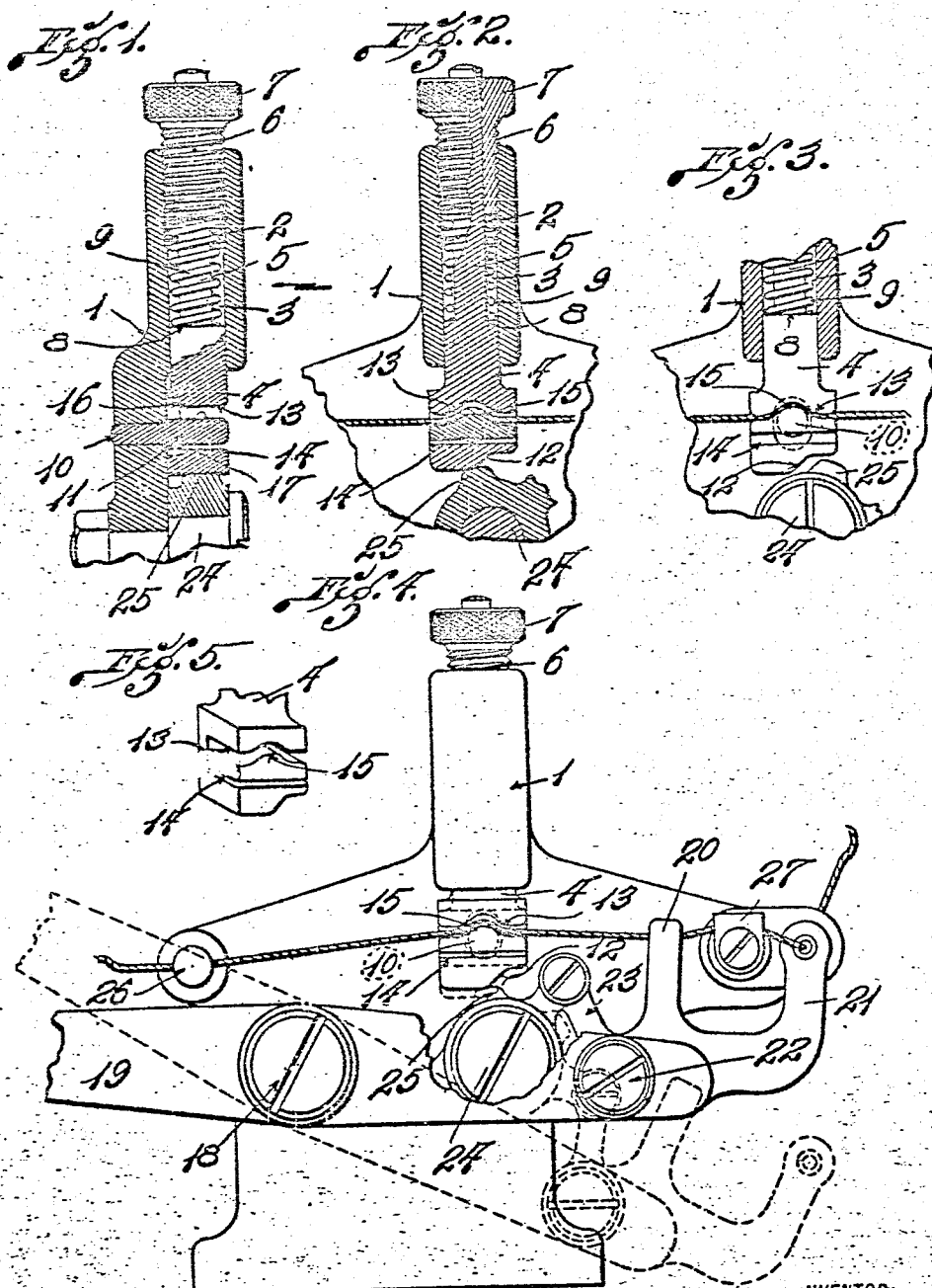


W. R. BLAIR.
THREAD LOCK FOR SEWING MACHINES.
APPLICATION FILED JUNE 24, 1910.

982,234.

Patented Jan. 24, 1911.



WITNESSES:

E. M. Harrington
W. D. Smith

INVENTOR

W. R. Blair

BY

J. R. Carnwath
ATTORNEY

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 FOR SEWING-MACHINES.

982,234.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed June 24, 1910. Serial No. 568,731.

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 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 sectional view of the thread locking or tension device in position to release the thread. Fig. 2 is a sectional elevation of the thread tension shown in Fig. 1, looking in the direction of the arrow. Fig. 3 is a fragmentary view of the tension device in position to lock the thread. Fig. 4 is a view in elevation of the tension device with operating means. Fig. 5 is a detail view showing the thread locking jaws.

This invention relates to a new and improved thread locking or tension device, which may be applied to any type of machine and it is especially adapted for use in connection with wax thread sewing machines of the well known type.

The object of my present invention is to improve the old type of tension devices by constructing the jaws with opposing curved surfaces so as to form a kink in the thread, and thereby produce a more positive lock.

It is a further object of my invention to operate the clamping jaws from a cam connected to the take-up device.

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

In the drawings, 1 indicates a recessed boss on the frame of the machine, a portion of the interior of which is threaded as indicated by numeral 2. Within the opening 3 is slidably mounted a member 4 having a spindle 5 attached thereto. Screwed within the boss 1 is an adjustable nut 6 with nurl head 7, this nut being hollow to allow the passage of the spindle 5. Lying between the end of the nut 6 and the shoulder 8 formed between the union of the part 4 with the spindle 5 is a helical spring 9 surrounding the spindle. At the lower end of the member 4 is a cam portion 12. Above this cam

formed surface 12 the member 4 is made to form two surfaces 13 and 14, the surface 13 being reversely curved and serving to form the clamping surface for a thread when locked.

Mounted in the frame 1 is a pin member 10, having an enlarged head or anvil 11, extending between the surfaces 13 and 14 of the member 4, and curved on its top surface 15 to correspond with the curvature of the surface 13 on the member 4. The lower surface of the head 11 is spaced sufficiently from the surface 14 of the member 4 to allow this member to be moved to separate the surfaces 13 and 15 without engaging the surface 14. The pin member 10 between the part extending into the frame 1 and the head 11 is shouldered as at 17 to fit the corresponding groove 16 in the member 4.

Pivoted on the stud 18 in the frame of the machine below the tension device is the ordinary take-up lever 19 having the thread engaging ends 20 and 21. Mounted on a stud 24 is a cam 25 which is connected through a link 23 with a stud 22 on the lever 19. The thread extends from an eyelet 26 on the frame 1 through the tension lock and through the member 20 over guide roll 27, and through the arm 21 to the wax pot of the machine. The eyelet 26, tension lock, arms 20 and 21 and the guide roll 27 are so arranged that the thread passes in a substantially straight line through these elements.

The operation of the device is as follows; As the lever 19 is moved into a position, shown in dotted lines in Fig. 4 the thread is pulled through the wax pot by the action of the arms 20 and 21, and simultaneously the cam 25 is moved away from the surface 12 of the thread tension device 4 so that the spring 9 acts to push the jaw surface 13 downward to clamp the thread between this surface and the jaw surface 15 of the anvil 11. By forming the surfaces 13 and 15 reversely curved the thread clamped therebetween is deflected, or kinked, so that the tension is more positive. By the adjustment of the screw 6 by the nurl head 7 the pressure exerted by the spring 9 may be regulated.

I am aware that minor changes in the construction and arrangement and combination of the various parts of my improved device can be made and substituted for those here-

in shown and described, without departing from the nature and spirit of my invention. This tension device may also be used in other connections and on machines other than sewing machines.

I claim:

1. A tension device, comprising a pin member mounted in the frame of the machine and formed at one end with a head or anvil having a thread engaging surface, a yoke-shaped member surrounding the anvil and having a thread engaging surface opposed to that on the anvil, and means to raise said yoke-shaped member.

2. A tension device, comprising a pin member mounted in the frame of the machine and formed at one end with a head or anvil having a thread engaging surface, and a spring actuated yoke-shaped member surrounding the anvil and having a thread engaging surface opposed to that on the anvil.

3. In combination, a take-up lever, an independently mounted cam, a link connecting said lever and cam, a tension clamp having cooperative thread engaging curved surfaces, and arranged to be released by the cam.

4. In a machine, a frame work, a pin fixed thereto and projecting laterally therefrom having an enlarged head or anvil, a member slidably mounted in an opening in the frame work above the pin, and adapted to

coöperate with the anvil to form a clamp, and a spring acting upon said slidably mounted member.

5. In a machine, a frame work, a pin projecting laterally therefrom having an enlarged head or anvil, a slidably mounted yoke-shaped member, said yoke portion embracing the head or anvil of the pin.

6. In a machine, a frame work, a pin projecting laterally therefrom having an enlarged head or anvil, a slidably mounted yoke-shaped member, said yoke portion embracing the head or anvil of the pin, an oscillatory cam adapted to engage the lower end of the slidably mounted member, and means to actuate said cam.

7. In a machine, a frame work, a pin projecting laterally therefrom having an enlarged head or anvil, a slidably mounted yoke-shaped member, said yoke portion embracing the head or anvil of the pin, an oscillatory cam adapted to engage the lower end of the slidably mounted member, a take up lever, and means connecting said cam and take-up lever to actuate said cam.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 21st day of June, 1910.

WILLIAM R. BLAIR.

Witnesses:

M. P. SMITH,
J. W. CLIFT.