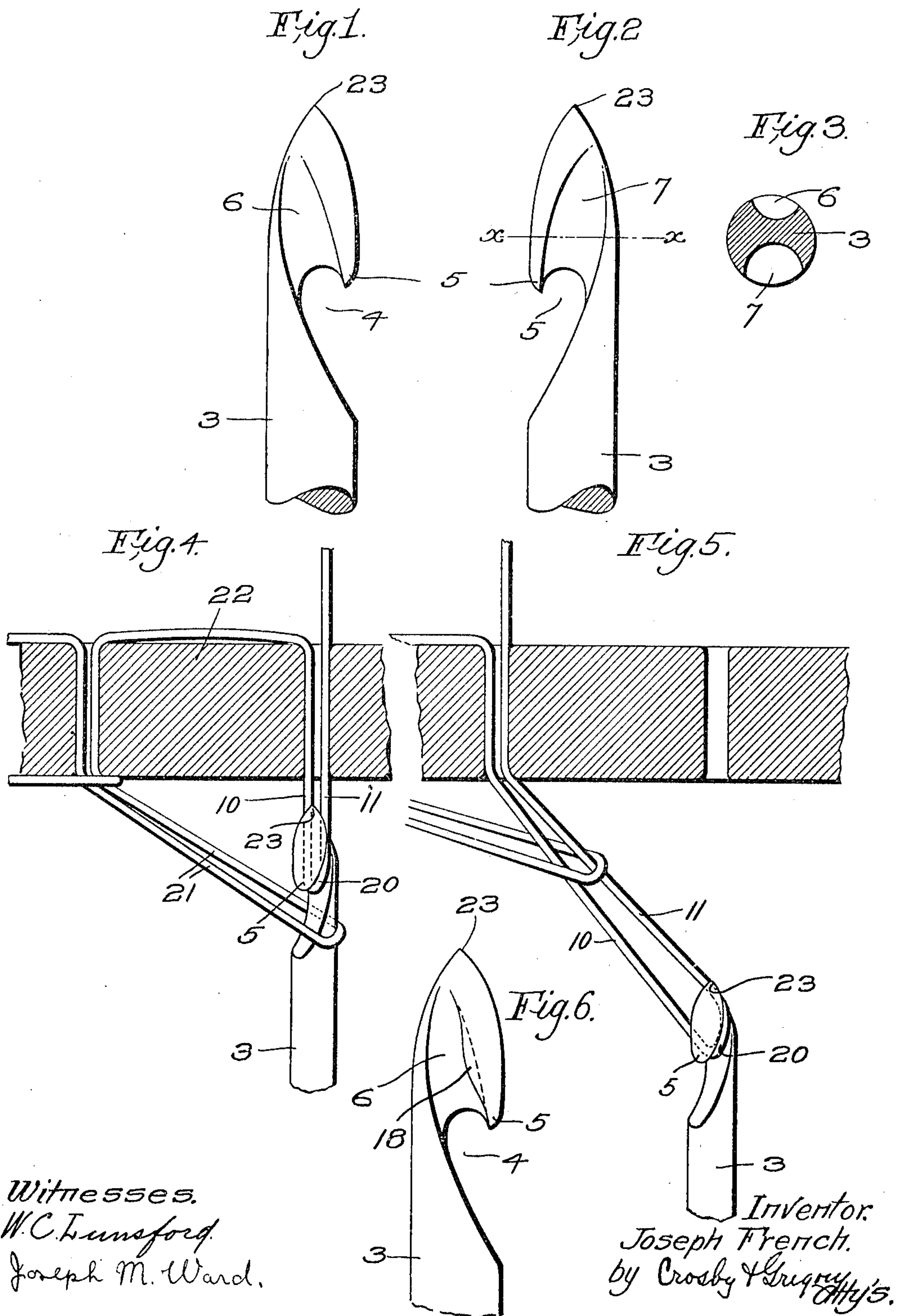


J. FRENCH.
SEWING MACHINE NEEDLE.
APPLICATION FILED MAR. 2, 1907.

947,484.

Patented Jan. 25, 1910.



Witnesses.
W.C. Lunsford.
Joseph M. Ward.

Inventor.
Joseph French.
by Crosby & Griggs
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH FRENCH, OF WOONSOCKET, RHODE ISLAND.

SEWING-MACHINE NEEDLE.

947,484.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed March 2, 1907. Serial No. 360,237.

To all whom it may concern:

Be it known that I, JOSEPH FRENCH, a citizen of the United States, and a resident of Woonsocket, in the county of Providence and State of Rhode Island, have invented an Improvement in Sewing-Machine Needles, of which the following description, in connection with the accompanying drawing, is a specification, like numerals on the drawing representing like parts.

This invention relates to straight sewing machine needles of the type having an open eye and a barb. Needles of this class are commonly used in one form of chain-stitch sewing machines, and their operation is well known to those skilled in the art. It is common to arrange such a needle in the sewing machine with its open eye and barb facing the direction from which the work is fed, but when the needle occupies this position it is necessary to use a cast-off in order to permit the previously-formed loop to be shed from the needle without catching in the barb thereof. If the needle is set facing the opposite direction or that toward which the work is fed, the previously-formed loop will be readily shed from the needle when the last-formed loop is drawn both through the work and through said previously-formed loop without the use of a cast-off, but when a needle as ordinarily made is in such position the point of the needle will not enter the last-formed loop during the penetrating movement of the needle, and as a result said last-formed loop will be dropped from the needle, thus making imperfect sewing.

It is the object of my invention to provide a needle of novel construction which will hold the thread comprising the last-formed loop in such a way that the point of the needle will not miss said loop when the needle is given its penetrative movement even when the needle is set so that the eye or barb faces away from the closed end of the previously-formed loop. A needle embodying my invention may thus be set so that a cast-off is not necessary for preventing the barb from catching in the previously-formed loop when the latter is shed and the needle may be used without danger of dropping the last-formed loop.

I will first describe one embodiment of my invention and then point out the novel features thereof in the appended claims.

In the drawings, Figure 1 is a side view

of one form of my improved needle; Fig. 2 is an opposite side view thereof; Fig. 3 is a section on the line $x-x$, Fig. 2; Figs. 4 and 5 are views showing the operation of the needle in the formation of stitches; Fig. 6 shows a modified form of the invention.

3 designates the needle and it has the usual open eye 4 and barb 5.

My improvement consists in forming in each side of the needle a thread-receiving groove both of which extend from the eye toward the end of the needle in an inclined direction and terminate on the back side of the needle or the side which is opposite from that in which the eye is formed. The angle of inclination of each groove is not essential to my invention provided it is inclined sufficiently to extend back of the median line of the needle and to terminate on the opposite side thereof from the eye. It will be understood that there are two such thread-receiving grooves 6 and 7, one on each side of the needle, and preferably the groove 7 is made deeper than the groove 6 for reasons which will hereinafter appear, although this is not essential.

When my improved needle is in use and has been drawn backwardly from the work thereby to draw the last-formed loop through both the work and the previously-formed loop 21, the sides 10 and 11 of said last-formed loop 20 will occupy the two thread-receiving grooves 6 and 7, as seen clearly in Figs. 4 and 5 the portion of the last-formed loop which leads to the thread supply and which portion may be called the supply end of the thread occupying the deeper groove 7. The inclination of these grooves carries the sides 10 and 11 of the last-formed loop 20 back beyond the point 23 of the needle so that when the work is advanced and the needle begins its penetrative movement, as shown in Fig. 5, the point of the needle will not miss said last-formed loop and thus permit said loop to be dropped, as might occur if these grooves extended substantially parallel with the median line of the needle as is the common construction.

The needle will preferably be set with the eye at an angle to the line of feed, as shown in Figs. 4 and 5, said needle being set so that the deeper groove 7 will be facing somewhat toward the direction from which the work is fed. Said groove 7 may be made more or less deep as desired, but if it is

made deep enough to extend beyond the axial or median line of the needle, the portion 11 of the thread will be more securely retained therein and liability of the last-formed loop being dropped will be much decreased. It will be noted that the deep groove 7 is the one which is on the side of the needle that faces somewhat toward the direction from which the work is fed, and the importance of making this groove deeper is that when the work is fed forward from the position shown in Fig. 4 to that shown in Fig. 5, the strand 11 of the loop 20 occupying the deeper groove will because of the inclination of the groove and the depth thereof of a certainty swing down behind the point of the needle as the work is fed forward and the needle begins its penetrative movement, as plainly seen in Fig. 5, thus eliminating all danger of the last-formed loop 20 being dropped from the needle. By setting the needle in this way no cast-off is required to permit the previously-formed loop to be shed from the needle, and by means of my invention all danger of dropping stitches is avoided.

In Fig. 6 I have shown a modified form of the invention wherein one or both of the thread-receiving grooves are cut so as to present a lip 18 which overlies the thread and more securely holds it in the groove.

I have shown herein two embodiments only of my invention and have not attempted to illustrate all forms which the invention might assume.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A straight sewing machine needle having an open eye and provided on each side with a thread-receiving groove both of which grooves extend from the eye toward the pointed end of the needle and around the needle so that the termination of each groove is on the back side of the needle.

2. A sewing machine needle having an open eye and provided on each side with a thread-receiving groove, both of which grooves extend from the eye toward the back side of the needle and also toward the point thereof, the groove on the side of the needle which faces toward the direction from which the work is fed being deeper than the other groove.

3. A sewing machine needle having an open eye and provided on each side with a thread-receiving groove, both of which grooves extend from the eye toward the back side of the needle and also toward the point thereof at the same inclination, the groove which is occupied by the supply end of the thread being deeper than the other groove.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH FRENCH.

Witnesses:

LOUIS C. SMITH,
MARGARET A. DUNN.