A. R. Nixon.
Hand Loom

No. 25,756. Patented Oct. 11, 1859.

Witnesses
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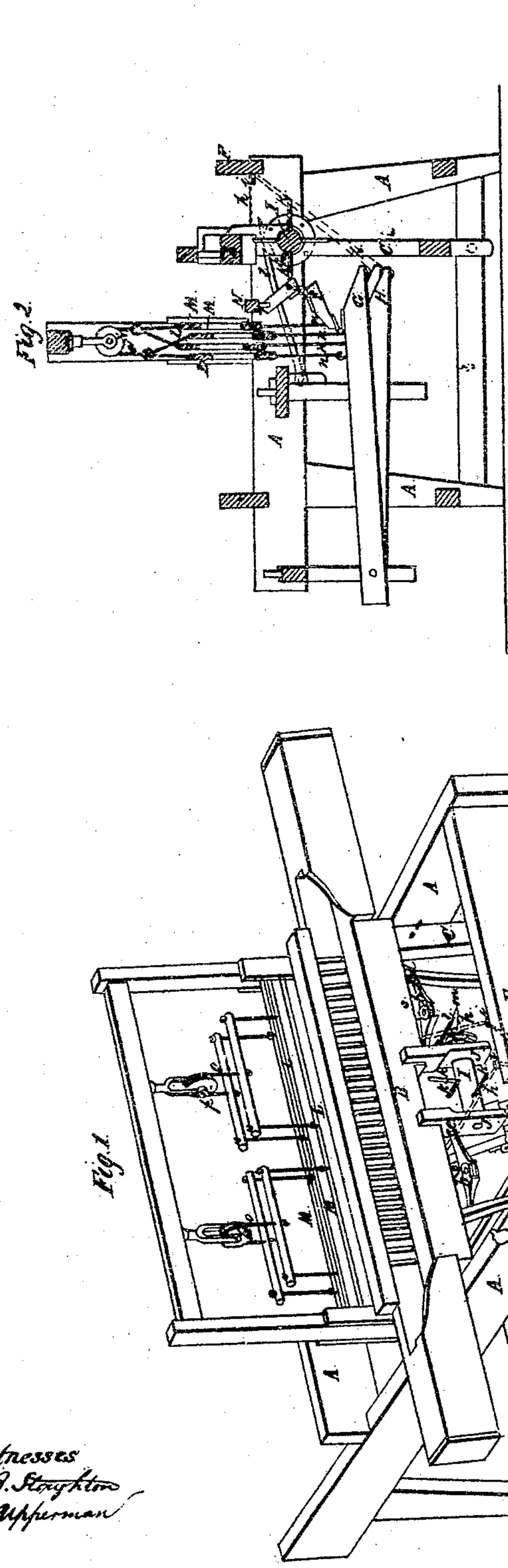
Fig. 1.

Fig. 2.

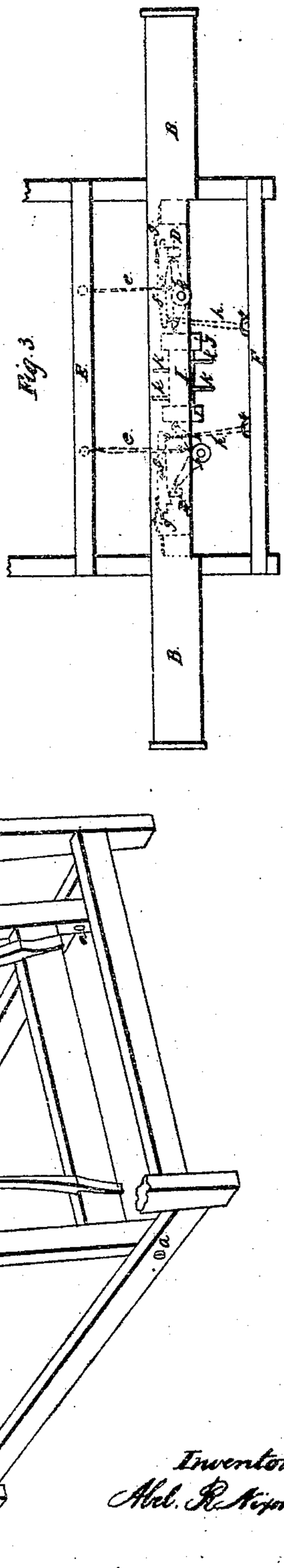
Fig. 3.

THE ECKERT LITHOGRAPHING CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ABEL R. NIXON, OF RHEA SPRINGS, TENNESSEE.

HAND-LOOM.

Specification of Letters Patent No. 25,756, dated October 11, 1859.

To all whom it may concern:

Be it known that I, ABEL R. NIXON, of Rhea Springs, in the county of Rhea and State of Tennessee, have invented certain new and useful Improvements in Hand-Looms; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, represents a perspective view of the loom. Fig. 2, represents a vertical section through the same, Fig. 3, represents a top plan of the lay.

Similar letters of reference where they occur in the separate figures denote like parts of the loom in all the figures.

I am aware that, in hand, as well as in power looms, the shuttle, as well as the harness have been operated from the lay. But the devices heretofore used in hand looms for effecting this object, have required so much power to operate them, as to place this kind of loom beyond the physical ability of a female to operate them for any length of time, as their strength is not equal to the task. Disclaiming therefore this general principle of operation, I rest my invention upon the devices I use for setting and tripping the picker-staffs, and for working the harness treadles from the lay, by which I render the loom much more easily worked by hand, and bring it within the physical endurance of female strength or labor.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A, represents the frame of the loom.

B, is the lay beam; it is pivoted through the arms C, C, to the frame, at the points *a*, *a*, in the usual well known manner, so as to vibrate over the top of the frame.

D, D, are the picker-staffs, made of suitable elastic material, so as to be strained up and set, and throw the shuttle by their recoil, when tripped. On the underside of the lay beam B, are two toggle or progressive levers *b*—*b*. One end of each is pivoted or hinged, as at *c*, *c*, to the lay beam, or a piece attached thereto, and the other ends respectively to the picker staffs, as at *d*, *d*. At or near the center, or hinged portion of the toggle levers (the hinge being a rule-joint hinge), is fastened a cord, or strap *e*, *e*, the other ends of which are fastened to the cross piece E, of the loom frame. And underneath the lay beam is also pivoted a trigger *f*, in close proximity to each of the toggle-levers. These triggers are held up to the upper ends of the picker staffs respectively by springs *g*, *g*, and their ends are furnished with a series of notches, or sears, that catch and hold the picker-staffs, as they are forced out in that direction by the straightening of the toggle levers *b*, *b*. To one end of each of these triggers are fastened cords or straps *h*, *h*, which pass through guides or dead-eyes *i*, *i* on the cross piece F, of the frame and thence to the pairs of treadle levers G G, and H, H, to which they are respectively fastened so that the depressing of either of the pair of treadle levers to form the shed, shall strain up one of the cords, which in turn draws the trigger away from its picker-staff, releasing the pickerstaff, and its recoil driving the shuttle through the shed so formed. The operation of these several parts are shown in Fig. 3, as also partially shown in Figs. 1 and 2.

I, is a shaft, hung in supporting pieces J, J, attached to the lay beam B. On this shaft are tappets *k*, for working the treadle levers, and through them the harness frames for forming the sheds. A dog *l*, is hinged to the frame, and its hook, reaches over a ratchet *m*, on the journal of the shaft I, so as to turn said shaft at stated and regular periods. The treadle levers G, and H, are pivoted at the rear of the loom frame in the usual way; and near their front ends are fastened the cords or straps *n*, that connect them with the harness frames L, M, in pairs—said pairs being united above by cords *o*, running over pulleys *p*, *p*, in the usual well known way.

The front ends of the treadle levers, are furnished with toggle or progressive levers *q*, which have a rule-joint hinge in them, as those *b*, heretofore described, one end of each of said toggle levers being hinged to its respective lever, and the other end hinged at *r* (Fig. 2) to the cross piece N, of the frame. The tappets *k* strike these toggle levers *q*, near their center hinge and straightening the toggle, depresses the treadle connected to it, and thus works the harness, and the sheds at proper times for the flying of the shuttle.

The operation is obvious, the straining or tension of the cords *e* springs and sets the

pickerstaffs, and the tension on the cords *h* releases the pickerstaffs, which drives the shuttle. The loom and its operations are simple, but its greatest saving is in the ease with which its several parts are driven from the beat of the lay—the progressive levers, and their several connections affording and most readily applying the necessary power to drive the loom without wearying the user, which in the present hand looms of this construction is their greatest defect.

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

1. In combination with the lay beam, and spring pickerstaffs, the toggle levers *b*, *b*, triggers *f*, *f*, and flexible connections *e*, *h*, for effecting the setting, and tripping of the pickerstaffs, substantially as described.

2. And I also claim in combination with the lay, and the treadles for working the harness or sheds, the toggle levers *q*, and trigger cords *h*, so that the shed shall be properly made, before the trigger is drawn to let the shuttle fly, thus insuring a perfect sequency of operation and with great saving of manual labor, on the part of the operator as set forth.

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Witnesses:
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