No. 772,140. PATENTED OCT. 11, 1904.

M. C. ELLISON.

THREAD OR TWINE TENSION DEVICE.

APPLICATION FILED APR. 21, 1904.

NO MODEL.

Fig. 1.

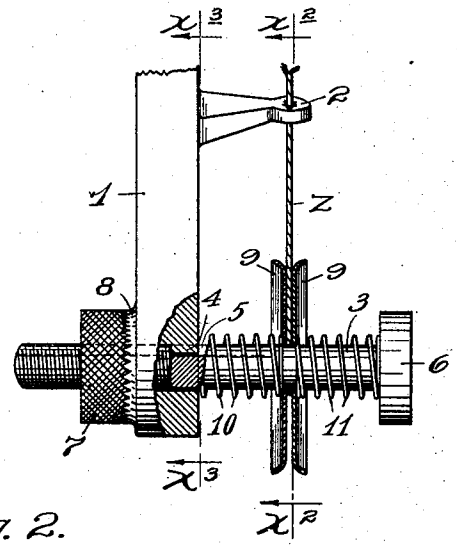


Fig. 2.

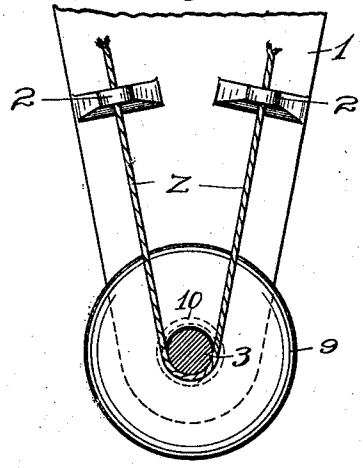
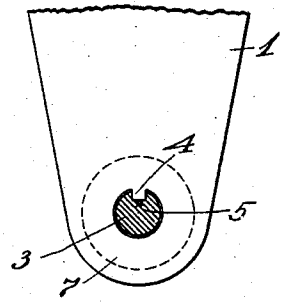


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

MILTON C. ELLISON, OF ST. PAUL, MINNESOTA.

THREAD OR TWINE TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 772,140, dated October 11, 1904.

Application filed April 21, 1904. Serial No. 204,158. (No model.)

To all whom it may concern:

Be it known that I, MILTON C. ELLISON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Thread or Twine Tension Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its object to provide an improved tension device especially adapted for use in connection with sewing-machines to put tension upon the thread, but adapted for other uses—such, for instance, as a twine-tension device for grain-binders, &c.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view principally in side elevation, but partly in section, illustrating my improved tension device. Fig. 2 is a transverse vertical section taken on the line x^2 x^2 of Fig. 1, and Fig. 3 is a transverse vertical section taken on the line x^3 x^3 of Fig. 1.

The numeral 1 indicates a suitable support, such as a projecting arm of a sewing-machine or of a twine-binder. This support 1, as shown, is provided with a pair of perforated guide-lugs 2, through the perforations of which the thread or twine *z* is passed. A tension bolt or spindle 3 is mounted to slide freely through a seat formed in the support 1, but is held against rotation by a key-lug 4 on said support, which engages in a keyway 5, cut in the said bolt. The projecting outer end of the bolt 3 is formed with a head 6, and the other end of said bolt is threaded and is provided with a lock-nut 7, the inner face of which is serrated and engaged with a correspondingly serrated hub 8, formed on the rear face of the support 1. As shown, the lock-nut 7 is annular in form and knurled on its outer surface.

Loosely mounted on the bolt 3, between the support 1 and the head 6 thereof, is a pair of clamping-disks 9. A coiled spring 10 is placed on the bolt 3 and is compressed between the support 1 and the inner clamping-disk 9, and a similar spring 11 is placed on said bolt and is compressed between the outer clamping-disk 9 and the head 6 of the said bolt.

The thread or cord *z* is passed through one of the guide-lugs 2, thence between the clamping-disks 9 and part way around the bolt 3, and thence back through the other guide-lug 2. The thread or twine may be guided between the clamping-disks 9 by any suitable means; but the arrangement above described is preferred. It is evident that when the springs 10 and 11 are compressed they will clamp the disks 9 onto the thread or twine and produce a frictional resistance to the drawing movement of the said thread or twine, depending on the tension of the said springs. It is evident that the said springs 10 and 11 further serve to normally hold the bolt 3 toward the right with respect to Fig. 1, with the serrations of the lock-nut 7 engaging with the serrations of the lock-hub 8, so that the said nut 7 cannot be turned without movement of the said bolt 3 toward the left. As the said bolt 3 cannot itself turn or rotate, it is evident that normally the tension device will be held in whatever adjustment it may be set without danger of accidental change in the said adjustment. Nevertheless the tension device may be very easily and quickly adjusted simply by pressing the bolt 3 toward the left against the tension of the springs 10 and 11, so as to disengage the serration of the lock-nut 7 and lock-hub 8, thereby permitting the said lock-nut 7 to be screwed to any position on the threaded portion of the said bolt.

In tension devices of this general character their liability to accidental change in adjustment has been an objectionable feature. The above-described tension device, while extremely simple and of small cost, has in practice been found extremely efficient for the purposes had in view, and, as already pointed out, it is capable of being very quickly readjusted, so as to give any desired tension on the thread or twine.

It will of course be understood that the ten-

sion device described is capable of modification within the scope of my invention as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a tension device of the character described, the combination with a support, of a bolt slidably mounted therein, but held against rotation, thread or twine engaging devices on said bolt, a lock-nut, having threaded engagement with said bolt, and constructed to interlock with said support, and at least one spring applied to said bolt and yieldingly holding said lock-nut interlocked with said support, substantially as described.

2. In a tension device of the character described, the combination with a support, of a headed screw-threaded bolt slidably mounted in said support, but held against rotation, a serrated hub on said support, surrounding the threaded portion of said bolt, a lock-nut on the threaded portion of said bolt, having serrations engaging with the serrations of said lock-hub, a pair of clamping-disks on said bolt, between the head thereof and said support, and coiled springs on said bolt, the one being compressed between said support and the inner disk, and the other being compressed between the outer disk and the head of said bolt, substantially as described.

3. The combination with a support 1, having guide-lugs 2, of a bolt 3, having a head 6, and threaded at its other end, said bolt working freely through the said support, a key-and-groove engagement between said bolt and said support, holding the former against rotation, the serrated lock 8 on said support 1, the lock-nut 7 on the threaded end of said bolt, having serrations engaging with the serrations on said lock-hub 8, the pair of clamping-disks 9 on said bolt 3, and the pair of coiled springs 10 11 on said bolt 3, the former being compressed between said support and the inner disk 9, and the latter being compressed between the outer disk 9 and the head 6 of said bolt, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MILTON C. ELLISON.

Witnesses:

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F. D. MERCHANT.