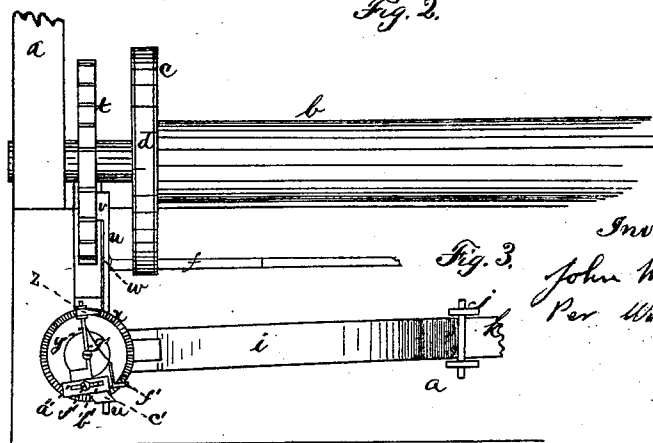
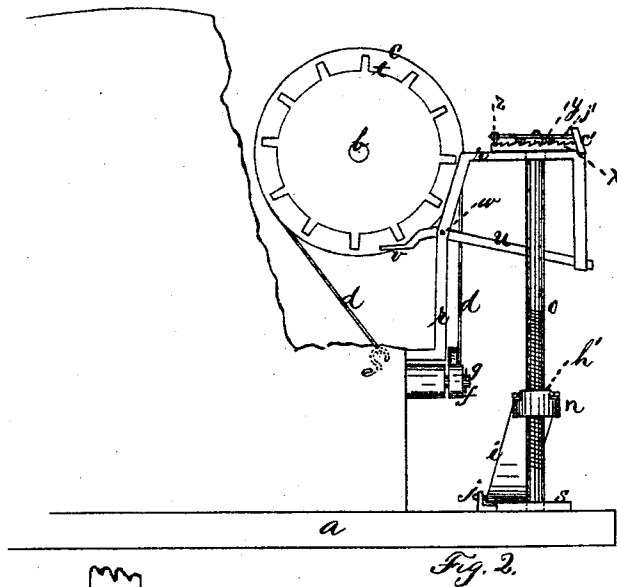
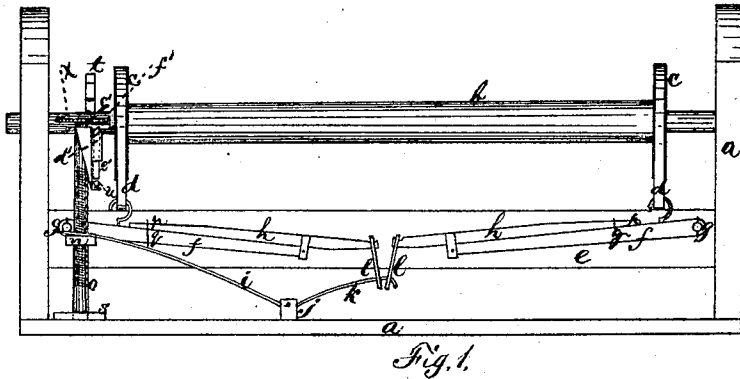


J. M. LINSKOTT.
Loom Let-off Mechanisms.

No. 141,720.

Patented August 12, 1873.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN M. LINSCOTT, OF BUXTON, MAINE.

IMPROVEMENT IN LOOM LET-OFF MECHANISMS.

Specification forming part of Letters Patent No. **141,720**, dated August 12, 1873; application filed June 26, 1873.

To all whom it may concern:

Be it known that I, JOHN M. LINSCOTT, of Buxton, in the county of York and State of Maine, have invented certain new and useful Improvements in Friction Attachments to the Yarn-Beams of Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side view; Fig. 2, an end view, parts broken away; Fig. 3, a top plan, parts broken away.

Same letters show like parts.

The object of my invention is to produce an improved friction attachment to the yarn-beams of looms for weaving cloth.

I will first describe its construction: In the drawing, *a* shows the machine-frame; *b*, the yarn-beam, the ends of which have bearings in the machine-frame. On this yarn-beam are the rolls or trucks *c*, around which pass the friction-bands *d*. The inner ends of these friction-bands are attached to the cross-piece *e* of the machine-frame—the outer ends to the levers *f*. These levers are pivoted to the cross-piece at *g*, and have pivoted to their opposite ends the supplemental levers *h*. A spring, *i*, is attached to the bottom of the machine-frame at *j*, and is bent, as shown in Fig. 1. The short end *k* of the spring is connected with the levers *h* by the links *l*. The long end is made prong-shaped, (see Figs. 2 and 3,) and rests on a nut, *n*, attached to a screw-rod, *o*, hereinafter described. The outer ends *p* of the supplemental levers *h* are fastened to the levers *f* by the links *q*, as shown. *r*, Fig. 2, shows a metal frame, which is fastened to the machine-frame *a*. This frame is of the form shown in Fig. 2, or may be of any convenient form or shape. *s* shows a step on the bottom of the machine-frame. The screw-rod *o* passes down through the metal frame, and rests in the step *s*, as shown. Rigidly attached to the shaft of the yarn-beam, and in the position shown in the drawings, is the cog-wheel *t*. Pivoted to the metal frame is the lever *u*. This lever has at its rear end a step, *v*. As the cog-

wheel *t* revolves, as must also the yarn-beam at the same time, the cogs strike the step *v*, and cause the lever *u* to tip upon its pivot *w*. On the upper end of the rod *o* is the ratchet-wheel *x*. Pivoted to the top of the rod *o*, and above the ratchet-wheel *x*, is the frame *y*, provided at its inner end with the ratchet-pawl *z* to fit the ratchet-wheel *x* at its outer end with a piece, *a'*, said piece being provided with a slot, *b'*, and an inclined part, *c'*. This piece is fastened by a screw passing down through the slot *b'* and into the frame *y*. To the side of the metal frame *r* is an additional frame, *d'*, in which slides an upright or vertical bar, *e'*. There is also attached to the metal frame *r* a piece, *f'*, which is bent up over the ratchet-wheel, as shown, and carries on its inner end a spring, *g'*. This spring rests against the frame *y*. (See Fig. 3.) The rod *o* is threaded, as shown. The nut *n* fits the threaded rod. This nut is of the form or shape illustrated in Fig. 2—that is to say, it is a nut of the ordinary form, having on its upper edge a projecting part, *h'*. This projecting part the prongs of the spring *i* fit over and prevent the nut turning while the rod is being turned. The rod *o* is loosely set in the step *s*, so as to admit of its easy rotation.

Having thus described the construction of my machine, I will next proceed to describe its operation: The yarn-beam *b* being filled with yarn, it is evident that a larger amount of friction is required to regulate the delivery of the same when being so filled than when nearly empty, for the reason that the amount of leverage obtained in delivering from a filled yarn-beam is greater than that obtained when the yarn-beam is nearly empty. Supposing the yarn-beam *b* to be filled with yarn, the levers *f*, spring *i*, and nut *n* will then be in the position seen in Fig. 1—that is to say, the supplemental levers *h* will be connected to the levers *f* by the links *q* and the pivots at the ends of the levers *f*. The spring will be well up on the rod *o*, and the levers *h* will be connected to the spring *i* by the links *l*. The friction-bands *d* will also be connected to the levers *f* and the cross-piece *e*, as before described. It is evident that in this position the friction on the rolls of the yarn is great by reason of the longer end of the spring *i* being

raised, and the shorter end bearing down on the levers, to which is attached the friction-bands *d*. As the yarn-beam revolves, and delivers the yarn from the same, the cogs on the cog-wheel *t* strike, at regular intervals, the step *v* on the lever *u*. The end of this lever *u* rests directly under the upright bar *e'*; or, in other words, the upright bar *e'* rests directly on the end of the lever *u*. As the cogs of the wheel strike the step *v* of the lever it causes said lever to tip on its pivot, and the outer end, or the end on which rests the upright bar, is raised. This movement, of course, raises the upright bar, which strikes the inclined part *c'* of the piece *a'*, and gives it a partial revolution, or pushes it sidewise, by reason of first striking the lower part of the incline, and being driven upward by the action of the lever *u*. This movement, it is evident, gives a partial rotation to the screw-rod, for, the pawl *z* fitting the ratchet-wheel *x*, as before described, and being attached to the outer end of the frame *y*, and the part *a'* being also attached to the frame *y*, it becomes apparent that any movement on one end must affect the other. As the upright bar descends the spring *g'*, before described, throws the frame back into its original position, ready for the next upward movement of the bar. This particular revolution of the ratchet-wheel *x*, which is rigidly attached to the rod, lowers the nut *n*, as the said nut cannot revolve with the rod for reason of being held in position by the prongs of the spring *i*. It is, therefore, apparent that as the nut lowers the yarn is delivered from the yarn-beam. The spring *i*, of course, follows the nut, and the friction is constantly diminished.

It will be seen, from the above description, that I furnish a machine which regulates the delivery of the yarn from the yarn-beam, inasmuch as an even tension is produced throughout the whole delivery of the yarn from the yarn-beam.

The slot *b'* in the piece *a'* is for the purpose of regulating the rotary movement of the ratchet-wheel and screw-rod. For instance, if it is desired that the tension should be decreased faster, all that is necessary to do is to slacken the set-screw *j'* and slide the piece *a'* forward, or in the direction of the spring *i*. Then, as the upright bar ascends, this piece will be pushed farther back, and the ratchet, being on the opposite end, must, of course, push the ratchet-wheel farther round.

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

1. The combination of the yarn-beam *b*, having the rolls *c*, with the friction-bands *d*, the levers *f h*, links *l q*, spring *i*, nut *n*, and the rotating screw-rod *o*, as set forth.

2. In combination with the beam *b*, rolls *c*, friction-bands *d*, levers *f h*, spring *i*, vertical rotating screw-rod *o*, and nut *n*, the tipping-lever *u*, cog-wheel *t*, vertical bar *e'*, ratchet-wheel *x*, ratchet *z*, frame *y*, piece *a'*, frame *d'*, and spring *g'*, as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of June, 1873.

JOHN M. LINSKOTT.

Witnesses:

CHAS. H. CRESSEY,
DANIEL CRESSY.