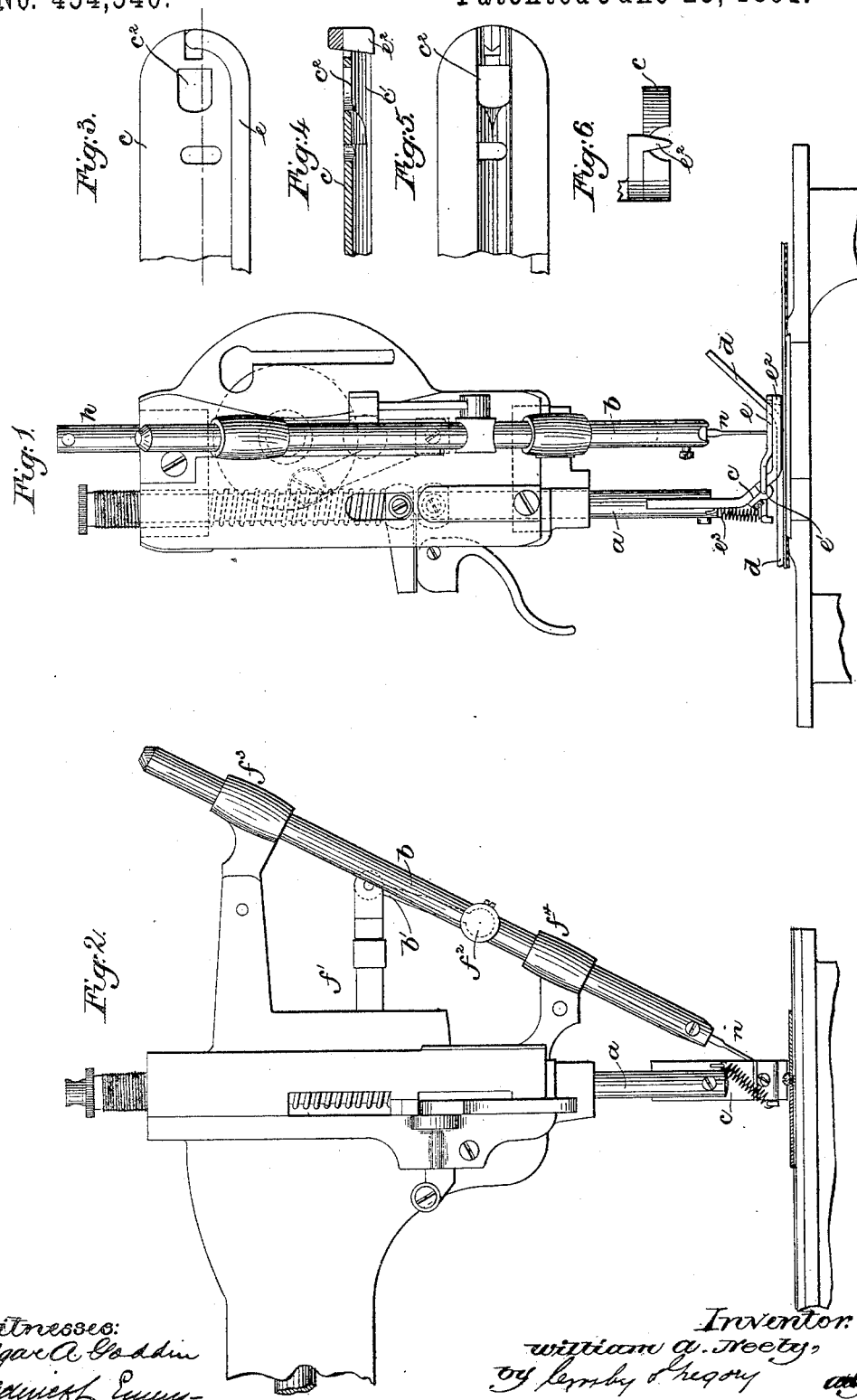


(No Model.)

W. A. NEELY.
SEWING MACHINE.

No. 454,540.

Patented June 23, 1891.



UNITED STATES PATENT OFFICE.

WILLIAM A. NEELY, OF LYNN, MASSACHUSETTS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 454,540, dated June 23, 1891.

Application filed August 4, 1890. Serial No. 360,860. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. NEELY, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Another application filed by me on the 26th day of April, 1890, Serial No. 349,609, shows a stay-strip consisting of a strip having a longitudinal groove at its outer side to receive the stitches which are passed through the strip and into the material to which it is to be attached. The stitches pass through the strip and the material diagonally. The stay-strip is made of thick stock and preferably has a semicircular outer face.

This invention has for its object to provide a sewing-machine by which this stay-strip may be sewed onto the material or to cover a seam in a boot or shoe.

In accordance with this invention the needle of the sewing-machine is carried by a needle-bar placed diagonally to the work-support, but in a vertical plane parallel to the vertical plane passing through the longitudinal axis of the presser-bar in a direction at right angles to the line of feed, to thereby enable the needle to enter and pass diagonally through the strip and the material to which it is to be attached. The presser-foot has a groove on its under side for the passage and guidance of the stay-strip, and said presser-foot has also a hole through it for the delivery of the stay strip, said hole being located adjacent to and directly in front of the needle-hole. A crease-opener attached to the presser-foot is adapted to enter and open the seam creases as well as serving as a guide.

Figure 1 shows an end view of a portion of a sewing-machine provided with a diagonally-arranged needle-bar and presser-foot embodying this invention; Fig. 2, a rear side view of the parts shown in Fig. 1; Figs. 3, 4, 5, and 6, enlarged details, to be referred to, of the presser-foot and its attached parts.

The vertical presser-bar *a*, and means for moving it, are of usual or suitable construction.

As herein shown, I have left in the machine

the vertically-reciprocating bar *h*, to which the needle is usually attached, and I denominate said bar *h* as the "carrier-bar." To this bar at one side I have attached an arm *f'*, which by link *b'* is jointed to a lug or collar *f*², attached to the needle-bar *b*, the latter being placed diagonally with relation to the usual cloth-plate of the machine, but in a vertical plane parallel to the vertical plane passing through the longitudinal axis of the presser-bar in a direction at right angles to the line of feed, whereby the needle is adapted to be reciprocated in bearings *f*³ *f*⁴, located out of vertical line. The needle *n* is attached to the lower end of this diagonally-reciprocating needle-bar.

The means shown to guide and move the needle-bar and needle diagonally, as described, work well and are very simple.

The presser-foot *c* is grooved longitudinally at its under side, as at *c'*, from end to end, and adjacent to the needle-hole has a hole, as *c*², through it for the passage of the stay-strip *d*, as represented in Fig. 1, the stay-strip being delivered on the material just in front of the needle. The presser-foot is provided with a seam-guide *e*, pivotally connected thereto at *e'*, it having at one end a blade *e*², which passes down through an opening or passage at the forward end of the presser-foot and enters the seam-crease in the material to which the stay-strip *d* is to be attached, the said guide guiding the material, while the presser-foot acts to guide the stay, being stitched to the material as a cover to the seam already made therein. This guide is acted upon by a spring *e*³, which serves to keep the guide normally down on the material.

The presser-foot has in its groove at a point between the stay-strip hole *c*² and the needle-hole a groove-opener, which enters the groove in the strip just in advance of the point where the needle enters the said groove to stitch the stay to the material, said opener opening the groove for the entrance of the needle.

In operation the material to which the stay-strip *d* is to be attached, is fed beneath the presser-foot, the guide following in the seam-crease, and the stay-strip is fed through the hole *c*² down onto the material and beneath the presser-foot, where the strip is entered by the

needle. The strip is attached to both pieces of material, but by different lines of stitching, one line being made through the stay and the material at one side of the seam uniting the material, and thereafter the material with the stay-strip attached along one side of the seam in the material is reversed or turned end for end and again fed forward beneath the presser-foot, the stay-strip at such time following in the groove *c'* formed at the under side of the presser-foot, at which time the seam-guide is lifted or held up on its front end in any suitable manner. The spring connected to the seam-guide acts to press it down onto the work, and also enables the guide to yield to compensate for irregularities in the material.

The mechanism which co-operates with the needle to form the stitch may be of any usual kind—such, for instance, as used in the Wheeler & Wilson, or the the Singer, or Willcox & Gibbs, or other usual two or one thread machines.

I claim—

1. The work-support, the needle-bar arranged diagonally with relation to the work-support and in a vertical plane parallel with

the vertical plane passing through the longitudinal axis of the presser-bar in a direction at right angles to the line of feed, the needle attached to the said needle-bar, and a longitudinally-grooved presser-foot having a strip-receiving opening, combined with a grooved opening device for the said strip and with the seam-guide, to operate substantially as described.

2. The presser-foot having a strip-receiving opening, and the vertically-movable presser-bar, to which it is attached, combined with the work-support, the vertically-reciprocating bar *h*, arranged above the work-support, its attached arm *f'*, the bearings *f³ f⁴*, link *b'*, and needle-bar *b*, arranged diagonally with relation to the work-support, to which the said link is jointed, and the needle, the combination being and operating substantially as shown and described.

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

WILLIAM A. NEELY.

Witnesses:

GEO. W. GREGORY,
EMMA J. BENNETT.