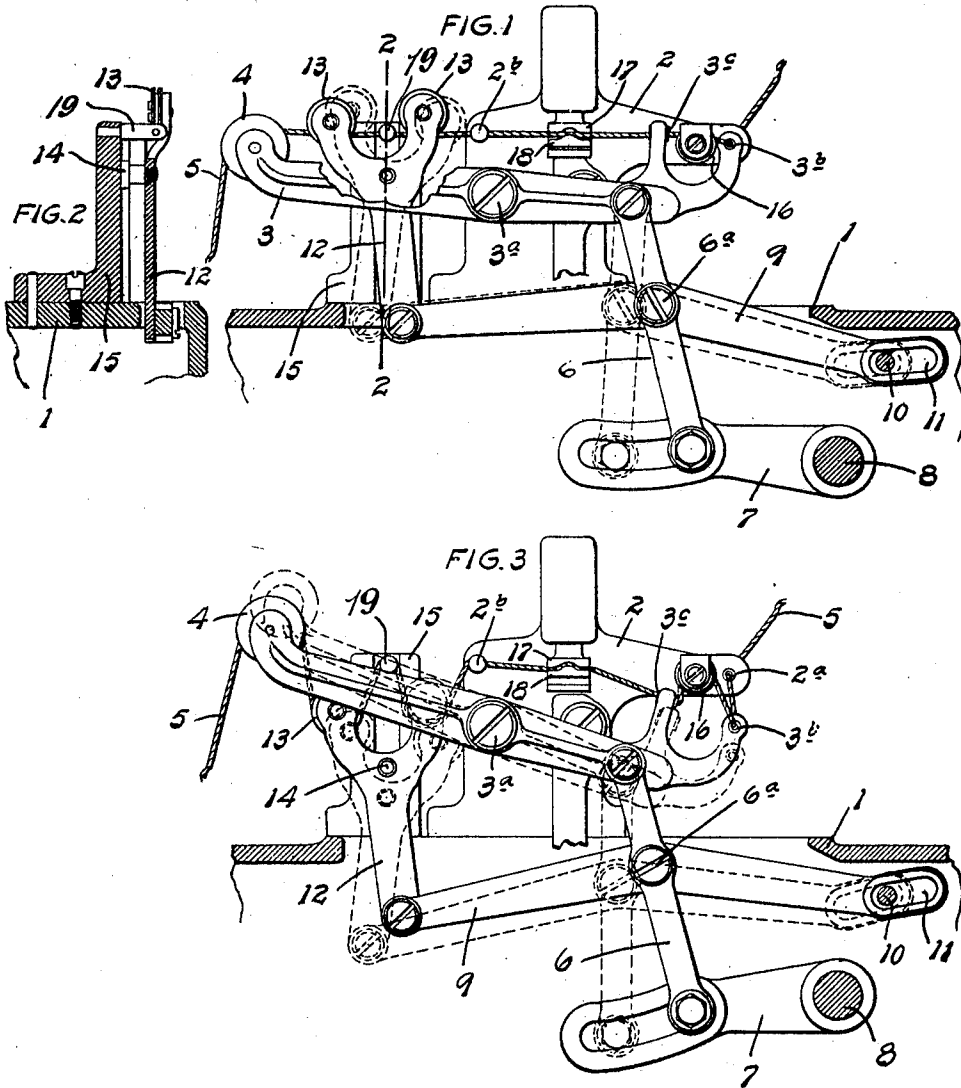


W. R. BLAIR.
 THREAD TAKE-UP MECHANISM FOR SEWING MACHINES.
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1,048,442.

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WITNESSES:

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THREAD-TAKE-UP MECHANISM FOR SEWING-MACHINES.

1,048,442.

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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-Take-Up Mechanism 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 take-up mechanisms for sewing machines. Fig. 2 is a vertical sectional view on line 2—2, Fig. 1. Fig. 3 is a side elevational view showing the parts in different position from that disclosed in Fig. 1.

This invention relates to a new and useful improvement in thread take-up mechanisms for sewing machines particularly of the waxed thread type used for sewing leather and consists in the peculiar arrangement of a pivoted thread lever, a floating lever and means for driving the same, together with the connections between said lever and the movable take-up rollers, all of which are hereinafter to be described, and afterward pointed out in the claims.

In the drawings: 1 indicates the main frame or housing of the sewing machine to which is secured, a bracket 2, upon which bracket is pivoted the thread lever 3, the pivot point of said lever being indicated at 3^a. The outer end of lever 3 is provided with a roller 4 over which a thread 5 passes to the stitch forming mechanism. The inner end of lever 3 is connected by a link 6 to a curved slotted rock arm 7, said arm being mounted upon a rock shaft 8, whereby the arm 7 vibrates in the operation of the machine. The link 6 above referred to is pivotally connected at 6^a to a floating lever 9. The inner end of said lever is slotted as at 11 to cooperate with a pin 10 mounted in the housing of the machine, this slot and pin connection or mounting permitting said floating lever to have a variable fulcrum. This variable fulcrum is necessary, when it is desired to adjust the connection between the link 6 and the rock arm 7. The slot in the end of the rock arm is preferably curved in an arc of a circle described from the axis of the pivotal connection between link 6 and the thread

lever 3, whereby when the parts are in normal position, as shown in full lines Fig. 1, the connection between link 6 and the rocking lever 7 may be adjusted outwardly, as indicated by dotted lines in Fig. 1, such adjustment not disturbing the position of any of the parts which would affect the straight lines assumed by the thread in its feeding action. However, when the lever 7 descends and the thread is being taken up, the thread lever, when the link 6 is adjusted outwardly in the slot of the rock arm 7, as indicated by dotted lines in Fig. 3, is caused to make a greater stroke, as is also the floating lever 9 and the parts controlled thereby.

The floating lever 9 before referred to is pivotally connected at its forward end to a Y-shaped oscillating lever 12, which carries the two rollers 13 one on each prong, and which lever is guided in its oscillatory movement by means of a headed stud 14 operating in a T-shaped groove in the face of a bracket 15, (see Fig. 2,) secured to the frame or housing of the machine.

In operation, the thread 5 leads from a wax pot through an eye 2^a in the bracket 2, then through an eye 3^b on the inner end of lever 3, thence from a roller 16 mounted on bracket 2 and through an eye 3^c on the inner end of the thread lever 3. After passing through this eye 3^c the thread passes between clamping or locking jaws 17 and 18, which are operated to lock the thread during the take-up thereof, and to release the thread when the same is being fed to the stitch forming machine, but as these clamping jaws form no part of my present invention, I shall not describe them more fully here. From the clamping jaws the thread passes through an eye in a post 2^b on the bracket 2 thence under one of the rollers 13 on the oscillating Y-shaped lever through an eye in a stationary post 19, thence under the companion roller 13 on the Y-shaped oscillating lever, and finally over the roller 4 of the thread lever 3 to the stitch forming mechanism.

When the rocking lever 7 moves from the position shown in Fig. 1 to the position shown in Fig. 3, the thread lever is directly operated thereby and consequently the distance of the pivotal connection of the link 6 to the rock arm relative to the axis of movement of said rock arm, assuming that the rock arm has a given length of stroke

for each vibration, will determine the stroke of the thread lever. The closer the axis of movement of said pivotal connection is to the shaft 8, the shorter will be the movement of the thread lever, this movement increasing as the link is adjusted outwardly in its slot.

The floating lever with its variable fulcrum is carried with the link 6 in the different positions of the latter, and this will tend to tilt the Y-shaped oscillating lever slightly on its vertically sliding pivot pin, but this is not objectionable in practice. As the link 6 is adjusted outwardly on the rock arm 7, its stroke becomes greater, due to the greater arc of movement of its co-acting driving member, and hence the forward end of the floating lever under such conditions, will be given a relatively greater stroke shown by dotted lines in Fig. 3.

I claim:

1. In a thread take-up mechanism for

sewing machines, the combination of a thread lever, a rock arm, a link connecting said thread lever and rock arm, a floating lever having a variable fulcrum and connected to said link, and an oscillatory thread lever to which the outer end of said floating lever is connected.

2. In a device of the class described, a pivoted thread lever, an oscillatory thread lever, a floating lever pivoted to said oscillatory thread lever, a link connected to said pivoted thread lever and said floating lever, a rock arm, and an adjustable connection between said link and said rock arm for regulating the throw of said thread levers.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 23d day of January, 1912.

WILLIAM R. BLAIR.

Witnesses:

F. R. CORNWALL,
M. P. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."