Aug. 31, 1937. C. L. MOLLIS 2,091,828

STITCHING DEVICE

Filed Oct. 20, 1936 2 Sheets-Sheet 1

Fig. 1.

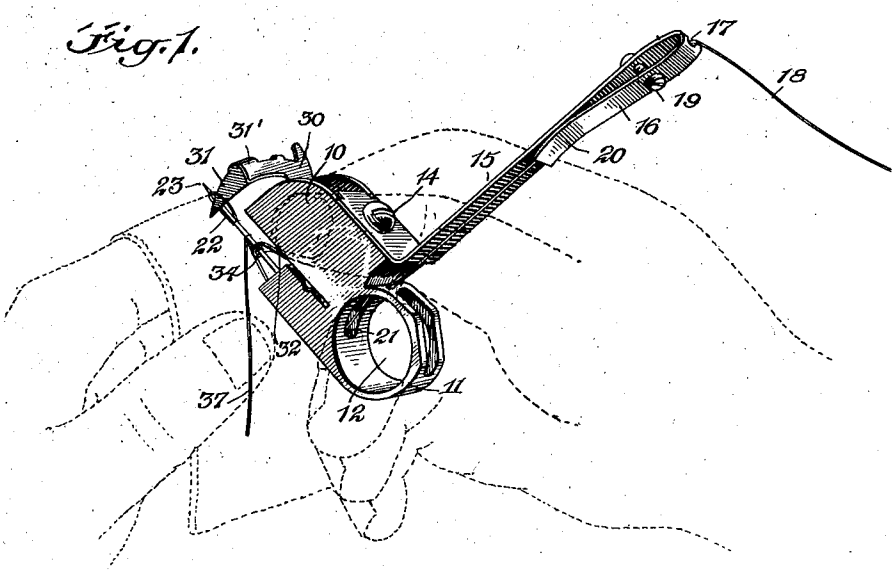


Fig. 2.

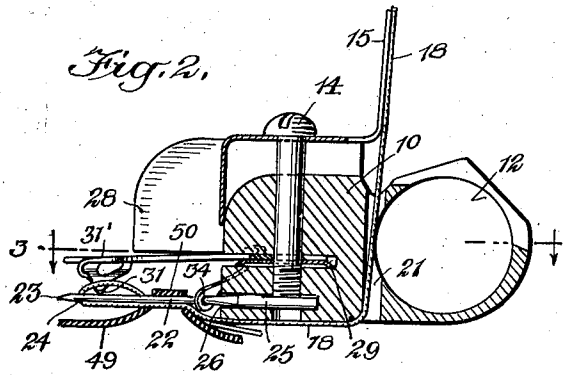


Fig. 4.

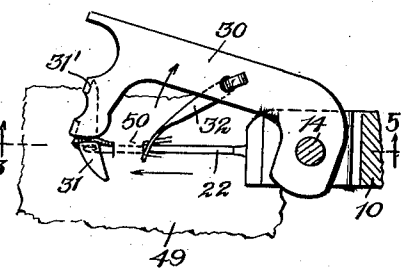


Fig. 3.

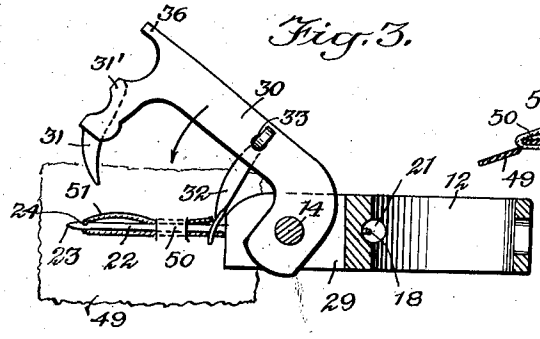
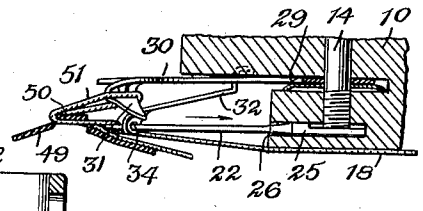


Fig. 5.



WITNESSES

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Fig. 6.

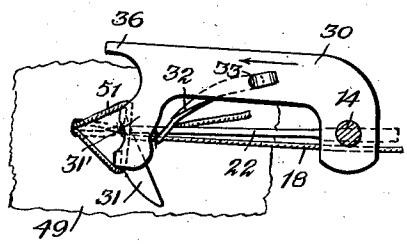


Fig. 7.

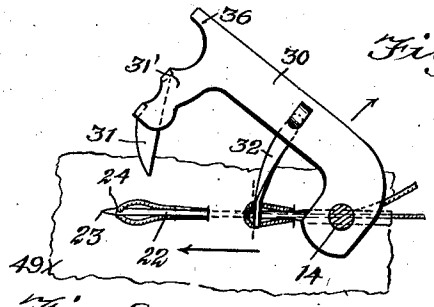


Fig. 8.

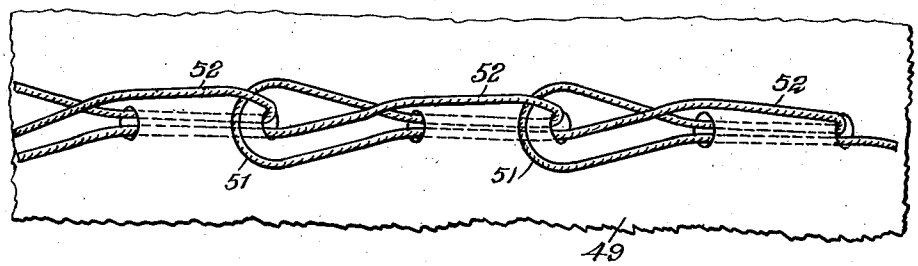


Fig. 9.

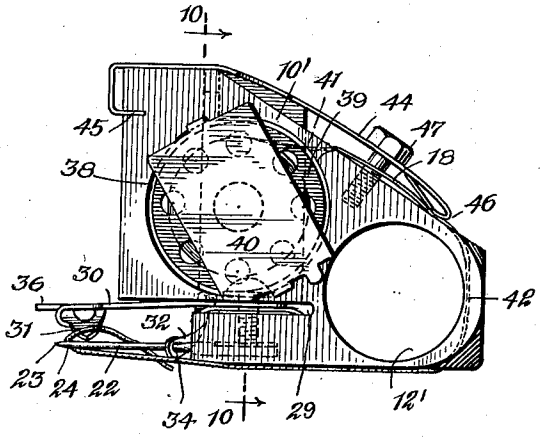
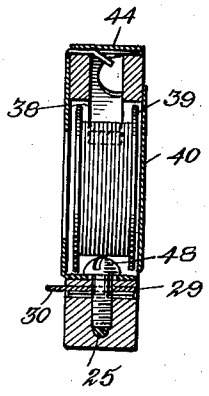


Fig. 10.



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UNITED STATES PATENT OFFICE

2,091,828

STITCHING DEVICE

Charles L. Mollis, Waterbury, Conn.

Application October 20, 1936, Serial No. 106,609

3 Claims. (Cl. 112—169)

This invention relates to improvements in stitching devices, particularly hand-operated stitching devices. My device may be used in many different types of sewing and stitching, but is particularly suited for use in felling, basting, or the like.

It is an object of my invention to provide an improved light, portable stitching machine which can be supported on the hand of the operator when in use and can be conveniently manipulated while thus supported to form loop stitches of the desired size.

A further object is the provision of an improved stitching or sewing device which can be used for many different purposes in sewing fabrics or other materials of many different types, and which is provided with a hand-operated looper which can be readily manipulated to form the stitches, and with improved tensioning means for applying tension to the thread or yarn from which the stitches are formed.

For a fuller understanding of the invention reference should be had to the accompanying drawings, in which

Fig. 1 is a perspective view of one form of stitching device embodying my invention, showing it in position for forming a loop;

Fig. 2 is a sectional view of the device shown in Fig. 1;

Fig. 3 is a plan view showing the initial position of my invention in the formation of a stitch;

Fig. 4 is a similar view showing the second position in the formation of a stitch;

Fig. 5 is a sectional view showing the third position;

Fig. 6 is a plan view of the looper and needle showing the fourth position in the formation of the stitch;

Fig. 7 is a view similar to Fig. 6 showing the final position in the formation of the stitch and the initial position in the formation of the next adjacent stitch;

Fig. 8 is a plan view of the looped stitches which may be formed by means of my new device;

Fig. 9 is an elevation in section of a modified form of device embodying my invention; and

Fig. 10 is a sectional view in the direction of the arrows on the line 10—10 of Fig. 9.

Referring first of all to the form of my invention shown in the first two figures of the drawings, the numeral 10 indicates a supporting member or frame which has formed integral with the rear portion thereof a ring 11 surrounding a finger opening 12 through which the finger of the operator may be projected in manipulating the device.

Secured to the upper surface of the supporting member, as by means of a machine screw 14, is a thread-guiding member 15, which is preferably formed of a thin strip of spring metal extending upwardly from the upper surface of the supporting frame 10 and provided with a portion 16 at the upper end which is folded down upon the rear face of the metal strip. At approximately the fold line an opening 17 is provided through which the thread 18 from which the stitches are formed is fed downwardly to the stitching device. A small screw 19, extending between the folded down portion 16 and the main body of the strip of metal 15, controls the relative position of the two members and serves to place tension upon the thread 18 at the point 20, as most clearly appears from Fig. 1. By adjusting the position of the screw 19 the tension on the thread 18 can, of course, be varied.

The thread passes downwardly along the rear face of the thread guide 15, through a channel 21 formed through the supporting member 10 adjacent the finger opening 12, and from that point the thread passes along the under surface of the supporting member, extending beyond the forward edge thereof where it is fed through the eye of a needle 22. The needle 22 is of the sewing machine type, being provided with a point 23 at one end having an eye 24 formed adjacent the point, and having a shank 25 at the opposite end thereof, which is supported in an opening 26 formed in the forward face of the supporting member. The needle is held in position in the supporting member by means of the machine screw 14, which is of sufficient length to extend downwardly through an opening in the supporting member and engage the shank 25 of the needle.

The upper portion of the supporting member 10 preferably protrudes somewhat at the forward end, as indicated at 28, and immediately beneath the protruding portion 28 is formed a slot 29 extending from side to side of the supporting member and inwardly from the forward face thereof.

To aid in the formation of the stitches, I provide a looper which should be supported adjacent the needle in such a manner that it can shift back and forth across the forward end of the needle and engage the thread to form loops therein. For this purpose I preferably provide a shiftable member 30 formed of a flat strip of metal which is pivotally mounted in the slot 29 as by means of the machine screw 14 in such a manner

that it can shift or pivot back and forth with respect to the needle 22. Two important elements are associated with the looper 30, consisting of a laterally projecting, somewhat arcuate and tapering portion 31 formed adjacent the end of the member 30 in such a position as to be shiftable across the top of the needle adjacent the eye 24, and of a shiftable arm 32 pivotally mounted on the member 30 as by extending through and loosely engaging the opening 33, and which is provided with an opening 34 at its outer end disposed around and shiftable along the needle 22. The members 31 and 32 are so formed with respect to the strip 30 that when the strip 30 is shifted towards the needle 22 the arm 32 slides along the needle 22 towards the point thereof, and simultaneously the tapering portion 31 shifts across the upper surface of the needle just inside the eye thereof. As will be later explained, these combined elements enable the formation of a loop by the operator in a simple and convenient manner. The portion 31 is preferably formed integral with the looper 30 and is bent under upon itself so as to form the loop opener or spreader 31' as shown. To facilitate the manipulation of the looper 30, a handle portion in the form of an extension 36, may be provided adjacent the outer end of the looper, serving as a convenient means for engaging the finger of the operator.

In the form of my invention shown in the first two figures of the drawings the source of supply of the thread is located outside the device. Thus the thread 18 is fed from a conveniently located spool or spindle. The thread is extended through the opening 17, along the rear face of the guiding member 15, through the channel 21, along the under surface of the supporting member 10, and thus through the eye 24 of the needle 22. Sufficient thread should be pulled through the eye of the needle so as to leave a length 37, as indicated in Fig. 1, extending downwardly beyond the needle to prevent the thread from accidentally slipping through the eye of the needle. In manipulating the device, the length 37 of the thread may be wound around the finger of the operator or suitably held to insure the feeding of the thread in the formation of the loops and stitches from the source of supply. Suitable tension may be placed upon the thread 18 by adjusting the screw 19, thereby causing the depending portion 16 of the strip 15 to apply the proper amount of pressure to the thread.

If desired, the thread may be contained on a spool located inside the supporting member, as shown in Figs. 9 and 10 of the drawings, rather than be fed from a source of supply outside the member. In this form of my device the looper 30 and needle 22 are preferably of the same construction. The frame, however, indicated at 10', is somewhat different from the frame 10 in the first form of my invention. Thus the frame 10' may be formed with a finger opening 12' similar to the opening 12 in the first form of my invention, and it is also formed with a chamber or opening 38 located adjacent the forward end of the frame or supporting member 10' and adapted to receive a spool of thread 39. The spool 39 is inserted in the chamber or opening 38 and suitably held in place as by a removable plate 40 secured over the face thereof in such a manner that it can be conveniently removed to permit the removal of the old spool and the insertion of a new spool. The thread is fed outwardly, as indicated at 41 in dotted lines in Fig. 9, through an opening at the rear of the chamber and extended along the angular top wall of the supporting member towards the rear thereof, where it extends through a groove, as indicated in dotted lines at 42, formed in the rear wall of the frame to the under surface thereof where it extends along the under surface to the needle, and thence through the eye of the needle as explained in connection with the first form of the invention. The thread itself is indicated by the numeral 18 as in the first form of my invention.

Suitable means are also provided in this form of my invention for applying tension to the thread. Thus a strip of spring metal 44 is secured in a groove formed in the forward face of the frame, as indicated at 45, and extended over the top of the frame and thence down to the angular top portion thereof where it is provided with a looped end 46 and is held in position as by means of a machine screw 47. The thread 18 is extended beneath the looped end 46 and tension is applied thereto by adjusting the screw 47 to suitable position.

In this form of my invention the shank of the needle is engaged and held in position and the looper 30 is pivotally supported by means of a machine screw 48 extending downwardly from the chamber 38 through an opening provided in the frame.

In using either form of my stitching device, the looper 30 is first pivoted outwardly away from the needle 22, as shown in Fig. 3, and the needle is then extended through the cloth in the usual manner. The looper 30 is then pivoted in the direction of the arrows in Fig. 3 towards the needle, with the result that the shiftable arm 32 slides outwardly along the needle towards the point thereof, shifting the strip 50 of cloth 49 through which the needle extends towards the end of the needle and causing the thread to loop upwardly at the point 51 in Fig. 3. In the meantime, the tapering portion 31 is shifting towards the needle adjacent the eye 24 and finally engages the loop portion 51 and extends therethrough in the manner indicated in Fig. 4. In this manner it will be seen that a loop is formed adjacent the end of the needle which is then engaged by the portion 31 of the looper.

The next step is to withdraw the needle from the cloth in the manner indicated in Fig. 5, leaving the looper in the same position, with the result that at the same time that the needle is withdrawn the loop 51 will also be pulled outwardly from the cloth and increased in size as indicated in said figure.

When the needle has been completely withdrawn to the position indicated in Fig. 6, it will be seen that due to the formation of the loop extending portion 31' adjacent the tapered end 31, the loop 51 will slide around the loop extending portion 31' and will be held in extended position, as shown most clearly in Fig. 6. The needle 22 is then projected through the two bights of the loop 51 and again projected through the material which is being stitched, as shown in Fig. 7. As the needle is being projected through the fabric, the looper 30 is pivoted outwardly to the position shown in Fig. 7, which results in releasing the portions 31 and 31' from the loop leaving the parts free for the formation of the next stitch.

The operation is then repeated in the manner described to form the next adjacent stitch, and so on until the desired number of stitches have been formed. When the stitches are formed in this manner, stitches of the type shown in Fig.

8 will be produced consisting of a series of loops 51 which are held in position flat against the cloth by means of the portion of the thread indicated at 52 which is extended back from the next adjacent loop.

It will be appreciated that stitches of varying lengths may be formed; thus for basting, longer stitches are usually desired than for felling, and where longer stitches are desired a longer needle 22 and a corresponding longer looper 30 may be employed. My device may be used in stitching and sewing materials of various kinds, such as textile fabrics, leather, and the like.

One convenient manner of supporting and manipulating my device is indicated in Fig. 1 in which the hands of the operator are shown in dotted lines. The left hand of the operator supports a strip of fabric draped over the index finger, while the right hand supports the stitching device, the index finger engaging and manipulating the looper 30 and the middle finger extending through the opening 12. Of course, the device may be supported and operated in any other convenient manner.

It will be seen that by the apparatus herein described and claimed I have provided an improved stitching device of a light, portable nature which may be manipulated in a simple and convenient manner to form loop stitches. It should be understood that modifications may be made in the illustrated and described embodiments of my invention without departing from the invention as set forth in the accompanying claims.

I claim:

1. A stitching device comprising a supporting member, a needle carried by the member and having an eye adjacent the point thereof for supporting the thread from which the stitches are formed, and a looper comprising a shiftable member pivoted to the supporting member and provided with a narrow tapering portion shiftable across the end of the needle, and with an arm pivoted thereto and in engagement with and shiftable along the needle.

2. A stitching device comprising a supporting member formed with a finger opening at the rear thereof, a needle supported at the front of said member and having an eye adjacent the point thereof for supporting the thread from which the stitches are formed, and a looper comprising a shiftable member mounted on said supporting member above the needle and provided with an arcuate laterally projecting portion shiftable across the needle adjacent the end thereof and with an arm pivoted thereto and in engagement with and shiftable along said needle.

3. A stitching device comprising a supporting member, a needle carried by the member and having an eye adjacent the point thereof for supporting the thread from which the stitches are formed, and a looper comprising a shiftable member pivotally connected to the supporting member and having a narrow tapering end portion shiftable across the end of the needle adjacent the eye formed therein for engaging the thread and having an arm pivoted thereto and in engagement with and shiftable along the needle towards the end thereof when the shiftable member is shifted across the end of the needle so that the thread is thereby held in extended position.

CHARLES L. MOLLIS.