(No Model.)

J. M. MERROW.

TENSION DEVICE FOR SEWING MACHINES.

No. 493,871. Patented Mar. 21, 1893.

Fig. 1.

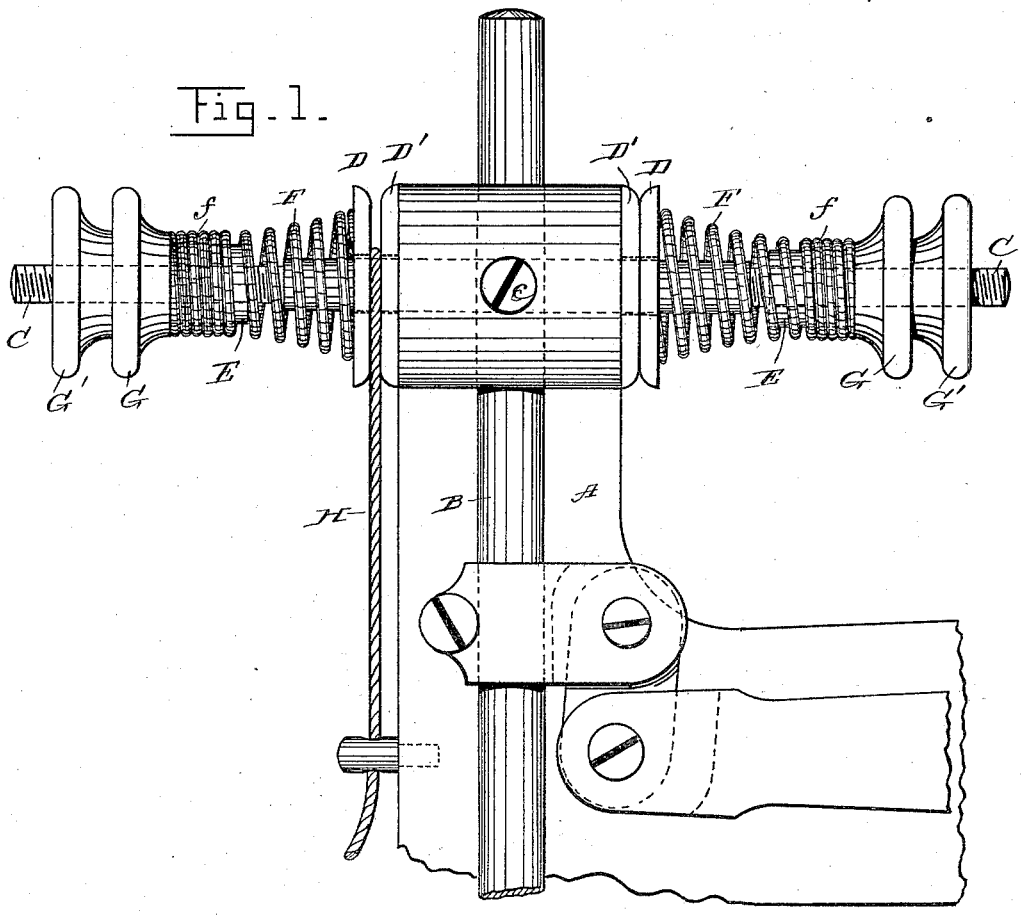
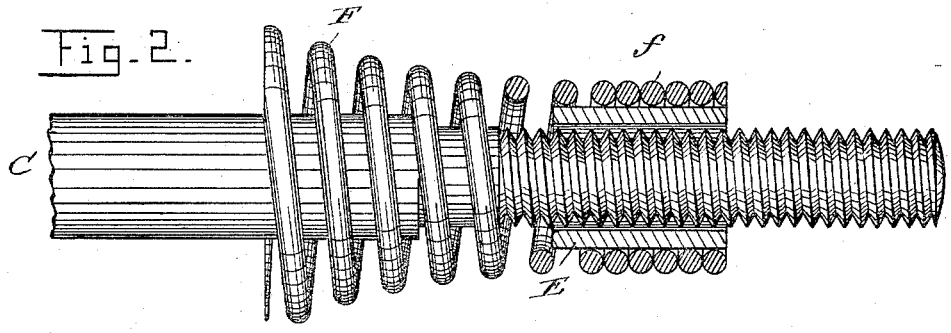


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH M. MERROW, OF MERROW, CONNECTICUT.

TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 493,871, dated March 21, 1893.

Application filed May 20, 1890. Renewed September 6, 1892. Serial No. 445,177. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. MERROW, of Merrow, in the town of Mansfield, county of Tolland, and State of Connecticut, have invented certain new and useful Improvements in Tension Devices for Crochet-Machines or Sewing-Machines, of which the following is a specification.

My invention relates particularly to a tension device comprising a spring of improved form and means for supporting the same as will be fully explained, reference being had to the drawings forming a part of this specification, throughout which similar letters of reference indicate like parts.

Figure 1, is a vertical view of a portion of a crocheting machine to which my invention is applied. Fig. 2, is a detached view showing the spring and its support, parts being in section.

A, indicates the frame of the machine supporting the needle bar B.

Through the upper portion of the frame the rod C, passes and is secured by means of the screw *c*, and is screw threaded at each end to a suitable distance.

D. D. indicate tension disks which are loosely supported upon the rod C.

D′. D′, indicate similar disks, which may be either loose or tight upon the rod C.

The tubes E. E. surround the threaded portion of the rod C, and are adapted to slide upon said rod.

F. F. indicate tapering wire springs which are provided with a straight portion *f*, surrounding and tightly fitting the tubes E. E.

The thumb nuts G. G. are adapted to be screwed upon the rod C, to a greater or less distance, and cause the springs F. F. to exert the desired pressure upon the disks D. D.

G′, G′, are check nuts designed to retain the thumb nuts G. G. in their proper positions.

The tubes E. E. act to hold the tapering springs F. F. in position, causing them to exert a more uniform pressure upon the tension disks D. D.

It will be observed that this is a double tension device adapted to act upon two separate threads, independently at the same time (H, representing the thread passing between the tension disks, D. D′), but may be used or made as single tension.

Having thus explained my invention, what I claim as new is—

1. In a tension device, such as described, the combination with the movable member of the thread clamp and an adjusting device movable toward the clamp, of a cylindro-conoidal spring interposed between the adjusting device and the movable member of the clamp, the cylindrical portion of the spring being supported and guided and the base of the conical portion engaging the clamp; substantially as described.

2. In combination with the thread clamp, and adjusting screw, a cylindro-conoidal spring interposed between a shoulder on the screw-threaded rod and the clamp, the larger end of the spring engaging the clamp and the smaller cylindrical portion embracing a sleeve on the screw-threaded rod; substantially as described.

3. In combination with the revoluble clamping disks, supporting rod and adjusting nut, the cylindro-conoidal spring having its cylindrical coils tightly embracing a sleeve interposed between the nut and clamp, with the last coil at the base of the conical portion engaging the outer section of the clamp; substantially as described.

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