

C. H. WILLCOX.
 Machine for Sewing Covered Wire to Hats, &c.
 No. 230,212. Patented July 20, 1880.

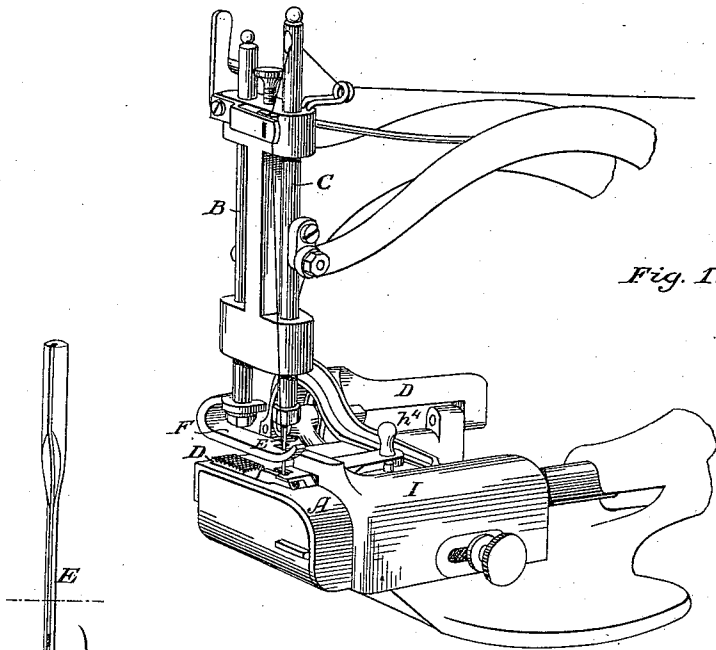


Fig. 1.

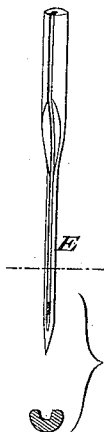


Fig. 4.

Fig. 2.

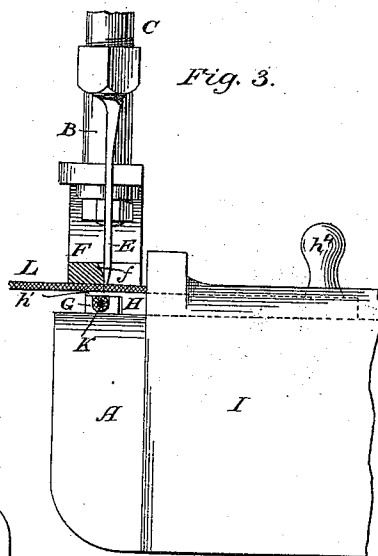
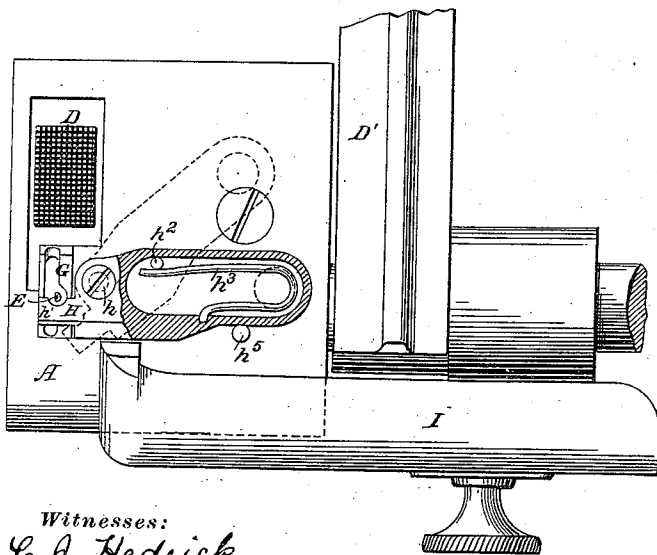


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES H. WILLCOX, OF NEW YORK, N. Y.

MACHINE FOR SEWING COVERED WIRE TO HATS, &c.

SPECIFICATION forming part of Letters Patent No. 230,212, dated July 20, 1880.

Application filed October 9, 1879.

To all whom it may concern:

Be it known that I, CHARLES H. WILLCOX, of New York city, United States, have invented a new and useful Improvement in Machines for Sewing Covered Wire to Hats, &c., which improvement is fully set forth in the following specification.

This invention relates to a machine for sewing covered wire upon hats and other articles. The wire and hat-brim being fed under the needle, the latter passes through the covering at one side of the wire and stitches it to the brim.

In order to attach the wire securely it is desirable that the stitches should be made uniformly in the covering, close to the wire. With machines using the ordinary needle having the point in the central line or axis the stitching cannot be made as close to the wire as desirable, since the bevel near the point would, if the latter passed close to the wire, force it sidewise, tearing the covering of the wire, or breaking or bending the needle.

In this invention a needle having the point in the plane of one of its sides is employed. It is combined with a guide for the wire, and also with a needle-guide arranged with relation thereto so that the point of the needle is guided close to the wire, the wire, when placed in the wire-guide and the needle-guide, being both adjacent to that side of the needle in the plane of which the point is situated.

The needle-guide is attached to or forms part of the presser-foot, so as effectually to guide the needle until the point has begun to penetrate the material sewed, and also while it is passing through the same, when the bevel, being practically on one side, is apt to bend the point out of line.

The needle which is by preference employed, being adapted to sewing-machines of the most usual construction, is one having the side in the plane of which the point is situated grooved upward from the eye, which latter has its axis perpendicular to the aforesaid plane and the shank cut away at the bottom.

This invention also comprises an improved wire-guide, consisting of a grooved support pierced with a needle-hole and provided with a locking-catch having a spring for closing it and stops to limit its movement.

The following description will enable those skilled in the art to which it appertains to make and use my invention, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a perspective view of a portion of a sewing-machine embodying my invention; Fig. 2, a plan view, partly in section, on an enlarged scale; Fig. 3, a front elevation, partly in section, and Fig. 4, enlarged views of the needle in elevation and cross-section.

The same letters refer to like parts where they occur.

A is a cloth or throat plate, B the presser-bar, C the needle-bar, and D the feed-surface, of a sewing-machine.

The parts represented belong to what is known as a "Willcox & Gibbs" sewing-machine, with certain improvements, patented August 12, 1879, Letters Patent No. 218,413.

I have only shown part of the machine, as this will suffice to show how my invention is applied. The latter is not limited to Willcox & Gibbs machines, but may be used with other sewing-machines of ordinary or suitable construction.

E is the needle; F, the presser-foot; G, the wire-guide, with locking-latch H; I, the work-gage; K, Fig. 3, the wire, and L a part of a hat-brim or other article to which the wire is to be sewed.

The throat-plate A is curved, as shown, to accommodate the curvature of the hat or other article.

The feed mechanism is fully described in the patent referred to.

The feed-surface is carried by an arm which extends under the throat-plate, and permits the latter to be made smaller than would otherwise be practicable.

The needle E is formed straight on one side, so that the point is in the same plane as the side, (see Fig. 3,) and it is provided with a groove or channel for the thread to lie in. (See Fig. 4.) The lower part of the shank of the needle is cut away on this side, Figs. 3 and 4. On the other side the needle is rounded and beveled at the point in the usual way.

No particular description of the manner of making these needles is deemed necessary, as a manufacturer of sewing-machine needles as

now made will readily understand how to proceed.

The needle is secured to the needle-bar in any ordinary or suitable way.

5 The presser-foot F is cut away at the toe, Figs. 1 and 3, in order to permit the adjustment at the hat-gage near the needle. At a point opposite the path of the needle the side of the foot is beveled, as shown at *f*, Fig. 3.

10 This forms the needle-guide, which, when the presser-foot is let down upon the work, is in close proximity and above the latter. The bevel *f* avoids all danger of the needle-point's striking the foot and bending or breaking.

15 The wire-guide G consists of a grooved support fixed in any desired way, as by welding to the cloth or throat plate A.

The position of the wire-guide with reference to the path of the needle is shown in Fig. 3.

20 It is placed so that the point of the needle shall just pass by the side of the metal core of the covered wire when placed therein. It is pierced with a needle-hole corresponding to that in the cloth-plate of machines for the

25 passage of the needle and drawing up of the thread.

The latch H is hinged or swiveled at *h* to the cloth-plate.

30 The locking of the wire in its guide is effected by the thin extension *h'*, which projects over the groove in which it rests. At *h²* is a stationary pin, against which one end of a spring, *h³*, bears, the said spring being contained in a hollow in the latch H, its other end bearing against the side thereof, as shown

35 in Fig. 2.

The latch is turned by means of the knob *h⁴*, and when released it is returned by the spring, which holds it normally against the

40 pin *h²*.

The hat-gage I is conformed in shape to the throat-plate A, and is secured in position by a set-screw. It may be adjusted toward the needle almost to the point of touching, if desired.

45 The operation will be readily understood in connection with the foregoing description. The latch H is turned to expose the groove in the wire-guide G, in which the covered wire

50 K is placed, when the latch is allowed to return to its normal position. The gage I is adjusted so that the wire K is at the desired distance from the edge. The hat or other article is placed with its edge against the gage and

55 the presser-foot is dropped. The machine being set in motion the needle descends, is guided by the beveled side *f* of the presser-foot and the portion below the bevel, and passes through the cloth covering of the wire close to the metallic core. On account of the position of the

60 point of the needle in the line of its side, and the position of the needle-guide as a part of the presser-foot, the point is guided until it begins to penetrate the cloth. This guide also,

65 by its position just above the work, overcomes any tendency to side movement which the needle may have because of the position of the

bevel. The loop is taken below in the ordinary way, and as the needle continues to reciprocate the stitches are made as usual, the loops being drawn up and the thread kept taut by the tension. The feed acts against the wire and not against the hat-brim only. The loop is taken by the hook upon the side of the needle opposite to that in the plane of which the point of the needle is placed.

70 While the needle-bar is in its lowest position and the needle is in the work it is often desirable to lift the presser-foot to adjust the work or for other reason. With the ordinary form of presser-foot no difficulty is experienced. With the presser-foot against which the side of the needle is in contact, as it is when the needle-guide forms a part of the

80 presser-foot, this movement would be prevented by the shank of the needle, and the lower part of the shank is therefore cut away, as already explained.

85 It is evident that part of my invention may be used without the others. For example, the wire guide and gage could be used on a machine with a straight throat-plate, the shape of the gage being altered accordingly. The needle can be used with a guide for the wire attached to the presser-foot, or made of any ordinary or suitable form, and so on.

90 Modifications may be made in the details without departing from the spirit of my invention.

95 Having thus fully described my said invention and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. A sewing-machine needle having the point in the plane of one of its sides and having the lower portion of the shank cut away on that side, as shown and set forth.

2. The combination, with a needle having the point in the plane of the long grooved side, of a wire-guide arranged with its axis at a slight distance from the path of the needle and upon the side adjacent to that in the plane of which the point is situated, substantially as described.

3. The combination of a needle having its point in a plane forming one side thereof, a needle-guide in close proximity to and above the work, and a wire-guide, the said needle-guide and wire-guide being both located on that side of the needle in the plane of which the point of the needle is situated, and operating substantially as described.

4. The combination, with a needle having the point in the plane of one of its sides and the presser bar and foot of a sewing-machine, of a needle-guide, such as indicated, attached to or forming part of the presser-foot and arranged opposite the side of the needle in the plane of which the point is situated, whereby the point of the needle is guided until it begins to pierce the work, substantially as described.

5. The herein-described wire-guide, being a grooved support provided with a locking-latch

having a spring for closing it and stops to limit its movement, and pierced with a needle-hole, substantially as described.

6. The combination, with the needle and
5 feed of a sewing-machine and a wire-guide having its axis in the plane of the feed-movement, or of a plane parallel thereto, of the presser-foot beveled at a point opposite the path of the needle and arranged to serve as
10 a guide to the latter, substantially as described.

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

CHAS. H. WILLCOX.

Witnesses:

C. F. ALVORD,
R. S. HAYWARD.