

G. L. DULANEY.

Tension Device for Thread in Sewing Machines.

No. 102,787.

Patented May 10, 1870.

Fig. 3.

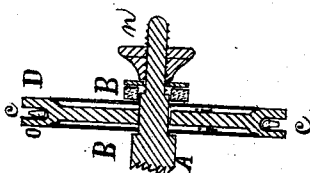
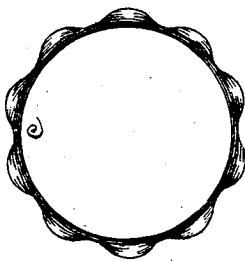


Fig. 2.

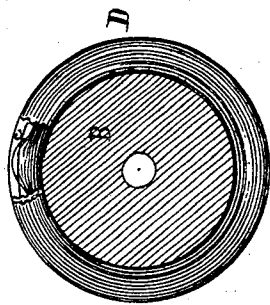


Fig. 1.

Witnesses

Joseph Leas

R. Wilson

G. L. Dulaney

# UNITED STATES PATENT OFFICE.

GEORGE L. DU LANEY, OF MECHANICSBURG, PENNSYLVANIA.

IMPROVEMENT IN TENSION DEVICES FOR THREAD IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 102,787, dated May 10, 1870.

*To all whom it may concern:*

Be it known that I, GEORGE L. DU LANEY, of Mechanicsburg, in the county of Cumberland and State of Pennsylvania, have invented new and useful Improvements in Thread-Tension Devices; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates, first, to the peculiar construction of a wire fillet and applying the same to an annular groove around the periphery of a rotating disk for the purpose of controlling and preventing the thread from slipping in the groove as it is being fed to the needle while the seam is being sewed.

Secondly, it relates to the construction and application to such a tension-disk of thin flexible disks, which bear against the central portion of the main disk, which has been previously fitted with proper concavities to admit of their application, as hereinafter more fully described, and by which sufficient elasticity is secured to give a perfectly smooth, easy, and uniform tension to the thread, and which tension may be readily adjusted by means of a set-screw or adjusting-nut and screw-threaded main spindle that passes through the aperture in the center of each disk.

Some of the advantages accruing from the use of a thread-tension device constructed as herein described are—

First, that two threads may be used and controlled by the same disk at the same time with perfect uniformity of tension on each thread by both threads being passed around the disk, one on each side of the wedge-shaped lip-like projection, or pinched-up parts of the wire fillet that surrounds the disk, and between said lips and the walls or sides of the groove in the disk, where they are held securely between the projecting lips of the wire fillet and the walls or sides of the groove in the disk, and all possibility of slipping of thread is prevented while the thread is being fed to the needles for the purpose of forming two rows of stitches at one and the same time without one thread interfering in the least with the other.

Secondly, that the wire fillet may be readily removed from the groove in the disk for the purpose of removing any dust or particles of

thread that may accumulate in the groove from time to time by constant use, and so fill up the spaces between the wire fillet and the walls of the groove as to prevent the thread from taking into those acute angles formed by the junction of the wire fillet with the walls or sides of the groove in the disk, for the purpose of more effectually holding the thread and preventing its slipping. Much difficulty has been experienced in the use of grooved wheels or disks that have been fixed solidly together by the sharp angle in the groove becoming so filled with dirt as to render them inoperative by causing a continual slipping of thread.

Thirdly, in the employment of two flexible disks I secure a uniform yielding pressure, alike on both sides of the main disk, which gives a smooth and uniform degree of tension, as one disk will readily sympathize with the other in overcoming any irregularity in the rotation of the disk.

In order that others may understand the construction and operation of my thread-controlling device, I will describe its construction and operation as follows, to wit:

Figure 1 is a side view of the disk, with a portion of one of the walls of the groove broken away to show the position of the wire fillet and the thread in its passage around the disk. Fig. 2 is a transverse central view of the device, showing all the parts in position. Fig. 3 is a side view of the wire fillet that rests in the annular groove around the disk, showing its lip-like projections against which the thread rests when passed around the disk.

At D D, Figs. 1 and 2, is indicated the main rotating disk. This disk is constructed with a hole or aperture through its center, and is affixed to the main arm of a machine by means of a spindle, on which it rotates. To said spindle is affixed an adjusting nut or screw for the purpose of regulating any degree of tension to the thread. The disk D is milled out or dished on each side or face in order to provide a cavity, I I, that will admit of the smaller and flexible disk's yielding to the pressure of the set-screw *n* when the tension is being adjusted.

At O, Fig. 2, is indicated the groove around the periphery of the disk that receives the wire fillet C C.

At B B is indicated two thin flexible disks, through the instrumentality of which a yield-

ing pressure is supplied to the main disk on each side, with perfect uniformity of action. Said thin flexible disks are struck up from sheet metal at a trifling cost.

At C, Fig. 3, is indicated a wire fillet. Said fillet is constructed of ordinary wire, and by means of a proper die is provided with a series of lip-like wedge-shaped projections. This wire fillet, when properly constructed, is placed in the annular groove O around the disk D, to prevent the thread from slipping in the groove, thereby enabling a perfect tension on the thread to be produced by means of the set-screw *n* as the disk D is rotated around the spindle A.

Having thus fully set forth and described my improvements, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The annularly-grooved rotating disk, in combination with a removable wire fillet for the purpose of controlling the tension of the thread or threads, substantially as shown and described.

2. The combination, with the above, of thin flexible disks when applied to the central rotating disk for the purpose of producing a graduated yet yielding pressure through an adjusting nut and screw, substantially as described.

GEORGE L. DU LANEY.

Witnesses:

JOSEPH LEAS,  
R. WILSON.