided with a catch, *p*, resting, when the latch is down, on the lower edge of one of the openings *j* in the upper part of the plate *h*. The picker, in its reciprocations, raises the latch *o*, which falls by gravity until its catch rests on the lower edge of one of the openings *j* in the upper part of the plate *h*.

By the above-described construction it will be seen that we dispense with the second spindle, as ordinarily used, passing through a second hole in the picker, and thereby weakening it, and that by dispensing with the second spindle we are enabled to increase the width of our picker-strap, as desired, which in itself is an important advantage.

It will also be seen that by dispensing with the ledges, as ordinarily employed, we are enabled to dispense with cutting the recess in the picker, and thereby materially weakening it.

It will further be seen that the latch securely holds the shuttle in place, and that the slotted plate holds the lower shuttles in place, and

that the elongated slot in which the picker operates holds the picker in place and guides it in its reciprocations, and that the construction is simple and cheaper than that ordinarily employed.

What we claim as our invention is—

1. The combination, with a shuttle-box having one of its sides entirely open and without ledges on its bottom, of the plate *h*, provided with an elongated slot, *i*, and latch *o*, pivoted over said slot, substantially as described, and for the purpose set forth.
2. The combination, with a shuttle-box hav-

ing one of its sides entirely open and without ledges, of the plate *h*, provided with an elongated slot, *i*, and slots *j*, latch *o*, pivoted over said slot, a single spindle, *k*, passing through a hole in the picker, and picker *m*, provided with a hole for the passage of the spindle, substantially as described, and for the purpose set forth.

LEVI L. LUKENS.  
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Witnesses:

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