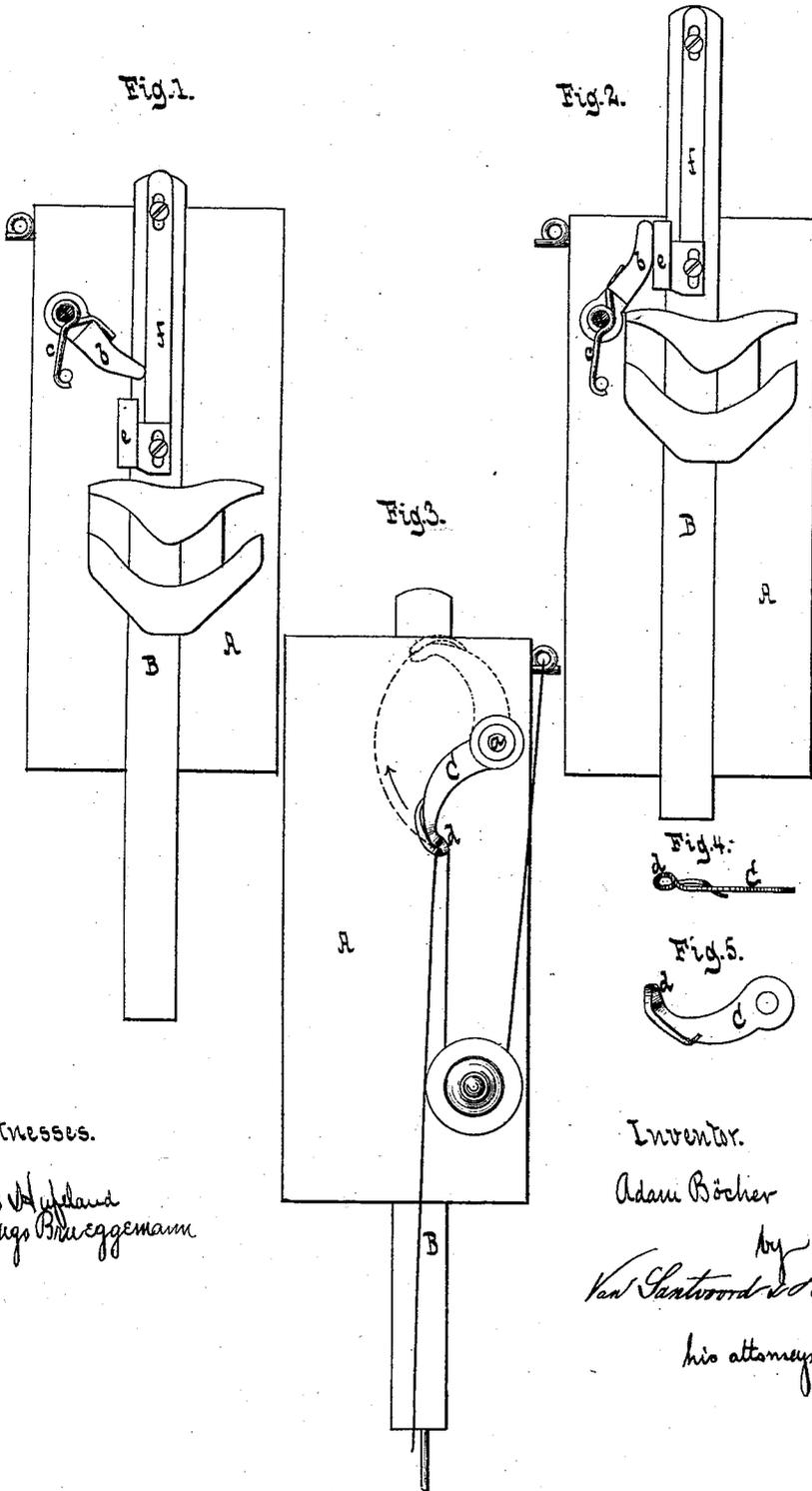


A. BÖCHER.

SEWING-MACHINE TAKE-UPS.

No. 184,824.

Patented Nov. 28, 1876.



Witnesses.

Otto Hufeland
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Inventor.

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by
Van Gantwood & Lauhoff
his attorney.

UNITED STATES PATENT OFFICE.

ADAM BÖCHER, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINE TAKE-UPS.

Specification forming part of Letters Patent No. 184,824, dated November 23, 1876; application filed October 24, 1876.

To all whom it may concern:

Be it known that I, ADAM BÖCHER, of the city, county, and State of New York, have invented a new and useful Improvement in Sewing-Machine Take-Up, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a rear view when the needle-slide is down. Fig. 2 is a similar view when the needle-slide is up. Fig. 3 is a face view when the needle-slide is down. Figs. 4 and 5 are detached views of the take-up lever.

Similar letters indicate corresponding parts.

This invention relates to a take-up mechanism which is composed of a lever mounted on a rock-shaft, which extends through the upper part of the face-plate of the needle-arm or goose-neck, and on the inner end of which is secured a toe, which is thrown down by the action of a spring, and which is acted on by a tappet secured to the needle-bar, said tappet and toe being placed in such relation to each other that the needle-slide can rise a short distance without imparting motion to the take-up lever, thus allowing the shuttle to pass clear through the loop of the needle-thread before the take-up lever begins to draw up the needle-thread. By this arrangement the danger of breaking the needle-thread is avoided. Furthermore, as soon as the tappet begins to act on the toe a positive upward motion is imparted to the take-up lever, and the thread is drawn up with a speed which exceeds that of the needle-slide during the first half of the upward stroke of said take-up lever, while during the second half of the upward stroke the speed with which the needle-thread is gradually reduced until the stitch is drawn tight, and the take-up lever remains stationary while the needle-slide completes the last portion of its upward stroke. By this arrangement the stitch is drawn tight without danger of breaking the needle-thread or of allowing the formation of loose stitches. The eye of the take-up lever is formed by bending the said lever up and then down, so that its end is situated beneath the body of the lever, and thereby all danger that the thread shall become disengaged from said eye is avoided.

In the drawing, the letter A designates the

face-plate of the needle-arm or goose-neck of a sewing-machine. In the inner surface of the face-plate are formed guide-grooves for the needle-slide B, and also for the presser-slide; but in the drawing I have only shown the needle-slide, since my invention has no connection whatever with the presser-slide. Through the upper portion of said face-plate extends a shaft, *a*, on the inner end of which is mounted a toe, *b*, which is subjected to the action of a spring, *c*, that has a tendency to retain the same in the position shown in Fig. 1 of the drawing. On the outer end of the shaft *a* is secured the take-up lever C, which, when the toe *b* is in the position shown in Fig. 1, occupies the position shown in full lines in Fig. 3; but if the toe *b* is brought in the position shown in Fig. 2, the take-up lever assumes the position shown in dotted lines in Fig. 3.

The eye *d* of the take-up lever is formed by bending the same up and then down, (see Figs. 4 and 5,) so that its end extends beneath the body of the lever, while the eye itself is raised above the surface of said lever, and thereby the thread is prevented from becoming disengaged accidentally, and it can readily be introduced by passing it close to the under surface of the lever.

On the needle-slide B is secured a tappet, *e*, which can be adjusted up and down by a slotted plate, *f*. This tappet is so situated that the same, when the needle-slide is clear down, occupies a position at some distance beneath the toe *b*. (See Fig. 1.) The needle-slide, therefore, is free to move up a certain distance before the take-up lever begins to act. The object of this arrangement is to allow the shuttle to pass clear through the loop of the needle-thread before the latter is subjected to any strain by the take-up lever, and I am enabled to sew with very fine thread without danger of breaking the same by the action of the take-up lever. As soon as the tappet *e* strikes the toe *b* a positive motion is imparted to the same in the direction of the arrow marked near it in Fig. 3, and, since the take-up lever is of greater length than the toe, the upward motion of the eye of said take-up lever during the first half of its stroke is quicker than that of the needle-slide, and the slack thread is taken up with the requisite rapidity.

As the take-up lever approaches the upper end of its stroke the upward motion of the eye becomes very slow but powerful, so that the stitch is drawn perfectly tight without subjecting the thread to an undue strain, and during the last portion of the upward stroke of the needle-slide the take-up lever remains stationary. This object is effected by the peculiar shape of the toe, (see Fig. 2,) which also permits the needle-slide to descend until the point of the needle has entered the fabric to be sewed, before the take-up lever is permitted to move down.

It must be also remarked that the eye of the take-up lever is situated directly over the needle-slide, so that the thread can be carried from said eye to the eye of the needle without an intermediate guide. By this arrangement the injury done to the thread as the same is drawn through the intermediate guide by the alternate action of the take-up lever and the needle is avoided.

What I claim as new, and desire to secure by Letters Patent, is—

In a take-up mechanism for sewing-machines, the combination of a shaft, *a*, extending through the upper part of the face-plate *A*, the toe *b*, arranged on the inner end of the shaft, the spring *c* for throwing down the toe, the take up lever *C* on the outer end of the shaft, the needle-bar *B* in the face-plate, and the adjustable tappet *e* on the needle-bar, the whole being constructed for operation substantially as and for the object specified, whereby the needle-bar can move upward a certain distance before operating the take-up lever, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 14th day of October, 1876.

AD. BÖCHER. [L. s.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.