J. Miller,

Hand Loom.

No. 108,281. Patented Oct. 11, 1870.

Fig. 1.

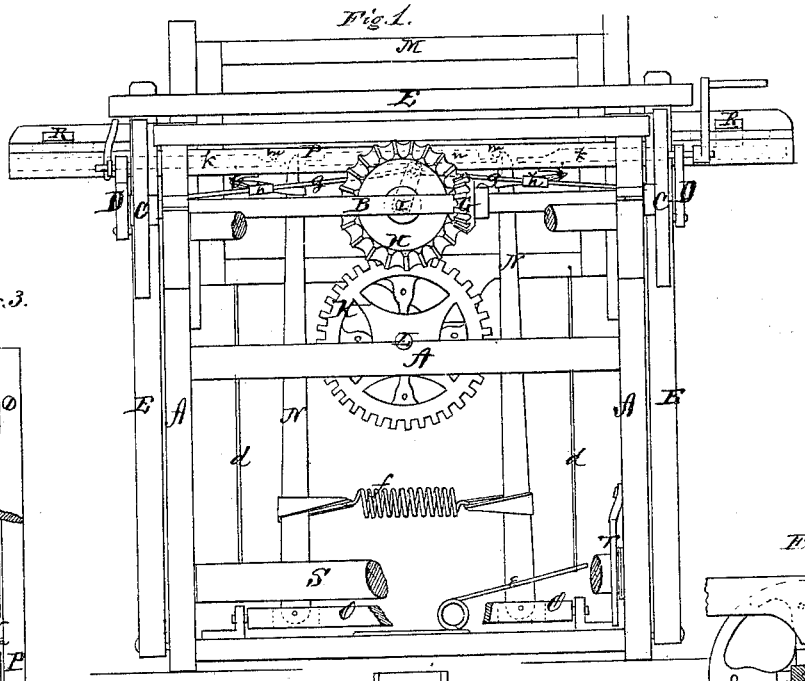


Fig. 3.

Fig. 4.

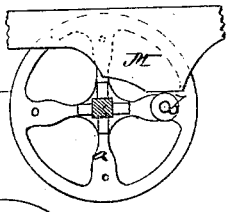
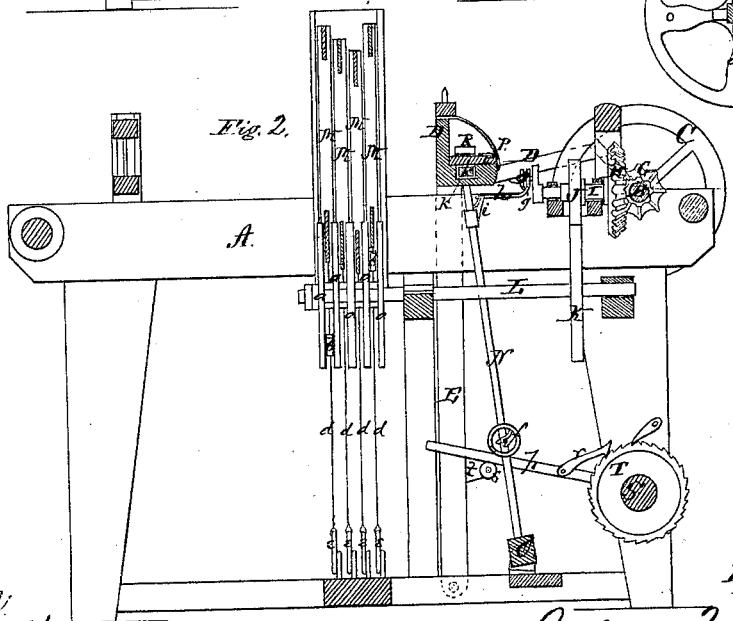


Fig. 2.



Witnesses;

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United States Patent Office.

JOHN MILLER, OF ELDRIDGE, ILLINOIS.

Letters Patent No. 108,281, dated October 11, 1870.

IMPROVEMENT IN LOOMS.

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, JOHN MILLER, of Eldridge, in the county of Edgar and in the State of Illinois, have invented certain new and useful Improvements in Hand-Looms; 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 my invention consists in the construction and general arrangement of the parts of a hand-loom, as will be hereinafter fully set forth.

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

Figure 1 is a front elevation, and

Figure 2 a longitudinal vertical section of my loom.

Figure 3 is a plan view of the batten and shuttle-race; and

Figure 4 is a front view of a portion of the headle-frame, with mechanism for operating the same.

A represents the frame of my loom, at the front end of which, in suitable journal-boxes, is placed a shaft, B, provided at each end with a crank-wheel, C, one or both of which have cranks for turning the same.

The wheels C C are, by means of pitmen, D D, connected with the batten E, so as to give it the necessary reciprocating motion.

On the shaft B is placed a miter-pinion, G, which gears with a miter-wheel, H, placed upon a shaft, I, which runs at right angles with the main shaft B.

Upon the shaft I is a cog-wheel, J, which gears with another cog-wheel, K, placed upon a shaft, L, below and parallel with the former shaft.

On the rear end of the shaft L are keyed, or otherwise secured, a series of wheels, *a a*, provided, at suitable points, each with a pin and friction-roller, *b*, for operating the headle-frames, M M, which are formed with curved inclines, as shown in fig. 4, on their under sides, for the rollers *b b* to work upon.

At the lower ends of the headle-frames M M are cords, or wires, *d d*, connecting with springs, *e e*, to bring them down again after the cams *a* have acted upon them to raise them up.

N N are the picker-staffs, which are pivoted in a rocking bar, O, in front of the batten, and are connected by a spring, *f*, as shown in fig. 1.

The upper ends of the picker-staffs N N pass through slots in the bottom of the shuttle-race *p*, and by the motion back and forth of the batten they are made alternately longer and shorter, or rather, the ends that project into the shuttle-race are made alternately longer and shorter.

On the end of the shaft I is a crank, which moves two rods, *g g*.

Each of these rods is provided with an arm, *h*, which, by a strap, *i*, is connected with the picker-staff.

The upper end of each picker-staff is connected with a bar, *k*, said bars being placed one at each end within the shuttle-race, and having the shuttle-driver R attached to it.

There is also a pin, *m*, within the shuttle-race, for each picker-staff, and a central movable bar, *n*, between said pins.

When the loom is in operation, the rods *g g*, with their connecting-straps *i i* draw the picker-staffs alternately toward the ends of the shuttle-race. This is done when the batten is moving backward, so that the picker-staff, which is being drawn toward its end of the shuttle-race, will, as soon as the batten moves forward again, slip under and outside of its pin *m*, and consequently be retained there until the next stroke of the batten backward, when the spring *f* will throw this staff suddenly inward, as soon as the upper end of the staff clears the pin *m*.

By this sudden movement of the staff, the movable bar *n* is thrown violently against the upper end of the other staff, assisting in bringing it under and on the outside of its pin *m*, to be acted on in precisely the same manner.

The upper ends of the picker-staffs being connected with the bars *k k*, said bars and the shuttle-drivers follow the motions of the staffs, and in this manner the shuttle is thrown from side to side.

The cloth-roller, S, is operated by means of a lever, *p*, and spring pawl, *r*, which catches on a ratchet-wheel, T, at the end of said roller, the lever *p* resting upon a friction-roller, *s*, attached to an arm, *t*, on the batten, as shown in fig. 2.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the headle-frames M M, constructed as described, and operated by means of the friction-rollers *b b*, on the wheels *a a*, the cords or wires *d d*, and springs *e e*, arranged and operating substantially as and for the purposes herein set forth.

2. The arrangement of the picker-staffs N N, and the batten E, the staffs being pivoted or hung in front of the batten so as to be operated by the back and forward motion of the batten, substantially in the manner and for the purposes herein set forth.

3. The arrangement of the picker-staffs N N, spring *f*, straps *i i*, arms *h h*, and rods *g g*, operated by means of the crank on the end of the shaft I, substantially as and for the purposes herein set forth.

4. In combination with the above, the bars *k k*, shuttle-drivers R R, pins *m m*, and central bar *n*, all arranged and operating substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 18th day of January, 1870.

JOHN MILLER.

Witnesses:

P. YEARGIN,

B. WILLIAMS.