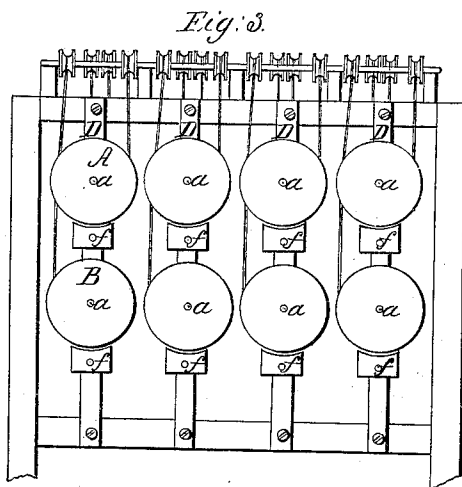
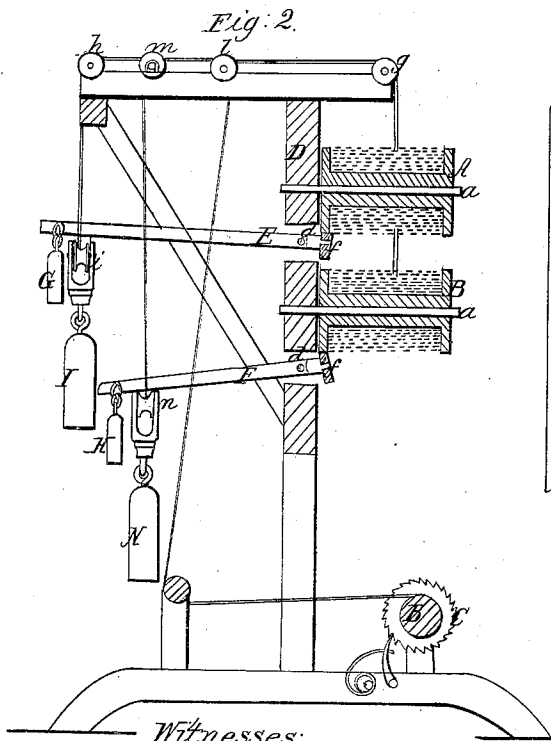
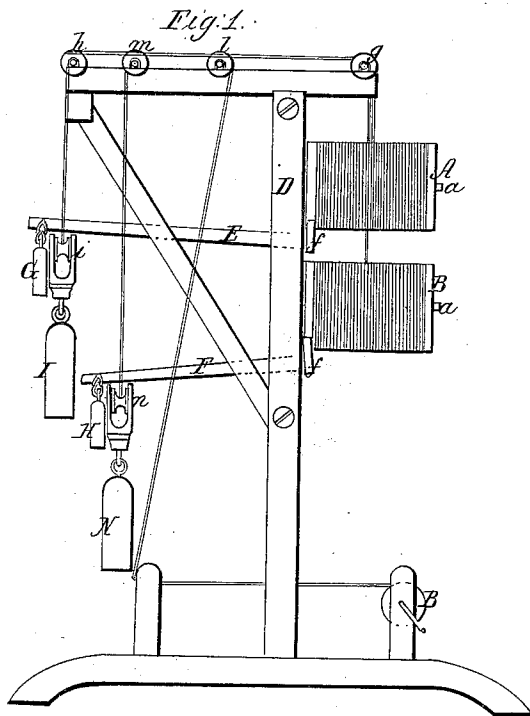


J. M. Leavenworth.

Let-Off for Loom.

N^o 61,218.

Patented Jan. 15, 1867.



Witnesses;
John H. Shuman
Alfred J. Tibbitts

Inventor;
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By his atty
John E. Eade.

United States Patent Office.

J. N. LEAVENWORTH, OF HAMDEN, CONNECTICUT, ASSIGNOR TO HIMSELF
AND BELA A. MANN, OF SAME PLACE.

Letters Patent No. 61,218, dated January 15, 1867.

IMPROVEMENT IN LET-OFF MECHANISM FOR NARROW-WARE 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, J. N. LEAVENWORTH, of Hamden, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Tape Looms; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an end view.

Figure 2, a sectional end view; and in

Figure 3, a front view.

This invention relates to an improvement in the "let-off" for tape looms, or for other narrow fabrics, and consists in the peculiar arrangement and operation of a brake upon the warp spools so that the warp is let off as it is required and a uniform tension always maintained, operating automatically until all the warp upon the spool has been used; and that others may be enabled to construct and use my improvement, I will proceed to describe the same as illustrated in the accompanying drawings.

In the drawings, only the upper part of the loom is represented, the warps represented as being wound on to a beam, C, which in a practical machine is the beam of the loom, and arranged in accordance with the mechanism of the loom. A and B are the spools which carry the two warps for a single tape; they are placed upon spindles, *a*, extending from supports, D. On the said supports D, and below each spool, are hung to fulcrums *d*, levers E and F, to the shorter arm of which are fixed shoes, *f*, bearing upon one of the heads of the spools A and B, and upon the longer arm are suspended weights, G and H, adjusted so that the friction of the shoes *f* will prevent the turning of the spools and consequent unwinding of the warp thereon. The two warps are represented, the one from the spool A in blue, and that from the spool B in red; that from the spool A passes over pulleys *g* and *h*, down to a pulley *i*, and up again over another pulley corresponding to the pulley *h*, then down over a pulley *l*, through the loom to the beam C. To the pulley *i* is attached a weight, I, sufficient to give the necessary tension to the warp, and also to draw the warp from the spool when permitted, as hereafter described. The other warp from the spool B, as denoted in red, passes over other pulleys, *g* and *m*, and down around the pulley *n*, and up and down again to the beam C, in like manner as the first warp, and as shown in fig. 1. To the said pulley *n* is fixed a weight, N, performing the same office upon the second warp as does the weight I upon the first.

The operation of this arrangement is as follows: When the spools are placed upon the spindles, as shown in the several figures, the threads or warps are led to and properly arranged in the mechanism of the loom as before described, and as the warp is consumed the weights attached thereto rise toward their respective levers. I, fig. 2, represents the weight as not having quite reached its lever, E. As the loom progresses, taking up the warp to which the said weight I is attached, the weight will rise until it bears against its lever as denoted by the weight N, bearing against its lever F, fig. 2; and continuing to rise, the lever is raised by it, thus releasing the spool from the friction of the shoe, *f*; the spool will now be revolved, permitting the weight to descend until its descent is arrested by the friction of the shoe self-applied as soon as it is released from the action of the weight upon the warp; thus the spools will continue to automatically let off the warps as fast as required for consumption in the same.

In addition to this advantage of positive automatic action we have another and important one, which is, in case the threads of any of the warps become disarranged or broken, the operator by going to the rear of the loom can easily reach the weights I or N, and draw down the proper one until he is enabled to re-arrange the warps, leaving the weight suspended far down below its lever; it will then by the progress of the weaving be drawn up, no more thread unwinding from the spool until the weight again reaches the lever to act as before described.

Still another advantage of this arrangement is, that the spools being all upon the front of the loom are in view of the operator, the view not being obstructed by the let-off mechanism, and when the warps from one spool have been consumed he has simply to, and can easily, remove the empty spool and replace it by a full one.

I do not wish to be understood as broadly claiming a let-off mechanism, as such is not new; but having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

The let-off mechanism constructed and arranged to operate as described, the same consisting of the weight I, suspended by the warp, the weighted lever E, and its shoe *f*, bearing on the warp spool.

J. N. LEAVENWORTH.

Witnesses:

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ALTSIE J. TIBBITS.