

W. H. JACKSON & G. MERRILL.
LOOM.

No. 77,619.

Patented May 5, 1868.

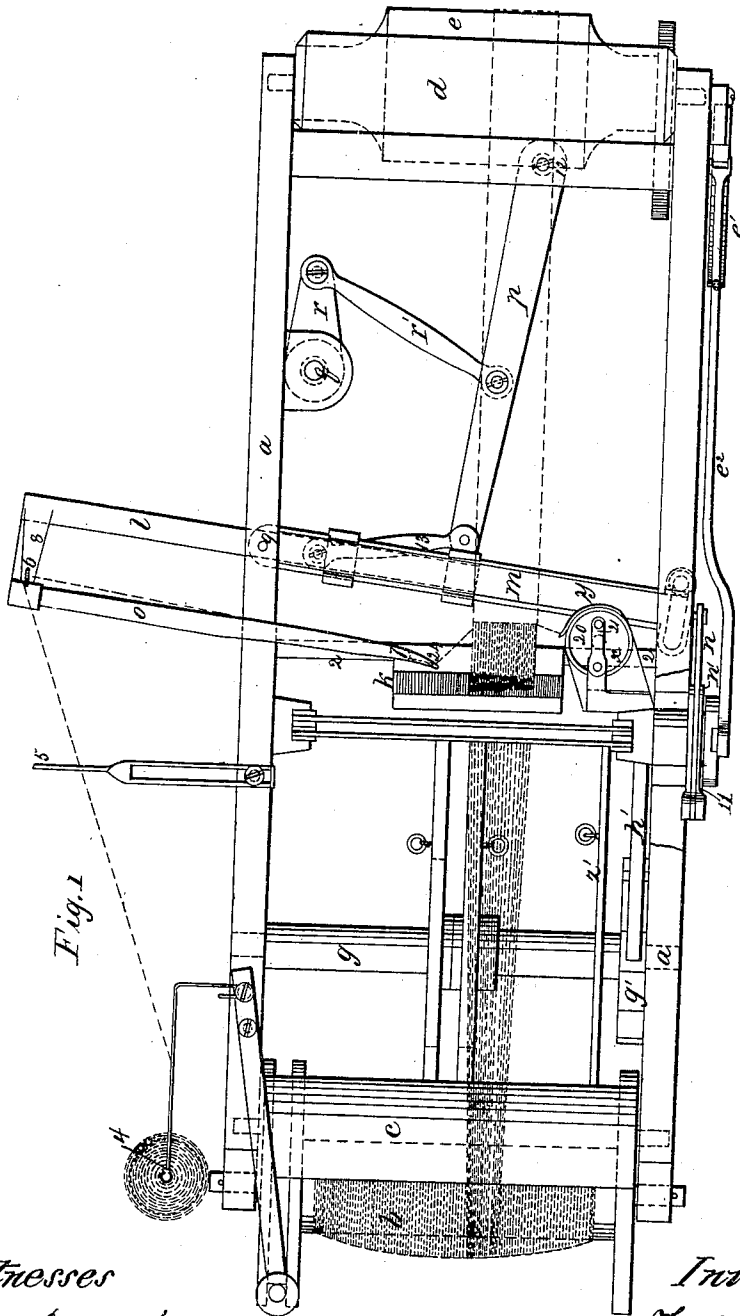


Fig. 1

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Chas. H. Smith

Inventors
W. H. Jackson
Geo. Merrill

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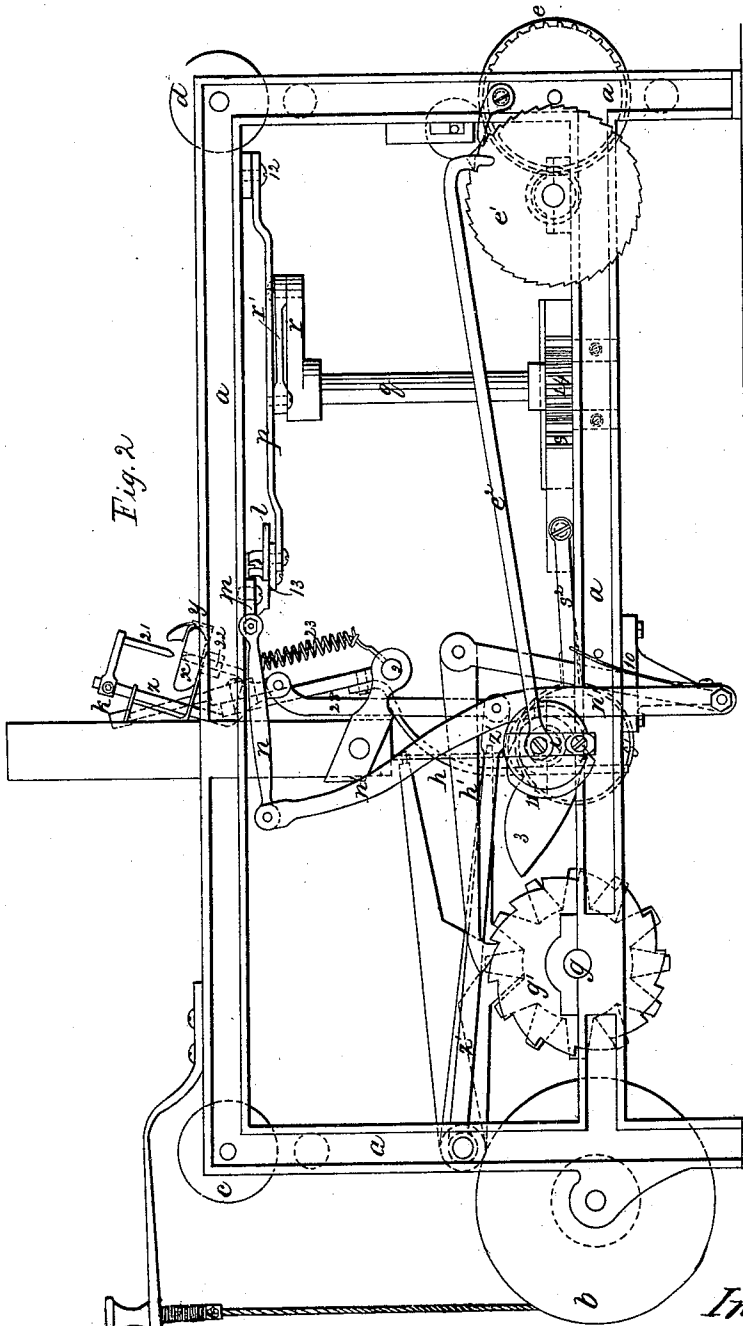


Fig. 2

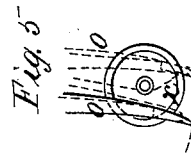
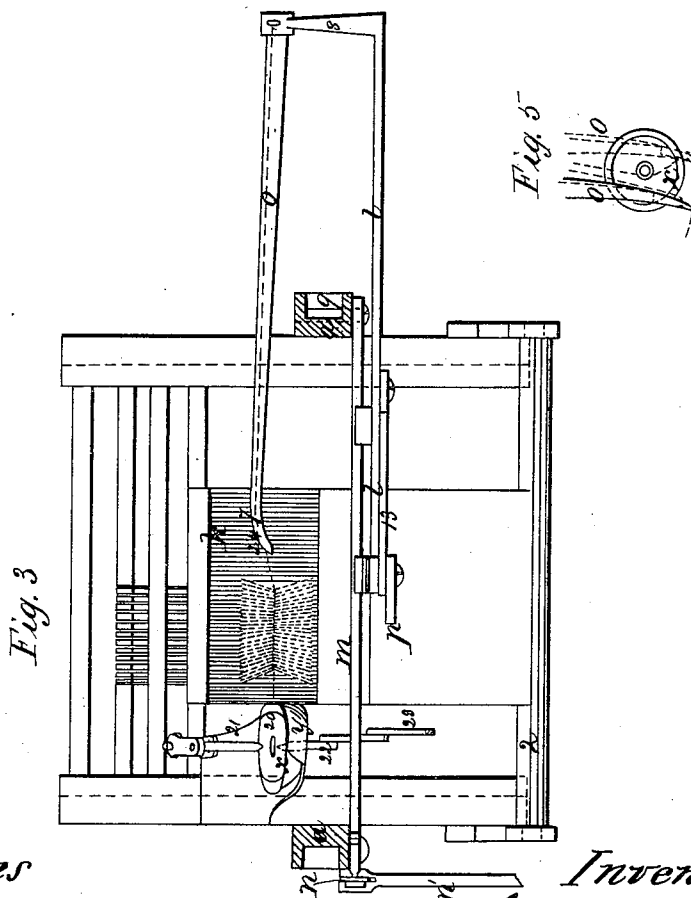
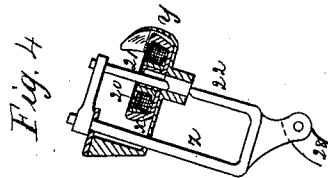
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United States Patent Office.

W. H. JACKSON, OF BROOKLYN, NEW YORK, AND GEORGE MERRILL, OF NEWBURYPORT, MASSACHUSETTS, ASSIGNORS TO MERRIMACK LOOM COMPANY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 77,619, dated May 5, 1868.

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 we, W. H. JACKSON, of Brooklyn, in the county of Kings, and State of New York, and GEORGE MERRILL, of Newburyport, in the county of Essex, and State of Massachusetts, have invented and made a certain new and useful Improvement in Looms for Weaving; and we do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a partial plan of our said loom.

Figure 2 is a side elevation of the same.

Figure 3 is an elevation, transversely of the loom, of the needle that carries the weft-thread and the parts connected therewith, and

Figure 4 is a section through the shuttle and its sustaining points.

Similar marks of reference denote the same parts.

Our invention relates to that class of looms in which the weft or filling-thread is carried by a needle through the shed, and interlocked by a shuttle-thread, returning to its normal position before the shed changes.

Instead of throwing a shuttle through the weft-thread when the needle is projected through the shed, we cause the point of the needle to pass through the shed near the reeds, where it is wide, and there is ample room for the needle, without risk of its point coming into contact with the warps, and then give the needle a swinging movement, that passes its end around a standing shuttle or bobbin, the needle returning through the shed or being drawn out near the point of weaving, so that the lay has to move the weft-thread but a short distance, and the selvage on one side is formed by the interlocking of the weft-thread with the thread from the shuttle or bobbin.

In the drawing, *a* represents the loom-frame; *b*, the yarn-beam; *c*, the whip-roller; *d*, the breast-roller; *e*, the cloth-roller and take-up, actuated by the ratchet-wheel *e'* and ratchet *e''*, actuated from the main shaft *i*, in any convenient manner.

g is the cam-shaft and cams, to work the foot-levers of the heddles *h*, the shaft *g* being actuated by the pawl *h'* to the wheel *g'*.

The parts thus far described may be of any usual character, construction, or size, and, as they form no part of our invention, are only introduced to illustrate the connection in which our invention is employed.

The rod *k* is set to swing on the axis 2, and moved by a cam, 3, at the proper time, and thrown back by the spring 23, or other device.

The weft-thread passes from a suitable cop, bobbin, or spool, through the eyes 4, 5, and 6, along the needle *o*, and through the eyes 7 and 24 at its end, said end being bent downwards, as seen in fig. 3.

The needle *o* is carried by an arm, 8, from the slide *l*, that is set upon the lever *m*, and can be slid back and forth on said lever *m*.

This lever *m* is connected at one end by a bolt, 9, that forms its fulcrum. At the other end a slot and pin or screw, seen by dotted lines in fig. 1, determine the amount of vibrating movement that may be given to that end of said lever by the link *n*, lever *n'*, spring 10, and cam 11, on the shaft *i*.

The slide *l* and needle *o* are reciprocated upon the lever *m*, by the lever *p*, having its fulcrum at 12, and connected by the link 13 to the slide *l*.

q is a vertical shaft, with an arm, *r*, linked by *r'* to the lever *p*, and this shaft *q* is partially rotated by its pinion 14, acted upon by the rack *s*, that is reciprocated by a link, *s'*, and eccentric *s''* on the shaft *i*.

These parts being properly timed, the needle *o* stands in the position shown in fig. 1, when the shed is opened, the needle is then projected through the shed, and its point passes beyond the shuttle *x*, and at this moment the cam 11, moving the lever *n'*, link *n*, and lever *m*, causes the hooked point of the needle to move across over the shuttle *x*, as illustrated in Figure 5, drawing its weft-thread below such shuttle, and as the

needle draws back the filling-thread draws from below and around such shuttle, and is kept from being pulled again out of the shed by a selvage shuttle-thread drawn off a bobbin, 20, in the shuttle *x*.

The shuttle *x* lies in a recessed shuttle-holder, *y*, and it is formed to receive the movable bobbin 20, upon which thread or yarn is wound, the centre pipe of the bobbin forming the axis on which the bobbin unwinds, as the thread is drawn off through holes in the shuttle-case that produce the desired friction on the thread.

We provide the reciprocating slide *z* with fingers 21 and 22, and this slide *z* is moved by the link 28, attached to the lever *z'*, which latter is operated by a cam on the shaft *i*.

At the time that the needle *o* passes over the shuttle, the fingers 21 22 are raised so that the said needle passes between their ends, after which said fingers are drawn down, the upper finger entering the central hole of the shuttle, and the lower finger drawing out so as to allow the weft-thread to draw out from below the shuttle, and in order to relieve the weft-thread from friction between the shuttle and the edge of the shuttle-holder, we form the finger 21, so that in entering the hole in the shuttle, said shuttle shall be pressed back. Fig. 5 illustrates this feature, the fingers 21 and 22 being pointed, and the finger 21 is set back from the line of the finger 22.

At the edge of the shuttle-holder is a notch forming a hook, beneath which the thread from the shuttle draws out to the selvage. This hook prevents this side of the shuttle being lifted by the loop of weft-thread passing below it, hence the shuttle will retain its position, and the weaving-operation be performed with certainty and reliability, as before mentioned.

What we claim, and desire to secure by Letters Patent, is—

1. The mechanism, substantially such as described, for operating a weft-carrying needle, so that its point shall pass through the wider part of the shed, and return near the point of weaving, substantially as and for the purpose set forth.

2. We claim a loom having a weft-carrying needle, arranged and operated substantially as described, so as to pass its eye through the shed obliquely, or near the beater, when the latter is thrown back, then around a stationary bobbin, located at the opposite edge of the shed, and thence back through the shed to the place of starting, substantially as set forth.

3. The combination of the shuttle-holder *y*, the reciprocating fingers 21 and 22, bobbin *x*, and the weft-carrying needle, when said parts are constructed and arranged for joint operation with the mechanism of a loom, substantially as is herein described.

In witness whereof, we have hereunto set our signatures, this tenth day of October, A. D. 1867.

W. H. JACKSON,
GEO. MERRILL.

Witnesses:

GEO. D. WALKER,
CHAS. H. SMITH.