

C. F. RITCHEL.

TENSION-MECHANISM FOR SEWING-MACHINES.

No. 172,500.

Patented Jan. 18, 1876.

Fig. 1.

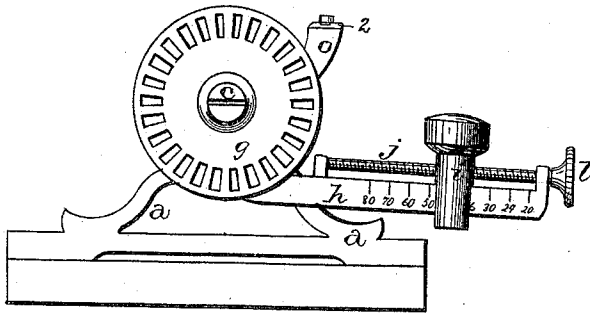


Fig. 2.

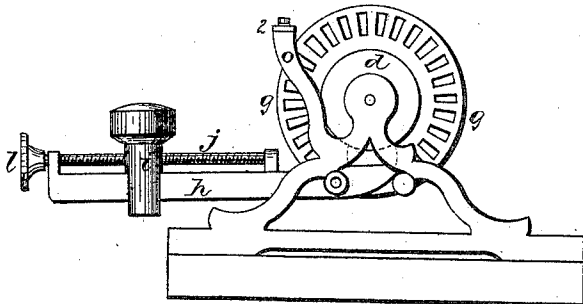
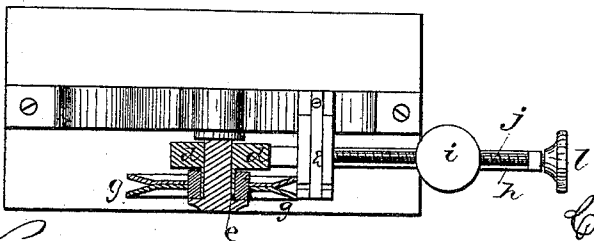


Fig. 3.



WITNESSES.

J. W. Garner
D. Penolleton.

INVENTOR.

C. F. Ritchel
per
F. A. Lehmann,
att'y.

UNITED STATES PATENT OFFICE.

CHARLES F. RITCHEL, OF CORRY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
HIS RIGHT TO ADAMS DAVIS, OF SAME PLACE.

IMPROVEMENT IN TENSION MECHANISMS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 172,500, dated January 18, 1876; application filed
December 27, 1875.

To all whom it may concern :

Be it known that I, CHARLES F. RITCHEL, of Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Tension Mechanism for Sewing-Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved tension mechanism for sewing-machines; and it consists in the arrangement and combination of devices, that will be more fully described hereinafter, whereby the tension upon each sized thread can be most accurately adjusted by means of a friction-brake and movable weight.

The accompanying drawings represent my invention.

a represents a small metallic frame, that is to be attached to the machine in any suitable manner or place. Placed upon the set-screw *c*, which screws into this frame, is the friction-wheel *d*, turning loosely thereon, and provided with a flange, *e*, formed on its outer side, that fits in the opening in the center of the disk *g* like a tenon into a socket. As the wheel *d* and disk *g* are attached together by frictional contact, when the disk is moved by the passage of the thread between its edges the wheel will turn with it. Pivoted to the frame *a*, at any suitable point, is the lever *h*, the short end of which is provided with a suitable friction-brake for bearing up against the friction-wheel *d*, while the outer end carries the weight *i*, that is adjusted back and forth toward ei-

ther end by means of the screw *j*. On the side of this long lever are marked and numbered gradations or spaces, as shown, which correspond to the different-sized thread that is made and sold.

By turning the screw *j*, by means of the small hand-wheel *l* on its outer end, the weight can be adjusted back and forth to any number desired, and thus the tension accurately adjusted for each different thread.

Of course, the farther from the center of motion, or fulcrum, the weight is moved, the greater the pressure of the brake on the wheel, and therefore the numbers corresponding to the coarser threads are placed on the outer end of the lever.

Secured to the arm *o*, that projects up from the frame *a*, is the guide 2, that guides the thread to or from the disk *g*, and which consists of a horizontal notched arm and a flat spring upon its top.

Having thus described my invention, I claim—

1. The combination of the friction wheel *d*, having the flange *e*, disk *g*, having double edges to receive the thread, by which it is turned, and which fits on the said flange, with the weighted lever *h*, substantially as shown.

2. The combination of the frame *a*, wheel *d*, disk *g*, weighted lever *h*, and screw *j*, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of December, 1875.

CHARLES F. RITCHEL.

Witnesses:

I. B. BROWN,
H. S. HAYNES.