(No Model.)

J. C. GOODWIN.

TENSION DEVICE FOR SEWING MACHINES.

No. 324,249. Patented Aug. 11, 1885.

Fig. 4.

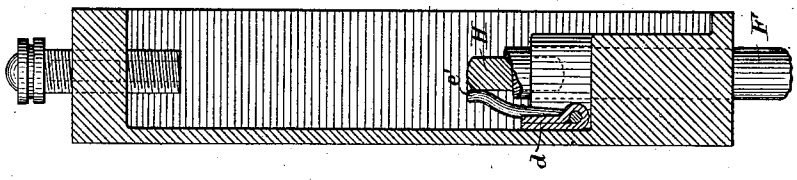


Fig. 3.

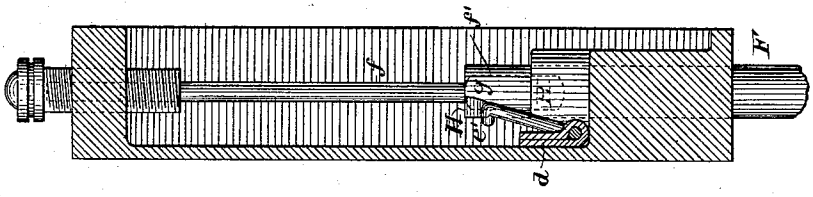


Fig. 2.

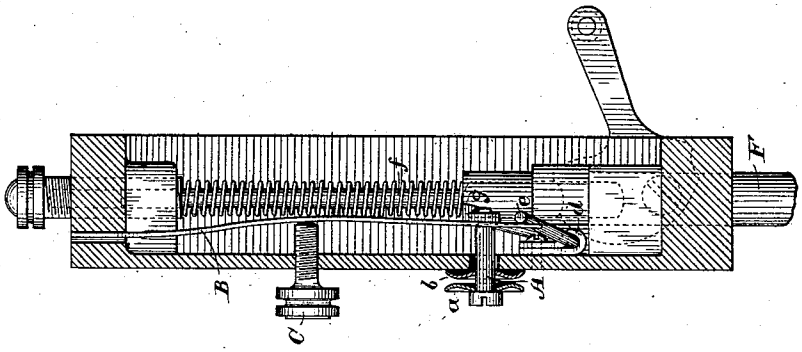
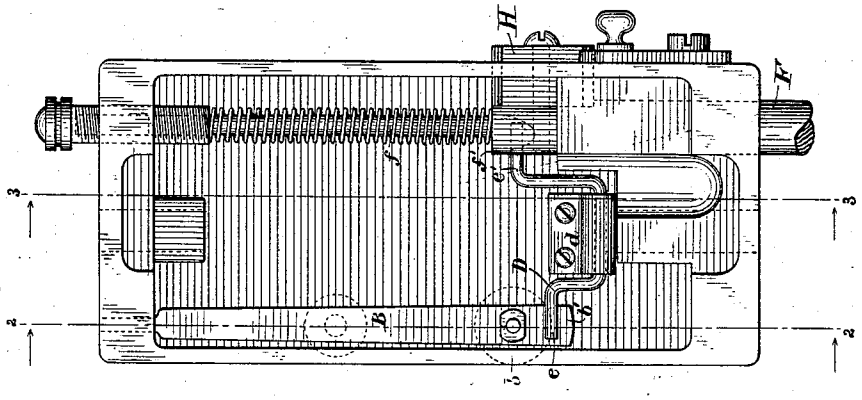


Fig. 1.



WITNESSES

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UNITED STATES PATENT OFFICE.

JULIUS C. GOODWIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE AMERICAN BUTTON HOLE, OVERSEAMING AND SEWING MACHINE COMPANY, OF SAME PLACE.

TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 324,249, dated August 11, 1885.

Application filed October 29, 1884. (No model.)

To all whom it may concern:

Be it known that I, JULIUS C. GOODWIN, of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Tension Devices for Sewing-Machines, of which the following is a specification.

The object of my invention is to produce a simple tension device, all the parts of which, except the tension-disks, are located within the head of the machine in such manner as not to in any way interfere with the operations of the needle-bar and presser-foot bar.

In the accompanying drawings, Figure 1 is an interior view of the end piece or head of a sewing-machine which carries the needle-bar and presser-foot bar, with the needle-bar and its actuating devices omitted. Fig. 2 is a transverse section of Fig. 1 on the line 2 2; Fig. 3, a similar view on the line 3 3 of Fig. 1; and Fig. 4 is a detailed sectional view on the same line as Fig. 3, showing a slight modification.

Two ordinary tension-disks, *a b*, are located upon the outside of the head of the machine in the usual manner. One of these disks, *b*, is loosely mounted on a spindle, A, which projects into the head of the machine, as clearly shown in Fig. 2. The other disk is secured upon the outer end of the spindle, and the two disks are normally drawn together by the action of a plate-spring, B, within the head, which is preferably secured in the upper end of the head-piece of the machine, and is connected near its lower end with the spindle A, so as normally to draw the spindle inward. The tension of this spring may be regulated by a thumb-screw, C, which passes through the head of the machine and bears upon the spring. This arrangement of spring tension-disks and spindle for carrying them is compact and readily adjustable.

In order, now, to overcome the action of the spring B and release the tension-disks when the presser-foot bar is thrown up by any ordinary lifting cam or device, I employ a rock-shaft, D, which is preferably constructed in the manner shown in the drawings—that is, in the form of a crank-shaft. The cranked portion of the shaft is mounted in any suitable bearing, *d*, and one end, *e*, bears upon the end *b'* of the spring B, which projects beyond the spindle A. The opposite end of the crank-shaft projects into the path of the presser-foot bar F. This bar is formed, as usual, with a reduced portion, *f*, around which the ordinary actuating-spring is coiled, and thus gives a shoulder, *f'*, at the point where the cranked end *e'* of the shaft D comes in contact with it. This shoulder is formed with a beveled or inclined face, *g*, as clearly shown in the drawings. It will be obvious, now, that when the needle-bar is thrown up the inclined face *g* thereon, acting on the end *e'* of the crank-shaft, will rock it and cause its opposite end, *e*, to overcome the force of the spring B and press the spindle A, which carries the tension-disks, outward. This will of course release the tension on the thread.

The shaft is secured against the wall of the head-piece of the machine, and is entirely out of the way of the needle-bar and its actuating devices. The structure is therefore not only one of exceeding simplicity, but is mechanically desirable on account of the compactness of the arrangement and non-liability to get out of order. Of course, instead of having the rock-shaft actuated by the presser-foot bar, the end *e'* may project beyond said bar and be acted on by the block H, secured to the presser-bar, on which block the ordinary lifting-cam acts. Such a construction is shown clearly in Fig. 4.

I am aware that tension devices of this character have heretofore been made so as to be released by the elevation of the presser-foot bar, or the throwing up of the lifting-cam, as shown, for instance in patents of J. W. Corey, Nos. 216,942 and 239,031, and I therefore make no claim to any such broad ground.

I claim as my invention—

The combination, substantially as set forth, of the tension-disks, their spring and spindle, the crank or rock-shaft mounted on the wall of the head-piece of the machine, and means for actuating said shaft to loosen the tension of the disks when the presser-foot bar is thrown up.

In testimony whereof I have hereunto subscribed my name.

JULIUS C. GOODWIN.

Witnesses:
W. W. DOUGHERTY,
C. A. DOUGHERTY.