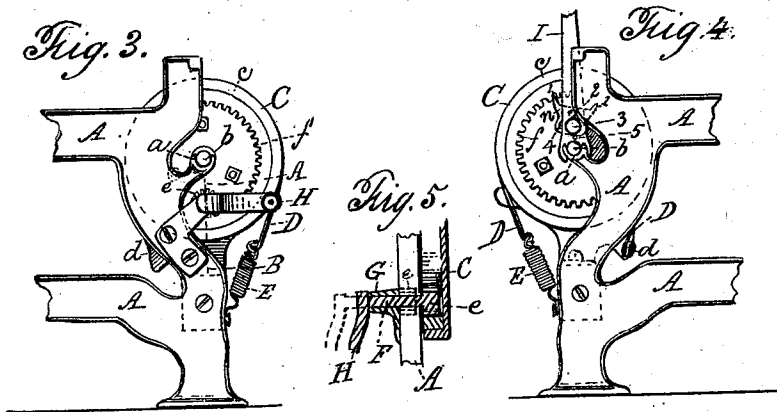
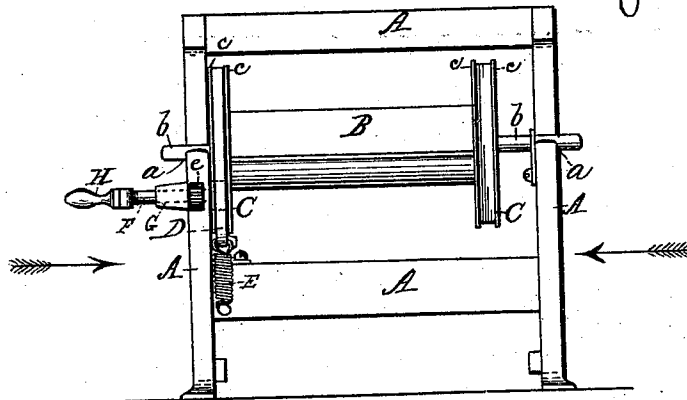
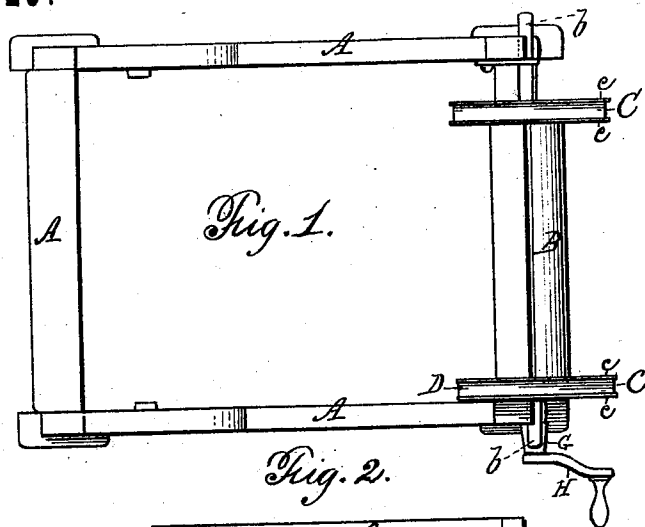


L. J. KNOWLES.

MECHANISM FOR REWINDING THE WARP IN LOOMS.

No. 172,926.

Patented Feb. 1, 1876.



WITNESSES;

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IMPROVEMENT IN MECHANISMS FOR REWINDING THE WARPS IN LOOMS.

Specification forming part of Letters Patent No. **172,926**, dated February 1, 1876; application filed November 27, 1875.

To all whom it may concern:

Be it known that I, LUCIUS J. KNOWLES, of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Mechanism for Rewinding the Warp in Looms; and I do hereby declare that the following is a full, clear, and exact description of same, reference being had to the accompanying drawings forming a part of this specification, and in which—

Figure 1 represents a top or plan view of so much of a loom as is necessary to illustrate my present invention. Fig. 2 represents a rear view of the parts shown in Fig. 1. Fig. 3 represents an end view of a section of the loom shown in Fig. 1, looking in the direction indicated by arrow 1, Fig. 2. Fig. 4 represents an end view of a section of the loom shown in Fig. 2, looking in the direction indicated by arrow 2, Fig. 2, and Fig. 5 represents a section on line A B, Fig. 3.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my present invention consists in the combination, with the loom and loom-beam, of mechanism whereby the operative can easily and readily move the beam forward or back without loosening the friction-strap, as will be hereafter explained.

In the drawings, the parts marked A represent the loom-frame, in the rear of which is supported, in proper bearings *a a*, the journals *b b* of the loom-beam B, the heads C C of which are provided with flanges *c c*, for the reception of friction-straps, one of which is shown at D, one end of strap D being fastened to a lug or projection, *d*, on the loom-frame, while to the other end of the strap is secured one end of a spring, E, the other end of the spring being fastened to the loom-frame. By this means the desired friction can be put upon the loom-beam to regulate and give the proper tension to the warp-threads while the loom is in operation. By having holes in the friction-straps, and a proper hook in one end of the spring, the tension or friction can be lessened or increased, as desired. It is often necessary, when the loom has been running

without filling, or when there has been a "pick-out," that the loom-beam should be turned back so as to draw the warp-threads back while the lay is standing still, and in order to do this it is necessary, as the operation has heretofore been performed, for the operative to either unhook the springs E or stretch them so as to loosen friction-straps D sufficiently to let the beam and warp-threads turn back the necessary distance before the loom is put into motion again. These operations are both objectionable, since to stretch the springs sufficiently requires much power, besides subjecting the springs to an unequal and dangerous strain, while the unhooking operation is attended with like disadvantages and objections. Then again, the operative's hands, in either case, are liable to become soiled in handling the springs, straps, and heads of the beam. To obviate these and other objections, I arrange a small shaft, F, in a pipe or other bearing, G, secured to the side of the loom-frame A, and which shaft carries upon its inner end a small spur-gear, *e*, to mesh into gear *f* on the head C of the beam B, when pushed in, as shown in Fig. 5, but which can be withdrawn, as indicated in dotted lines, same figure. To the outer end of shaft F is secured a crank-arm, H. It will be seen that by this arrangement the operative can take hold of crank-arm H and push shaft F and gear *e* in, as shown in full lines, Fig. 5, so as to cause gear *e* to mesh with gear *f* on the beam-head. By turning crank-arm H, when the parts are in this position, the operative can easily and quickly turn the beam backward or forward, as desired, and that too without the liability of soiling the hands, or injuring or displacing the springs.

A modification of the mechanism for accomplishing the same object is shown in Fig. 4, where the part marked I represents a lever, the upper end of which is shown broken off. The lower end of lever I is rounded out to fit the journal *b* of loom-beam B. Said lever has also combined with it a swinging dog-piece, *n*, having two forks, 1 1. Dog-piece *n* is pivoted at 2 to the inside of the lower end of lever I, and within a projecting-hub, 3, upon the lower end of lever I is arranged a spring, which works in a slot or groove, 4, in the

outer lower side of dog-piece *n*, whereby when dog-piece *n* is rocked back and forth on its pivot 2 it will be held in either of its extreme positions by said spring and a small pin, 5, placed in the lower end of lever I.

The operation of turning the beam back by this device is as follows: The operative takes the lever and slips the rounded-out end upon journal *b* of the beam, with dog *n* tipped to the right, as shown in Fig. 4, so that the left-hand fork will take into gear *f* on the beam-head, as indicated in Fig. 4. As lever I is vibrated back and forth, when the parts are in this position, the left-hand fork will slip over the cogs of gear *f* when lever I is turned forward, but when lever I is turned back pin 5 holds the left-hand fork into mesh with gear *f*, and the beam is consequently turned back. When it is desired to turn the beam forward, dog *n* is rocked to the other extreme, so that the right-hand fork will come into mesh with gear *f*. It will then be seen that the operative can very easily and readily

turn the beam in either direction with this simple and detachable device, and which device can be used by several operatives, and in this respect it has advantages over the device shown in Fig. 5.

Those skilled in the art to which my invention belongs will readily understand that various devices for turning the beam by power applied to gear *f* may be employed or substituted in lieu of the devices shown in Figs. 4 and 5.

Having described my improvements in looms, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

The combination, with the loom-frame A, and gear *f* on beam-head C, of sliding shaft F, gear *e*, and crank-arm H, substantially as and for the purposes set forth.

LUCIUS J. KNOWLES.

Witnesses:

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