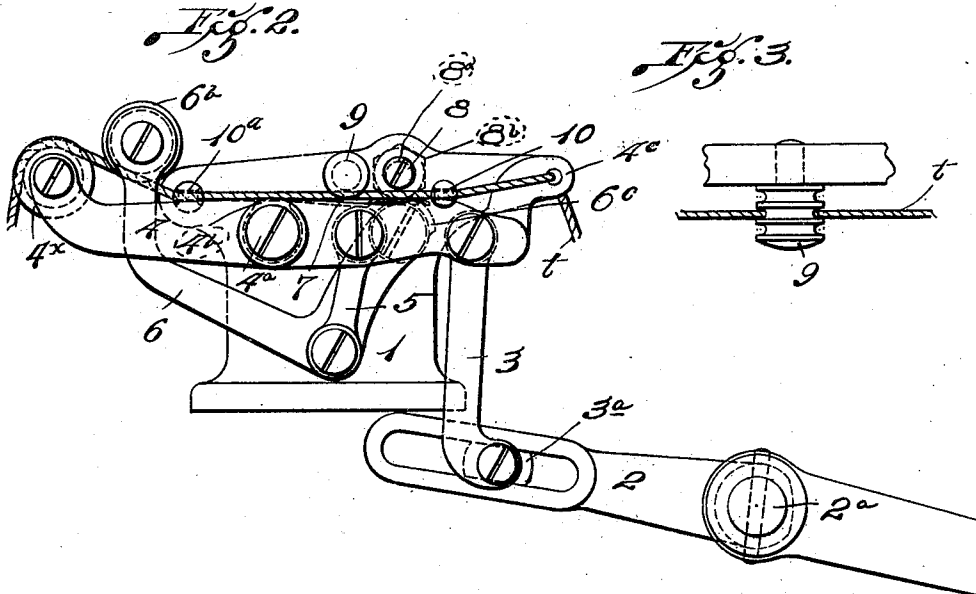
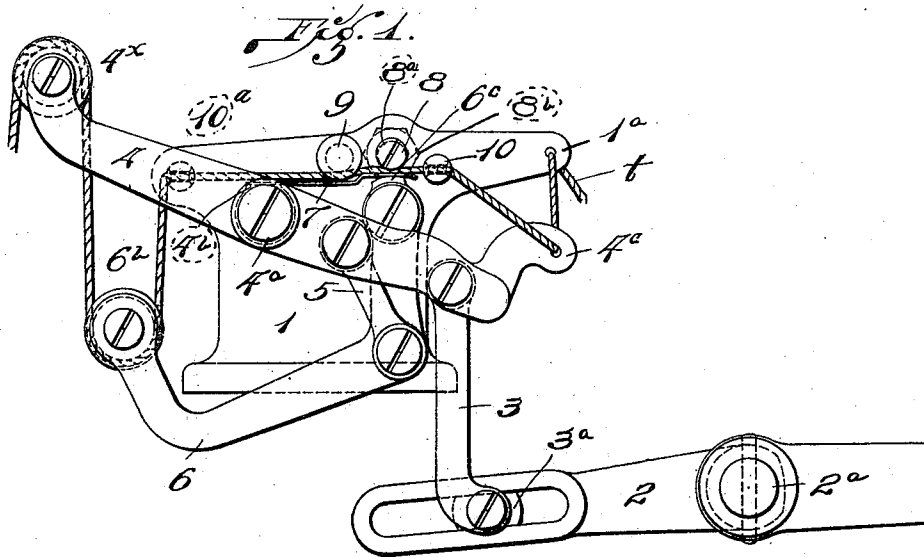


W. R. BLAIR.
 THREAD LOCK AND TAKE-UP FOR SEWING MACHINES.
 APPLICATION FILED JULY 21, 1909

981,521.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.



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WITNESSES:

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Fig. 4.

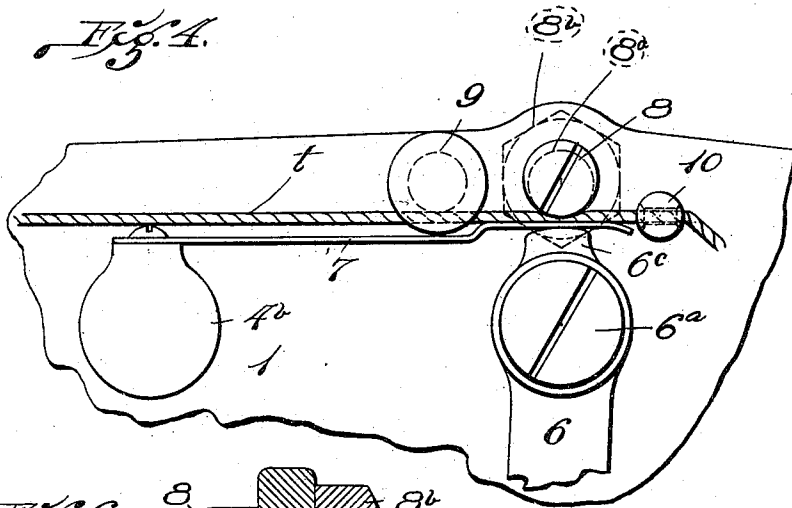


Fig. 6.

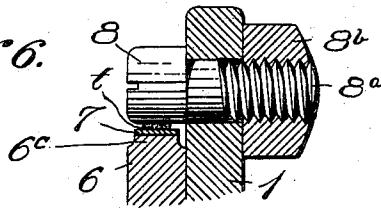
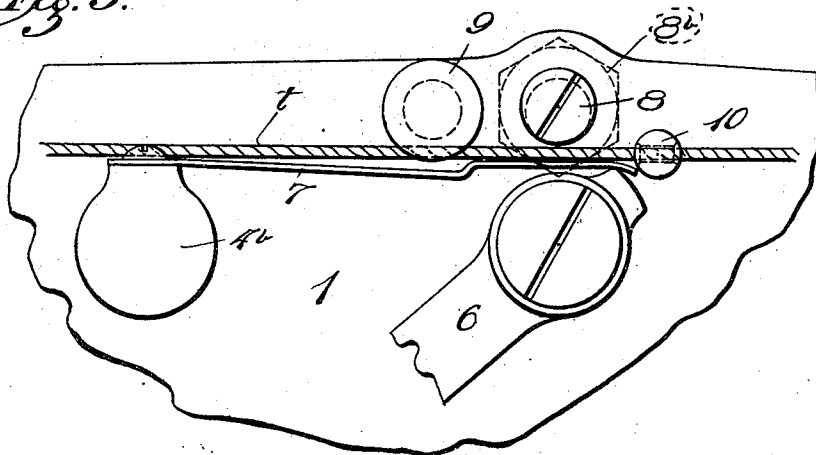


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM R. BLAIR, OF ST. LOUIS, MISSOURI, ASSIGNOR TO LANDIS MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

THREAD LOCK AND TAKE-UP FOR SEWING-MACHINES.

981,521.

Specification of Letters Patent. Patented Jan. 10, 1911.

Application filed July 21, 1909. Serial No. 508,736.

To all whom it may concern:

Be it known that I, WILLIAM R. BLAIR, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Thread Locks and Take-Ups for Sewing-Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of my improved thread lock and take-up device. Fig. 2 is a similar view showing parts in a different position. Fig. 3 is a detail view of the thread guide. Fig. 4 is an enlarged elevational view of the thread lock. Fig. 5 is a similar view showing parts in a different position. Fig. 6 is a detail view showing the manner of adjusting the thread lock.

This invention relates to a new and useful improvement in thread locks and take-up devices for sewing machines, being designed particularly as an improvement upon the well-known type of leather sewing machine known as the Campbell machine, such as illustrated in Patents Nos. 231,954, dated September 7, 1880, 253,156, dated January 31, 1882, 374,934 and 374,936, dated December 20, 1887.

The object of my present invention is to simplify the lever drive of the take-up mechanism for the Campbell machine, making the same practically noiseless.

Another object is to provide an improved thread lock on said machine, which is positive in its action and which will not chafe or injure the thread in any way; and a still further object is to provide an adjustable backing device for the thread lock whereby not only different wearing surfaces will be presented to the action of the thread, but said wearing surfaces may be so adjusted as to take up wear of the parts or accommodate different sizes of thread.

With these objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device, all to be herein described and thereafter pointed out in the claims.

In the drawings, 1 indicates the casting or support which is mounted in an appropriate manner upon the overhanging arm of the machine.

2 is a lever driven by a cam (not shown) and provided with a slot in its inner end, in which is adjustably mounted a block 3^a, to which a link 3 is connected. By adjusting the block 3^a toward and from the pivotal point 2^a of the lever, the throw of link 3 may be regulated. Link 3 is pivotally connected at its upper end to a lever 4 pivoted to the casting at 4^a.

5 is a link pivotally connected to lever 4 and also to an L-shaped auxiliary lever 6, which latter is pivotally connected to the casting 1 at 6^a. This lever 6, or take-up arm, as it might be called, is provided with a roller 6^b at its end under which the thread to be taken up is arranged. The hub of lever 6 is provided with an enlarged portion 6^c constituting a thread lock, and which operates under a yielding plate 7 supported by a post 4^b upon which the lever 4 is mounted. This yielding plate 7 (see Figs. 4, 5 and 6) lies under a companion thread-locking part 8 in the form of a circular head upon a screw bolt 8^a fastening through the casting 1. The threaded portion of this bolt receives a clamping nut 8^b. A slot is preferably arranged in the eccentric head. By turning the eccentric head so that the periphery thereof is properly distanced from the plate 7 (see Fig. 6), the nut 8^b may be screwed up to lock the eccentric head in position.

9 is a thread guide in the form of a post secured in the casting 1, and whose periphery is provided with circumferential grooves whereby the thread may be positioned close to the casting 1, or farther away therefrom, as desired, and depending upon the wear of the parts 7 and 8. It is not necessary to employ a circumferentially grooved part 9, as it is obvious that the same can be dispensed with, or in lieu thereof an eye may be screwed into the casting 1 so that the eye will be adjustable toward and from the casting 1 to adjustably guide the thread at a point close to the eccentric head 8, such as illustrated by the usual thread guides mounted in the casting 1.

The operation of my improvement is as follows: The thread *t* is usually waxed, and in issuing from the wax pot passes through an eye 1^a in the casting 1. Thence the thread passes through an eye 4^c in the rear end of lever 4 which constitutes a thread measuring device. The thread then passes

through the eye 10 and through the thread-locking device past the thread adjusting guide 9, if such is used, and through a second stationary thread guide or eye 10^a secured to the casting 1. The thread then passes under the roller 6^b on the end of the take-up arm 6, and over the roller 4^x on the end of the oppositely movable lever or take-up arm 4. When the parts are in the position shown in Fig. 2, the needle is descending and carrying the needle thread through the leather or goods being sewed. In the position of the parts here shown, the thread can be fed to the extended movement of the needle as it is free to pass through its several eyes, which at this point are substantially in alinement, also freely through the locking device, which is open at this time. When the needle starts to recede to tighten the loop over the nether thread from the bobbin or shuttle, lever 2 descends, its first movement being to cause the locking enlargement on the hub of lever 6 to lock the thread therebetween and the eccentric head 8. As the forward end of lever 6 descends and the forward end of lever 4 rises, the thread is rapidly taken up by the oppositely movable rollers 4^x and 6^b, and at the same time the rear end of lever 4 pulls a sufficient quantity of thread through the wax pot or measures the thread for another stitch. When lever 2 rises again, the needle is descending for the next stitch and absorbing the free thread in front of the locking device in a manner well-known.

It will be observed with respect to my improved take-up mechanism, that the parts are pivotally mounted, and consequently are simple in construction and positive in their action. The yielding plate 7 interposed between the locking lug 6^c and the eccentric head 8 prevents any abrasions of the thread by the movement of the part 6^c, and also avoids any possibility of creepage or movement of the thread after the thread is locked or while the part 6^c is moving to a locking position.

I am aware that minor changes in the construction, arrangement and combination of the various parts of my improved device can be made and substituted for those herein shown and described, without in the least departing from the nature and spirit of my invention.

I claim:

1. In a device of the class described, the combination with a driving lever, a take-up lever connected thereto having a thread engaging part on either side of its pivot, a thread eye engaging the thread adjacent one end of the take-up lever, an auxiliary take-up lever connected to the main take-up lever, and engaging the thread passing between one thread engaging part of the take-up lever and the thread eye.

2. In a device of the class described, the combination with a driving lever, a take-up lever connected thereto having a thread engaging part on either side of its pivot, a thread eye engaging the thread adjacent one end of the take-up lever, an auxiliary take-up lever connected to the main take-up lever, and engaging the thread passing between one thread engaging part of the first mentioned take-up lever and the thread eye, a lug connected thereto and coöperating with a stationary lug to clamp the thread passing between these parts.

3. In a device of the class described, the combination with a driving lever, a take-up lever connected thereto having a thread engaging part on either side of its pivot, a thread eye engaging the thread adjacent one end of the take-up lever, an auxiliary take-up lever connected to the main take-up lever and engaging the thread passing between one thread engaging part of the take-up lever and the thread eye, a lug operated thereby and coöperating with a stationary lug to clamp the thread passed between these parts, and a spring interposed between the lugs.

4. In a device of the class described, the combination with a driving lever, a take-up lever connected thereto having a thread engaging part on either side of its pivot a thread eye engaging the thread adjacent one end of the take-up lever, an auxiliary take-up lever connected to the main take-up lever and engaging the thread passing between one thread engaging part of the take-up lever and the thread eye, a lug operated thereby, and coöperating with an adjustable eccentrically headed pin to clamp the thread passed between these parts.

5. In a device of the character described, the combination of a take-up arm, a lug thereon a yielding plate in the path of movement of said lug, and an adjustable eccentric having a thread engaging surface with which said plate coöperates to constitute a thread lock.

6. In a device of the character described, the combination of a yielding plate, means for moving the free end of said plate, and an adjustably mounted eccentric head having a thread engaging surface with which the free end of said plate coöperates.

7. In a device of the character described, the combination of a movable thread-engaging part, means for moving said part, a pin having an eccentric head between which parts the thread is adapted to be clamped, and means for locking said eccentrically mounted pin in adjusted positions.

8. In a thread locking mechanism, the combination of a yielding plate, means for moving the free end of said plate into engagement with the thread to be locked, a bolt having an eccentric head for engaging

with said thread, and a nut on said bolt for holding it in a rotatably adjusted position.

9. In a device of the class described the combination with a driving lever, a take-up lever connected thereto having a thread engaging part on either side of its pivot, a thread eye engaging the thread adjacent one end of the take-up lever, an auxiliary take-up lever, and a link connecting the main to the auxiliary take-up lever, said auxiliary lever engaging the thread passing between one thread engaging part of the take-up lever and the thread eye.

10. In a device of the class described the combination with a driving lever, a take-up lever connected thereto having a thread en-

gaging part on either side of its pivot, a thread eye engaging the thread adjacent one end of the take-up lever, an L-shaped take-up lever, and a link connecting the main to the L-shaped take-up lever, said L-shaped lever engaging the thread passing between one thread engaging part of the take-up lever and the thread eye.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 19th day of July, 1909.

WILLIAM R. BLAIR.

Witnesses:

ALMA GEBHART,
LENORE CLARK.