2 Sheets--Sheet 1.

G. STACKPOLE.

Improvement in Tension Devices for Sewing-Machines.

No. 129,761. Patented July 23, 1872.

Fig. 1.

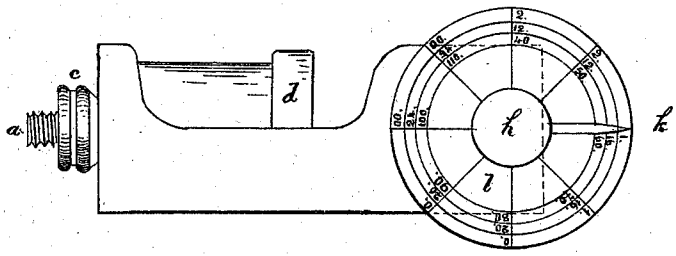


Fig. 2.

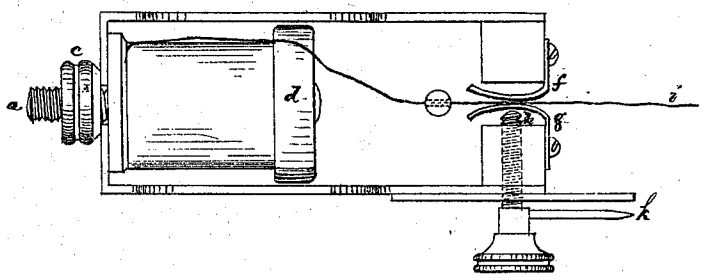
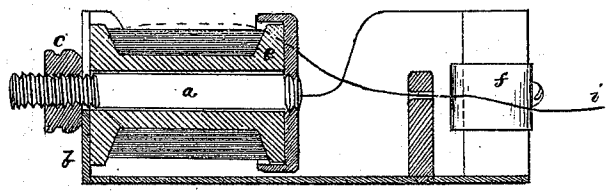


Fig. 3.



Witnesses:

Wm. C. Gavit

J. W. Holman

Inventor:

G. Stackpole

2 Sheets--Sheet 2.

G. STACKPOLE.

Improvement in Tension Devices for Sewing-Machines.

No. 129,761. Patented July 23, 1872.

Fig. 1.

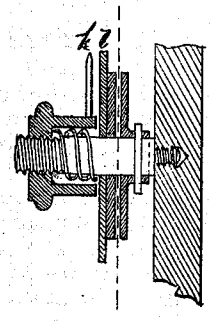


Fig. 2.

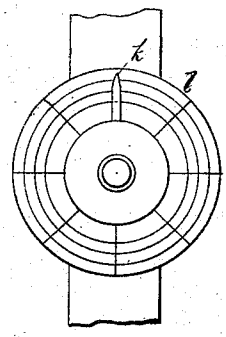


Fig. 3.

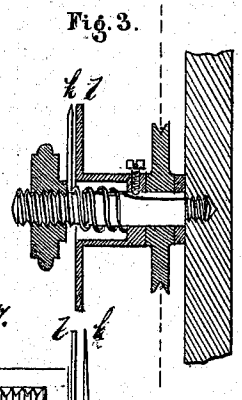


Fig. 4.

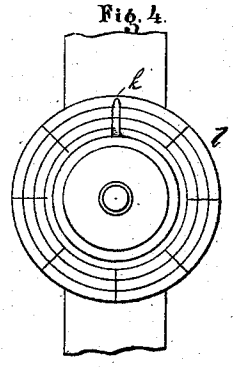


Fig. 7.

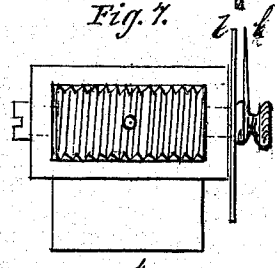


Fig. 5.

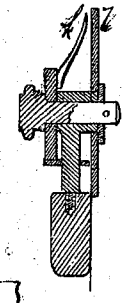


Fig. 6.

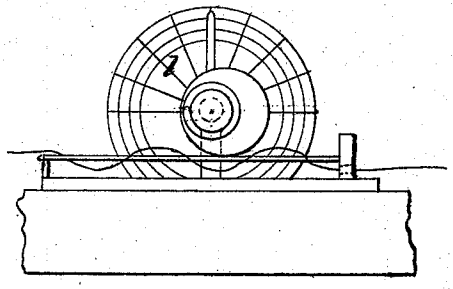
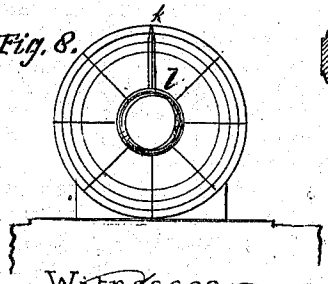


Fig. 8.



Witnesses:

Inventor:

G. Stackpole

UNITED STATES PATENT OFFICE.

GREENLEAF STACKPOLE, OF ELIZABETH, NEW JERSEY.

IMPROVEMENT IN TENSION DEVICES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **129,761**, dated July 23, 1872.

SPECIFICATION.

Be it known that I, GREENLEAF STACKPOLE, of Elizabeth, in Union county, in the State of New Jersey, have made an Invention in Sewing-Machines, of which the following is a description, and in the drawing forming part of this application like letters indicate corresponding parts.

In sewing-machines the spool of thread is commonly placed in a vertical position over a pin and made to rest on one of its heads, or else it is slipped over a horizontal spindle, and in both these usual modes the spool turns on its spindle, being so turned by the pull of the thread when sewing. As the thread unwinds the strain on the thread required to turn the spool varies and necessitates a change of tension or causes uneven sewing. When commencing work an operator has usually to sew a little experimentally to get the tension on the thread just right; and for given sizes of thread a certain-sized needle should always be used, and each thread to do best sewing should in the cloth form a certain number of stitches to the inch. First-class operators understand these proper relations between needle, thread, and stitch; but with others it is a question of experiment each day, and when this proper condition is not reached the sewing is not as perfect as it might be.

My invention relates to thread-tension mechanism; and its object is to adapt all the parts thereof so that when in a certain position it will produce exactly the right tension for certain-sized thread or silk; and, further, it will then indicate the proper-sized needle to be used with such thread, and also the number of stitches to an inch. The feeding device of the machine should be provided with an index for this purpose, and for convenience it should be placed plainly in view of the operator.

Figure 1 is a side view of my invention. Fig. 2 is a top view. Fig. 3 is a side sectional view.

On second page of the accompanying drawing, which are modifications of my invention, the spool of thread is not shown in the modifications, but in each case it is to occupy the relation shown in Figs. 1, 2, and 3. In Figs. 1, 2, and 3 on page 1, the spool and tension device are mounted in a frame secured to the machine in any suitable position. The spool-spindle *a* is secured at one end to an upright, *b*, but made quickly and easily removable therefrom. In this instance set-nuts *c* are shown, but instead the spindle may be clamped in any suitable way to its support. The forward end of the spindle is provided with a cap or disk, *d*, preferably larger than the head *e* of the spool, and the spool-head rests against this cap or disk, and the thread passes continually about this cap as it unwinds, but the spool remains stationary on its spindle. The tension mechanism is located in advance of the cap, and in Figs. 1, 2, and 3 it consists of two smooth surfaces, *f g*—one or more somewhat elastic or capable of receding from the other, and the one designated by *g* is provided with a screw, *h*, to regulate its position with relation to the other surface *f*, in order to produce the requisite frictional action on the thread *i*. One of these surfaces might be a roller. This screw is provided with or operates a pointer, *k*, which, as the screw is turned, passes over certain figures on the dial *l*. This dial is stationary, and is provided with numbers corresponding with numbers commonly used on spools of thread.

It is not actually necessary to indicate every such spool-number on the dial, because in some cases two sizes of thread may be used with about the same tension and same-sized needle. When the operator has placed the spool of thread on its spindle he passes the thread between the friction-surfaces, and turns the screw until the pointer comes opposite the number indicated on the dial, and corresponding with the spool-number; and when in this position the dial will also indicate adjacent to such number the proper-sized needle and length of stitch or number to an inch, and the operator, when the needle and feed are right, can commence sewing at once and be certain of reaching the best possible result.

My invention may be carried out in various ways in connection with other well-known forms of tension devices commonly used in sewing-machines; and on the drawing, Figs. 1 and 2, page 2, show the application of the registering-dial to the disks used on the Grover & Baker machine. Figs. 3 and 4, page 2, show the dial as applied to the tension-wheel of the Wheeler & Wilson machine. Figs. 5 and 6, page 2, show the dial as applied to the long flat spring. Figs. 7 and 8, page 2, show the

dial as applied to the screw-like device of the Weed machine. In each of these instances I have shown a registering apparatus in connection with these well-known forms of devices, and in each case I propose to have the spool in the position shown in Fig. 1.

Claims.

Having described my invention, what I claim is—

1. The combination, with the spindle to support a spool and deliver a thread therefrom without the spool turning thereon, of a tension device, substantially as described, when provided with a regulating apparatus to indicate the amount of tension on different-sized threads; and I also claim the said combination of the devices above enumerated when provided with numbers to designate the size of needles and length of stitch to be used with certain-sized thread.

2. Also, I claim the combination, with a tension device, substantially as described, of a dial or regulating mechanism, or device to indicate the requisite degree of tension for a certain-sized thread, and also the needles to be used with such thread; and I also claim the above when provided with an index designating the length of stitch or feed for said needle and thread.

GREENLEAF STACKPOLE.

Witnesses:

JOHN DEVER,

S. Q. RICE.