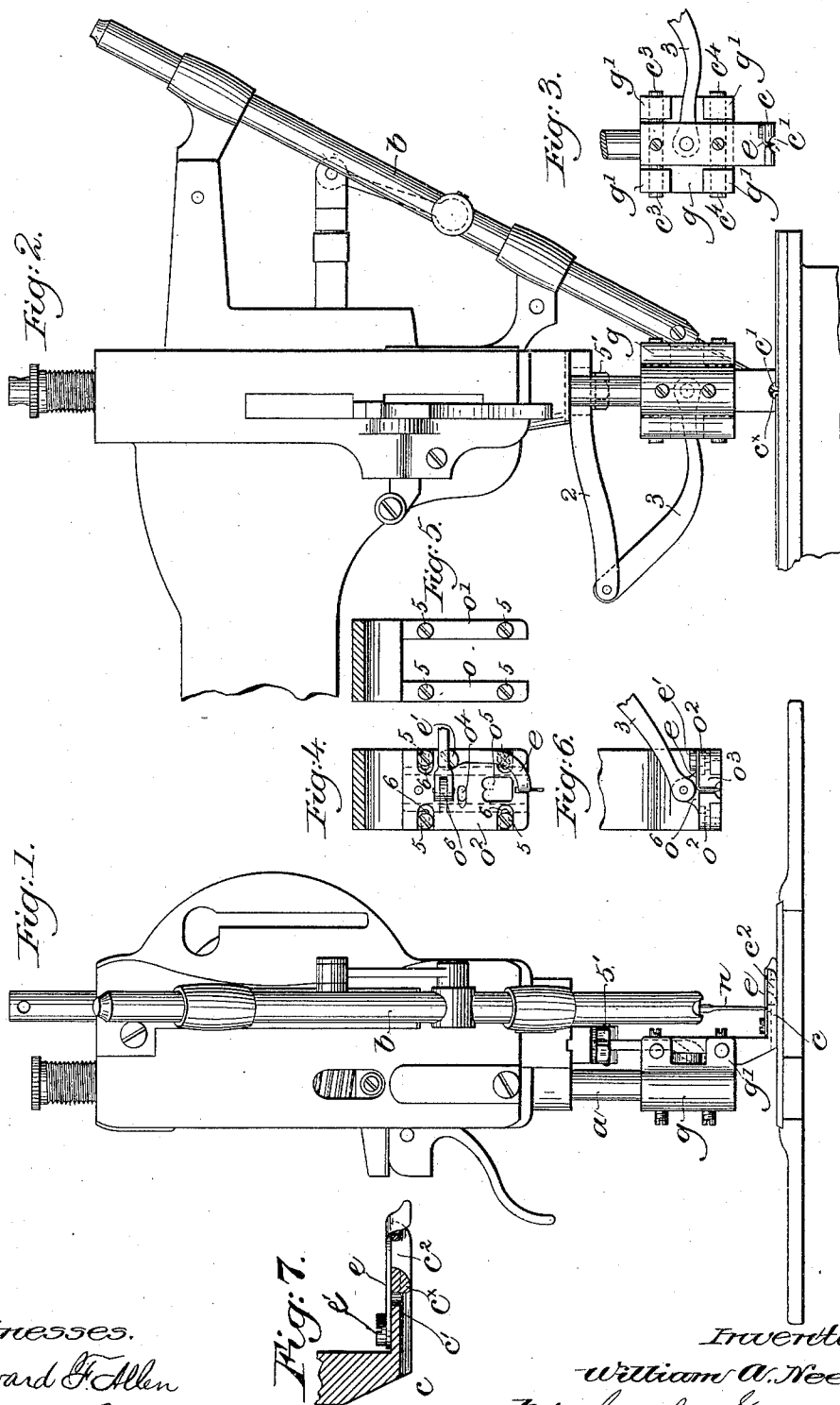


(No Model.)

W. A. NEELY.
SEWING MACHINE.

No. 463,199.

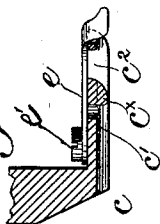
Patented Nov. 17, 1891.



Witnesses.

Edward F. Allen
Fred S. Greenleaf.

Fig. 7.



Inventor.

William A. Neely.
by Lemby & Gregory, Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. NEELY, OF LYNN, MASSACHUSETTS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 463,199, dated November 17, 1891.

Application filed March 10, 1891. Serial No. 384,423. (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 and figures on the drawings representing like parts.

United States Patent No. 431,123, dated July 1, 1890, granted to me shows a stay-strip consisting of a strip of leather or equivalent material, having a longitudinal groove at its outer side to receive the stitches which pass through the strip and into the material to which it is attached. The stitches pass through the strip and the material diagonally. A sewing-machine specially adapted for sewing this form of stay-strip onto the material that it may cover a seam forms the subject-matter of the application for Letters Patent filed August 4, 1890, Serial No. 360,860.

The sewing-machine shown and described in this application contains a needle-bar placed diagonally to the work-support, but in a vertical plane parallel with the vertical plane in which the presser-bar stands 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 shown in said application has a groove in its under side for the passage and guidance of the stay-strip, and has also a hole through it adjacent to and directly in front of the needle hole for the delivery of the said strip. A guide is also attached to the presser-foot, which is adapted to enter and follow along the seam-crease over which the stay-strip is to be sewed. The groove in the stay-strip is very narrow, sometimes merely a slit, and different pieces of material to which the stay-strips are attached vary in thickness, and I find that the diagonally-arranged needle-bar, when adjusted so that its needle will properly enter the narrow groove and pass through the stay-strip placed on material of a certain thickness, will not properly enter the groove of a stay-strip when placed on material of a different thickness unless again adjusted, because the strip has been raised or lowered so that its groove has been moved out of the path of the movement of the needle. Much labor

is therefore required to adjust the parts for different thicknesses of material.

This invention has for its object to improve the construction of sewing-machines such as shown in said application, whereby proper adjustment may be easily made for different thicknesses of material, and it comprehends the employment of a laterally-movable stay-strip carrier or guide, in combination with suitable stitch-forming and feeding mechanism. The stay-strip carrier for simplicity is herein shown as embodied in the presser-foot, as in said application, although it may be made as a separate piece. As the stay-strip carrier is moved laterally, the stay will be moved so that its groove will always lie in the path of movement of the needle. Lateral movement is preferably given to the stay-strip carrier automatically by the material.

Figure 1 shows an end view of a portion of a sewing-machine provided with a diagonally-arranged needle-bar and a lateral movable stay-strip carrier, embodying this invention; Fig. 2, a rear side view of the parts shown in Fig. 1; Fig. 3, a detail to be referred to; Figs. 4, 5, and 6, details of a modification to be referred to, and Fig. 7 an enlarged sectional detail of the presser-foot and stay-strip carrier shown in Fig. 1.

The vertical presser-bar *a* and means for moving it are of usual or suitable construction. The needle-bar *b* is arranged diagonally with relation to the usual cloth or work support, but in a vertical plane parallel to that of the presser-bar, and also at right angles to the line of feed, whereby the needle is adapted to be reciprocated in suitable bearings provided for it. The needle *n* is attached to the lower end of the diagonally-arranged reciprocating needle-bar. The presser-foot *c* is shown in Figs. 1 to 3 as constructed and arranged to subserve the function of a presser-foot and also of a stay-strip carrier, it being grooved longitudinally on its under side, as at *c'*, from end to end, and adjacent the needle-hole has a hole, as *c''*, through it (see Fig. 1) for the passage of the stay-strip, and in said groove between the hole *c''* and needle-hole a groove-opening device, as *c'''*, is provided, (herein shown as a fin,) the said strip being delivered to the material just

in front of the needle. The presser-foot is provided with a guide e , connected thereto at e' , it having at one end a blade e^2 , which passes down through the 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. A block or frame g , secured to the lower end of the presser-bar a , has four ears g' , formed upon one side of it, which serve as bearings for parallel bars or studs $c^3 c^4$, attached to the upper portion of the combined presser-foot and stay-strip carrier, and extend in opposite direction, such bearings thereby permitting lateral movement of said presser-foot and stay-strip carrier with relation to the needle. To accomplish such lateral movement by means depending upon the thickness of the material to which the said strip is to be attached, I have secured an arm 2 to the frame-work of the machine and at its outer end loosely pivoted an arm 3, which is connected with the presser-foot at a point between the parallel bars $c^3 c^4$. The supporting-block g being movable only vertically and the arm 3, which is loosely connected with the combined presser-foot and stay-strip carrier, moving in the arc of a circle about its pivot, the said combined presser-foot and stay-strip carrier will be moved laterally in one or the other direction as the presser-foot is raised and lowered. The arm 2 will be connected adjustably with the framework by means of a set-screw $5'$ passing through a slot in said arm and entering a hole in the frame-work.

By means of the construction above described it will be seen that the stay-strip carrier may be moved laterally, depending upon the thickness of the material to which the said stay-strip carrier is being attached, that the groove or slit in said stay-strip carrier may be properly presented to the needle.

Referring to Figs. 4 to 6, inclusive, the presser-foot and stay-carrier are made independent.

The presser-foot (see Fig. 5) is cut away or formed to present two fingers $o o'$, upon which are placed headed studs $5 5$, and the stay-carrier consists of a plate o^2 of substantially the same width as the presser-foot and having recesses $6 6$ at each side, which receive the headed studs $5 5$, said recesses being deep enough to permit the plate to be freely moved laterally on the presser-foot, the studs serving as guides. The plate o^2 has on its underside a longitudinal rib or projection o^3 , which enters the space between the fingers $o o'$, as shown in Fig. 6, said rib having on its under side a groove corresponding with and subserving the same purpose as the groove e' , and a guide, as e , is provided. The plate o^2 also has a needle-hole o^4 and a hole o^5 for the stay-strip. An ear o^6 is formed on the upper side of the plate o^2 , to which the arm 3 may be connected.

It will be seen that as the presser-foot is raised and lowered the stay-strip carrier will be moved laterally and that the presser-foot has only a vertical movement.

I claim—

1. In a sewing-machine, a work-support, a diagonally-arranged needle-bar, means to actuate it, and the needle, combined with a laterally-movable stay-strip carrier and a presser-foot, substantially as described.

2. In a sewing-machine, a work-support, a diagonally-arranged needle-bar, means to actuate it, and the needle, combined with a presser-foot and a stay-strip carrier moved vertically by it and means, as the arm 3, for moving said stay-strip carrier laterally as it is moved vertically, substantially as described.

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

WILLIAM A. NEELY.

Witnesses:

BERNICE J. NOYES,
EDWARD F. ALLEN.