

C. F. MILLER.
 THREAD MEASURING DEVICE FOR LEATHER STITCHING MACHINES.
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Fig. 1.

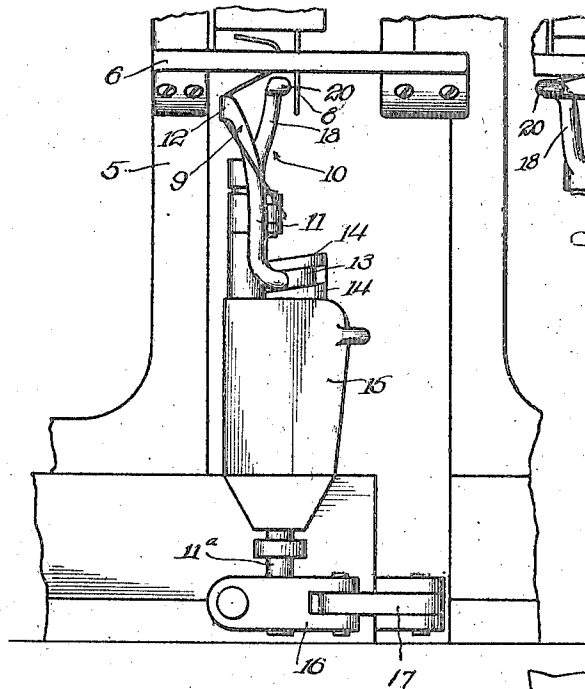


Fig. 3.

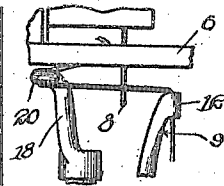
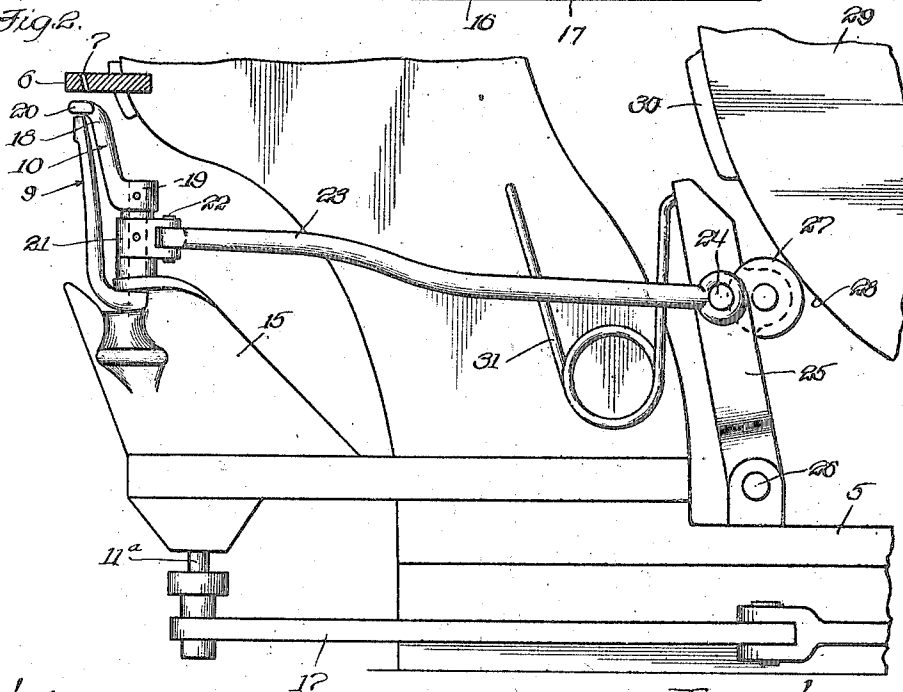


Fig. 2.



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 By *Charles F. Miller* Attys.

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UNITED STATES PATENT OFFICE.

CHARLES F. MILLER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO CHICAGO SHOE MACHINERY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

THREAD-MEASURING DEVICE FOR LEATHER-STITCHING MACHINES.

Application filed March 16, 1921. Serial No. 452,675.

To all whom it may concern:

Be it known that I, CHARLES F. MILLER, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Thread-Measuring Devices for Leather-Stitching Machines, of which the following is a specification.

This invention relates to new and useful improvements in thread measuring devices for leather stitching machines.

The principal object of this invention is to provide a thread measuring device which oscillates about a vertical axis and co-operates with a thread-thrower to measure a fixed amount of thread for each stitch.

Another object of the invention is to provide a measuring device of the character described which includes a thread-engaging finger carried by a vertical supporting shaft, and off-set from the axis thereof, so as to be oscillated in a horizontal plane to first engage and retain a loop of thread while the thread-thrower carries one strand of said loop into a position to be engaged by the hook of a co-operating needle, and to subsequently release said loop of thread during the up-stroke of the needle.

In the drawings,

Figure 1 is a front elevation showing the stitch-forming mechanism of a leather stitching machine and including my improved thread-measuring device,

Figure 2 is a sectional view thereof, showing the actuating mechanism for said thread-measuring device, and

Figure 3 is a detail view showing the positions of the parts at the time the needle begins to elevate the thread.

Like reference numerals designate corresponding parts in all the figures of the drawings.

Referring to the drawings, 5 designates the frame of the sewing machine, and 6 the work support, which is carried thereby, and formed with a feeding slot 7, in which the awl (not shown) moves to feed the work. The stitch-forming mechanism includes a vertically reciprocating hooked needle 8, a thread-thrower 9, and a thread-measuring device 10. The needle oscillates in a vertical path from a point above the work to a point below the work support. The thread-thrower 9 and the thread-measuring device

10 are movably supported below the work support and co-operate with one another and with the needle.

The thread-thrower 9 includes an arm 11 having a thread guide 12 formed at its upper end. This arm extends in a substantially vertical plane, but is off-set from the vertical shaft 11^a, to which it is connected. Fixed to the shaft 11^a is a block 13 which rides between inclined tracks 14—14. The shaft 11^a is suitably journaled in a bracket 15, and fixed to the lower end of said shaft is an arm 16, which is actuated from a link 17 by a cam mechanism not shown. It will thus be seen that as the shaft 11^a is oscillated, the thread guide 12 will be oscillated from right to left, and vice versa, in an inclined path, the movement from left to right being upwardly inclined.

Co-operating with the thread-thrower 9 is the thread measuring device 10. This thread-measuring device comprises an arm 18, which is carried by a shaft 19, the shaft 19 being disposed in a vertical plane and suitably journaled in the bracket 15. The arm 18 is off-set from the axis of the shaft 19 and is provided at its upper end with a laterally extending thread-engaging finger 20. Fixed to the shaft 19 is a rock-arm 21 which is pivotally connected, as at 22, to one end of a link 23. The other end of the link 23 is pivotally connected, as at 24, to a roller-lever 25, which is pivoted at its lower end, as at 26, to the frame 5 of the machine. The lever 25 has a cam-engaging roller 27 journaled thereon, and this roller normally engages the periphery 28 of a cam disk 29, which carries on its periphery an outwardly extending cam 30. A spring 31 has one end bearing against the frame 5 and the other end against the upper end of the roller-carrying lever 25, so as to yieldingly retain said roller in engagement with the periphery 28 or the cam 30 of the cam disk 29.

When the shaft 19 is oscillated the thread-engaging finger will be oscillated in a horizontal plane above the thread-guide 12 of the thread-thrower 9.

Assuming the parts to be in the positions shown in Figure 1, the shaft 19 is oscillated so that the finger 20 will be moved to the left for engagement with the loop of thread. While the finger 20 is retaining this

loop of thread, the thread-thrower 9 will be moved upwardly to the right whereby the thread will be positioned to be engaged by the hook of the needle 8 when the latter rises. It will, therefore, be seen that the thread finger 20 measures a predetermined amount of thread for each stitch. The shaft 19 is then returned to its normal position, as shown in Figure 1 of the drawings.

10 What I claim is:

1. In a leather stitching machine, the combination with a work support, of a hooked needle reciprocating in a vertical plane from a point above the work support, a thread thrower disposed below the work support and movable upwardly in an inclined plane upwardly from left to right to position the thread for engagement by the hook of the needle, and a thread-measuring finger oscillating in a horizontal plane below the work support and above the thread thrower and co-operating therewith to measure a fixed amount of thread for each stitch.

25 2. In a leather stitching machine, the combination with a work support, of a hooked needle reciprocating in a vertical

plane from a point above the work support, a thread thrower disposed below the work-support and movable upwardly in an inclined plane to position the thread for engagement by the hook of the needle, a vertical shaft, an off-set thread-engaging finger carried by the upper end of the shaft, and means for oscillating said shaft whereby said finger will cooperate with said thread thrower to measure a fixed amount of thread for each stitch.

3. In a leather stitching machine, a thread measuring device comprising in combination, a vertical shaft an arm fixed to the upper end thereof and disposed in a vertical plane offset from the axis of said shaft, a laterally extending thread-engaging finger carried by the upper end of said arm, and means for oscillating said shaft, comprising a cam, a rock-arm fixed to said shaft, a lever, a roller carried by said lever, a spring engaging the lever to yieldably retain the roller in engagement with the cam, and a link connecting said rock-arm and said lever.

CHARLES F. MILLER.