J. P. BUZZELL.

Letting-Off Mechanism.

No. 195,883. Patented Oct. 9, 1877.

Fig. 1.

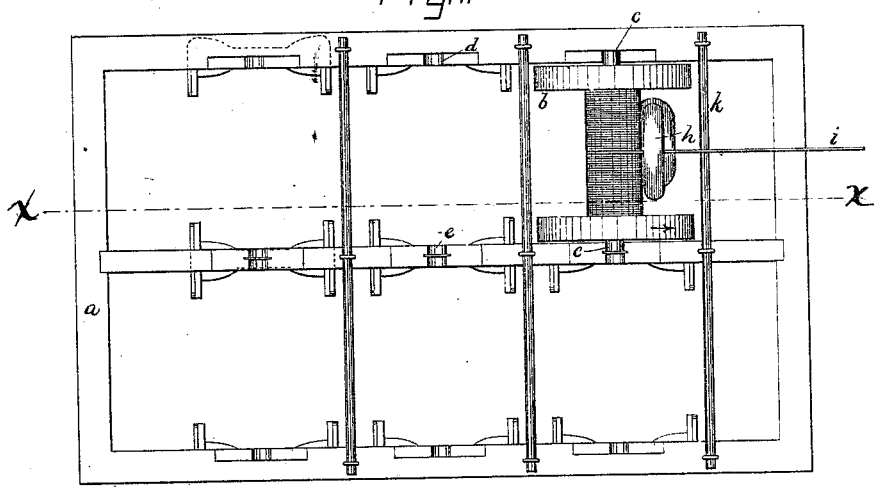


Fig. 2.

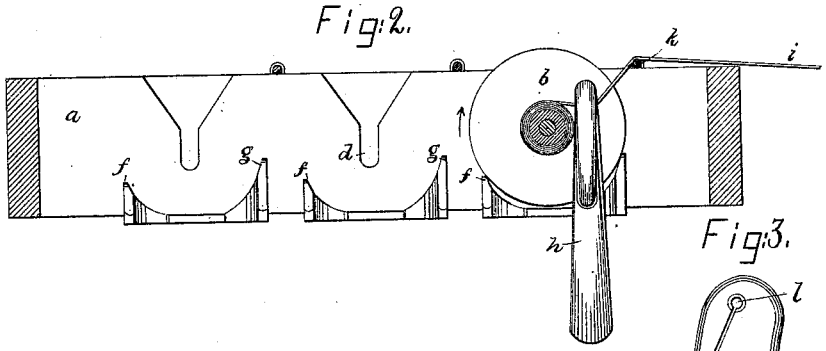
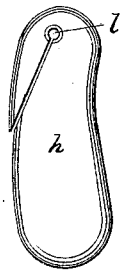


Fig. 3.



Witnesses.

E. C. Perkins.

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UNITED STATES PATENT OFFICE.

JOHN P. BUZZELL, OF CLINTON, MASSACHUSETTS, ASSIGNOR TO BIGELOW CARPET COMPANY.

IMPROVEMENT IN LETTING-OFF MECHANISMS.

Specification forming part of Letters Patent No. **195,883,** dated October 9, 1877; application filed September 8, 1877.

To all whom it may concern:

Be it known that I, JOHN P. BUZZELL, of Clinton, in the county of Worcester and State of Massachusetts, have invented an Improvement in Spool Holder or Support, of which the following is a specification:

This invention relates to spool-holders for use in looms wherein some of the warps are held on spools or in warp dressing or spooling machines.

The invention has for its object to hold the spool at its heads rather than at its axle, by means of two or more friction-faces adapted to come in contact with each spool-head at two or more separate points on the same side of a line drawn through the axes of the several spool-heads, and between such line and the under side of the spool-head, as will be hereinafter described.

In connection with a spool so supported at its heads, I employ a weight of sufficient power (it hanging on the yarn passing between the spool and a guide-rod) to operate on the yarn, in connection with the strain produced by the lay and shedding devices, so that when the eye of the weight is raised to near the top of the mass of yarn on the axle of the spool the spool will be lifted somewhat from its back support, and will slip over its front support and let off yarn. When the weight drops a very little from its most elevated position, it so pulls upon the yarn extending between it and the spool as to crowd the spool-head against its holding-faces, which check the rotation of the spool.

This weight, in its different positions, so operates upon the yarn extending to the spool as at one time to hold the heads of said spool pressed down against the friction-faces to check the rotation of the spool, and at other times, as it is lifted by the yarn drawn forward into the machine, it is made to so pull upon the yarn extending to the spool as to press the spool-head with greatest force against its forward support, elevating it from contact with its back support, when the forward support, not having sufficient power to hold the spool, permits it to be turned to deliver yarn.

With this apparatus the yarn is let off in small quantities as wanted, and the weight does not drop so low as to interfere with spools located in racks or stands below it.

In some other forms of spool-tension regulators the weight frequently drops so low as to rest on other spools or racks, and the warp-thread so relieved from the tension of the weight is left so slack that the knot-cord is not properly engaged by the hole-board and the warp is not properly lifted.

Figure 1 represents, in top view, a spool-stand fitted with a single spool sustained in accordance with my invention; Fig. 2, a longitudinal section on the line *x x*, Fig. 1; and Fig. 3, a side view of the weight.

The stand *a* is intended to represent the usual stand commonly employed in connection with looms. The spools *b* are or may be of any usual construction. The axle *c*, if one is used, will enter the guiding-slot *d e* in the frame or its division-plates. A portion of the periphery of each spool-head rests upon two or more faces, *f g*, constituting the spool-support, such faces being arranged to bear upon the periphery of the spool-head at two or more places below its center of rotation. In practice I prefer that the forward face, *g*, be made higher than the back face, *f*, and that the two faces form part of a single casting adapted to be screwed or otherwise attached to a frame. The entire weight of the spool is sustained by the faces *f g*, and the weight *h* hung on the yarn *i* extended over the guide-wire to the machine, when the spool is not turning to let off yarn, acts to bear the spool-heads firmly against the faces, which, meeting the heads at two points, exert sufficient friction thereon to prevent the rotation of the spools.

When the yarn is taken up far enough to lift the eye *l* about level with the yarn on the spool, then the draft of the yarn, produced by the machine to which the yarn is being delivered, acts in such a direction as to partially raise the spool-head from its back faces *f*, which movement so much reduces the friction on the spool-head as to permit it to slip over the front face against the action of the weight, but the latter quickly descends until the line of draft of the yarn from the weight to the spool acts to draw the spool-heads firmly

against both faces *f g*, when the friction will be sufficient to prevent further rotation of the spool.

With this support for the heads the spool will be turned but little at each movement, just enough to afford the amount of yarn needed by the machine, and then the spool will be held.

The weight has but a very short range of vertical movement, which is of great advantage, as it enables the spools to be arranged very closely together in rows or banks, thereby economizing space and material.

It is obvious that a spool having one or both heads supported, as above described, at two or more points, can be moved a short distance and checked more quickly and certainly than if each spool-head was made to rest upon but one face.

In this my invention the spool-spindle serves only to prevent the spool being drawn forward from both its supporting-faces. The casting which serves as the spool-support may be provided with an upper stop located above the center of rotation of the spool, and in advance of its head, to prevent the spool being drawn forward and off from its forward support, and then the spool-axle may be omitted. This upper stop may be made separate from the spool-supporting casting and be attached to the frame-work.

It is obvious that the shape of the spool-support may be modified without departing from the principle governing my invention, which is that one or both spool-heads are held at two or more points by a weight so controlled by the yarn as to force the spool-head against one or two friction-faces, according to its position with reference to the surface of the mass of yarn upon the spool.

I claim—

1. A spool-support provided with two faces of different heights to touch the spool-head on opposite sides, as described, whereby the spool, when slightly lifted, will rise from the lowermost face and bear only upon the highest face, to operate substantially as described.

2. The combination, with a spool and a weight sustained by the yarn, as described, of a spool-head support provided with two or more friction-faces to meet the spool-head at two or more points below its center of rotation, whereby the spool, under the action of the rising and falling weight, is adapted to be alternately lifted from and borne against the back support, to permit and prevent the rotation of the spool, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN P. BUZZELL.

Witnesses:

G. W. GREGORY,

W. J. PRATT.