

(No Model.)

C. STICKEL.

HAND APPARATUS FOR FORMING STITCHES.

No. 296,084.

Patented Apr. 1, 1884.

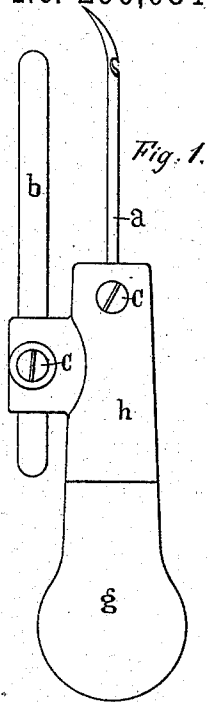


Fig. 1.

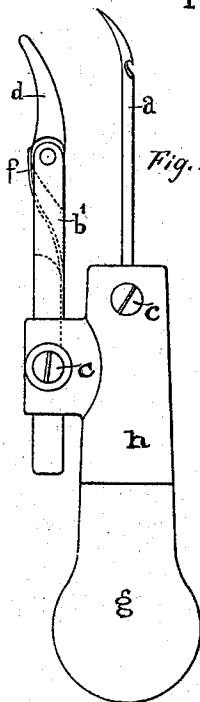


Fig. 2.

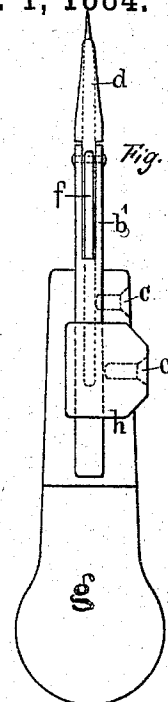


Fig. 3.

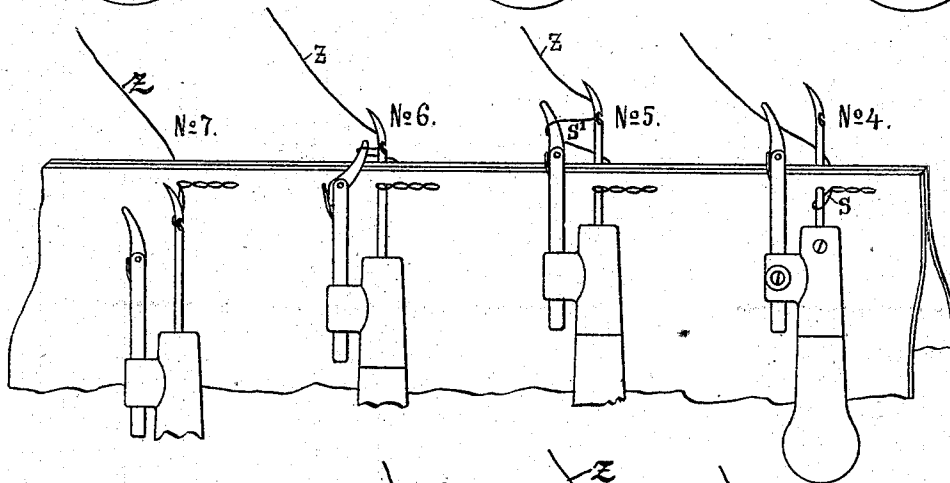


Fig. 11.

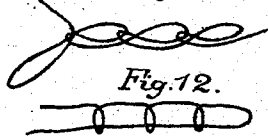
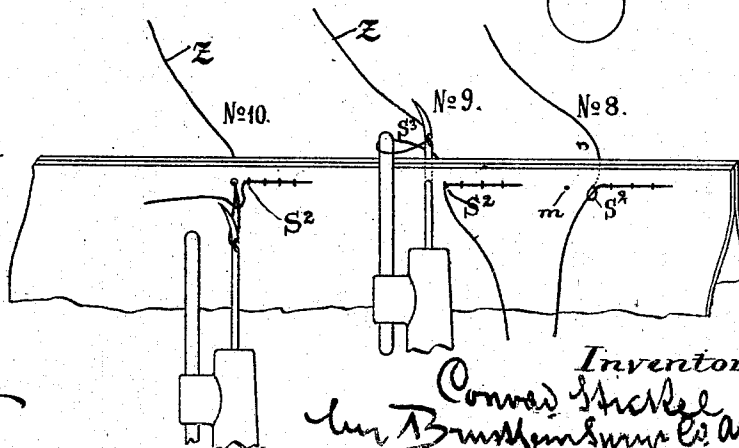


Fig. 12.



Attest:
René Geelhaar
2. Zeichnungsgehilfe

Inventor:
Conrad Stickel
per Brunschwiler & Co. Anst.

UNITED STATES PATENT OFFICE.

CONRAD STICKEL, OF DITZINGEN, WÜRTTEMBERG, ASSIGNOR TO FR. SCHUMACHER, OF AACHEN, GERMANY.

HAND APPARATUS FOR FORMING STITCHES.

SPECIFICATION forming part of Letters Patent No. 296,084, dated April 1, 1884.

Application filed December 15, 1883. (No model.) Patented in Germany February 6, 1883, No. 24,157; in Belgium September 21, 1883, No. 62,660, and in France September 21, 1883, No. 157,665.

To all whom it may concern:

Be it known that I, CONRAD STICKEL, a citizen of Germany, residing at Ditzingen, Würtemberg, Germany, have invented certain new and useful improvements in apparatus for producing chain-stitches and double shuttle-stitches in shoe and other leather goods by hand, of which the following is a specification.

My invention relates to apparatus for making tent and chain stitches in leather goods; and it consists in a hand-tool composed of a hooked needle or awl, which is held rigidly fast within a suitable socket and handle by means of a set-screw, a loop-holder set parallel to the hooked needle being provided on a projecting part of the socket, said loop-holder held rigidly fast within said projecting part by means of a set-screw, and said loop-holder being either a plain cylindrical rod or carrying at its end a fulcrumed finger, which is kept in its position of rest by means of a flat spring, and is free to swing toward the hooked needle at a certain angle whenever the tension of the loop of thread is strong enough to overcome the pressure of the spring. The purpose of this hand-tool is to facilitate the work of making chain and tent stitches, the loop-holder, with or without fulcrumed finger, serving as holder or guide for forming the loops of thread and for keeping the stitches well tightened up and facilitating the process. The hand-tool with plain loop-holder is rather suitable for tent-stitches; but the tool with loop-holder and fulcrumed finger is rather suitable for chain-stitches. For making tent-stitches in the moment when one end of the thread is on the bottom face of the leather and the other end on the top face, the needle is stuck into a new hole in order to make a new stitch, the thread on the bottom face is slung around the loop-holder by hand, so as to form a loop, and the thread is caught by the hook of the needle and the needle is drawn back, so as to draw the loop of thread which, by the retreating movement of the tool, was caused to slip off the loop-holder through the hole made by the needle. Thus the loop is brought to the top face of the leather and the end of

thread which was on this side is drawn through the loop by hand and the loop tightened by pulling the end of thread on the bottom face of the leather, whereupon the needle is thrust into the leather for making a new stitch, and the whole process is repeated. For making chain-stitches the hand-tool may be modified by applying a fulcrumed finger to the end of the loop-holder, said finger in this case modifying a little the rough tension put on the stitches when forming the loop. This loop is made in a similar way as for tent-stitches by slinging the thread around the finger of the loop-holder and catching it with the hooked needle, whereupon the needle is drawn back through the hole, while, owing to the tension of the loop of thread, the finger is swung toward the needle until it has reached such an inclination as to cause the thread to slip off the said finger, after which the loop is drawn through the hole and through the loop of the previous stitch, and the needle is immediately thrust into the leather again for making a new stitch. Thus the so-called "chain-stitch" is produced, and the process may be repeated. For these stitches, however, the tool as given for tent-stitches may also be used, only the tool with the movable finger will produce a looser work, as is rather preferable for chain-stitches than for tent-stitches.

In the accompanying drawings, Figure 1 represents a view of the hand-tool used for tent-stitches. Fig. 2 gives a view of the modified tool for chain-stitches, and Fig. 3 represents a side view of the tool as illustrated in Fig. 2. Figs. 4, 5, 6, and 7 represent different stages of the work for making chain-stitches; Fig. 8, 9, and 10, different stages of the work for making tent-stitches. Fig. 11 illustrates what is understood by the term "chain-stitches," and Fig. 12 what is termed "tent-stitches."

In Fig. 1, *g* represents the handle of my hand-tool as needed for tent-stitches. *h* represents the socket with projecting part. *c c* represent the respective set-screws. *b* marks the plain cylindrical loop-holder, and *a* the hooked needle or awl.

In Fig. 2, *g* is the handle, *h* the socket, and

c c the respective set-screws. *b'* is the loop-holder with the flat spring *f* and the fulcrumed finger *d*. *a* marks the hooked awl or needle.

For Fig. 3 similar letters of reference mark similar parts of Fig. 2.

The process of making chain-stitches, as illustrated in Figs. 4, 5, 6, and 7, is now as follows: We describe the process after a few stitches have been made. The needle being thrust into the leather, and engaging the loop *S* on the top face of the leather of the previous stitch as given in Fig. 4, the thread is now slung around the finger and caught by the hook of the needle or awl, forming thereby the loop *S'*. The thread is kept taut at *Z*, (see Fig. 5,) and thereby the loop of the previous stitch on the top face of the leather is tightened. Then the tool is drawn back, the tension of the loop thereby increasing and swinging the movable finger inward toward the hook. The tension on the previous stitch will be constantly kept on (see Fig. 6) until the needle, with loop-holder and finger, has been drawn backward far enough so as to cause the loop of thread to slip off from the finger and to be drawn through the hole, as seen in Fig. 7. When the needle is now thrust forward again for a new stitch, a position similar to that of Fig. 4 will be assumed, and the whole process just described will be repeated. Thus the stitches given in Fig. 11 will be produced. For tent-stitches the proceeding is similar, and we will describe the process after a few stitches have been made. (See Figs. 8, 9, and 10.) The thread being in the position as in Fig. 8, with one end reaching out to the bottom face of the leather, and forming a loose loop, *S*², on the top face, through which the other end of the thread, or also a second thread, has been drawn, is in the proper shape for tent-stitches as

given in Fig. 12. The needle or awl is now thrust in at *m*, and the bottom thread is slung around the loop-holder and caught by the hook of the needle, thus forming a loop, *S*³, (see Fig. 9,) while the thread is kept taut at *Z*, and the loop *S*² will be tightened. Then the tool is drawn back, the loop *S*³ will slip off the loop-holder, the hook of the needle will draw said loop on the top face of the leather, and the thread end at the top face of the leather can be drawn through said loop, (see Fig. 10,) whereupon the needle is unhooked from the loop and the stitch is tightened by hand, after which the position as in Fig. 8 will be assumed again. The formation of tent-stitches may now be repeated as just described.

Having now fully described my invention, what I claim as new, and want to secure by Letters Patent, is—

1. A hand stitching device consisting of a hooked needle-awl secured to a handle provided with means forming a loop-holder, substantially as described.

2. The combination, substantially as shown and described, of the handle *g*, socket *h*, provided with the projecting parts, set-screws *c c*, cylindrical loop-holder *b'*, and the hooked needle-awl *a*, the whole forming a complete hand stitching device.

3. The combination consisting of the hooked needle-awl *a*, socket *h*, loop-holder *b'*, finger *d*, fulcrumed on the guide-spring *f*, and handle *g*, substantially as shown and described.

In testimony I have hereunto set my hand, in the presence of two subscribing witnesses, this 3d day of November, 1883.

CONRAD STICKEL.

Witnesses:

EDUARD RETTICH,
C. L. JUL. BAUMANN.