W. D. HEYER.

SEWING MACHINE.

No. 40,622. Patented Nov. 17, 1863.

Fig. 2.

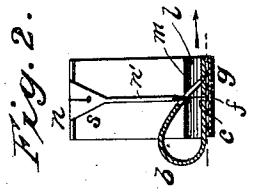


Fig. 4.

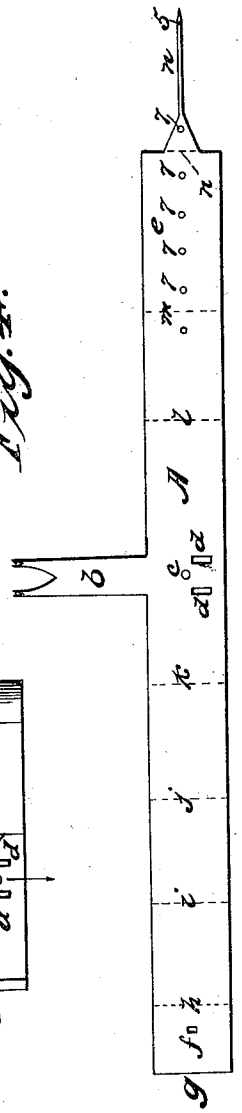


Fig. 1.

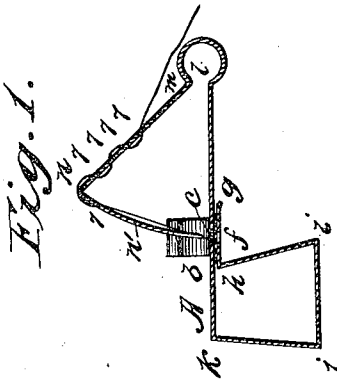
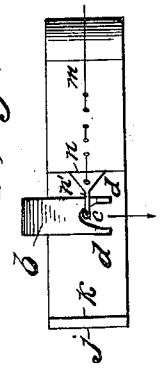


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

W. D. HEYER, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **40,622**, dated November 17, 1863.

To all whom it may concern:

Be it known that I, W. D. HEYER, of the city of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and Improved Sewing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of the machine, full size, taken at right angles to the line of sewing. Fig. 2 is a vertical section of the same, taken directly in the line of sewing. Fig. 3 is a top view of the same. Fig. 4 represents a plan of a single piece of steel or other metal plate, of which the entire machine is composed.

Similar letters and numbers of reference indicate corresponding parts in the several figures.

This invention consists in a novel and very simple arrangement of the parts of a sewing-machine for making a chain-stitch with a single thread, whereby the whole are enabled to be made entirely of one piece of metal.

It also consists in the manufacture of the cloth-holding device, the feeding device, the needle-bar, and the needle, also, if desired, of a single piece of steel or other metal, or of two or more pieces united in such manner as to be equivalent to a single piece.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, Fig. 4, represents a long, narrow, flat piece of steel-plate, having one end cut out and finished by grinding or otherwise, and perforated at 5 to form the needle *n'*, and having projecting from one side of it, about midway between the head of the needle and the other end, a tongue, *b*, which is forked and sharp pointed at its extremity. Opposite the center of this tongue *b* there is in the main portion of the plate a circular hole, *c*, for the passage of the needle through it, and at short equal distances from this hole there are two straight slots, *d d*, for the entrance of the two points of the feeder, which is formed of the tongue *b*, as will be presently described. Near the end of the plate farthest from the needle, there is another hole, *f*, which is also for the passage of the needle; and in the portion of the plate next the needle, which constitutes the needle-arm *e*, there are several holes, 7 7, through which the thread is rove to give it the necessary tension. To form this piece into a sewing-machine it is bent in the lines *h i j k l m n* to the form shown in Fig. 2. The bending in the lines *h i j k* brings the terminal portion *g h* close under the portion *k l*, with the hole *f* opposite to the hole *c*, and the said portion *g h* is thus made to serve as the clamping device, between which and the portion *k l* the cloth is held to be sewed. The bending in the lines *l*, *m*, and *n* and the curvature of the portion *l m* forms the portion *m n* into the needle-bar, and the portion *l m* into a spring connecting the needle-bar with the portion *k l*, the normal condition of such spring being such as to keep the needle-bar elevated sufficiently to keep the point of the needle at a short distance above the portion *k l*. The arm *b* is also bent in the form shown in Fig. 2, so that its points will enter the slots *d d* and penetrate the cloth, which is held between the portion *k l* and the clamping device *g h*. The machine is now complete.

To prepare the machine for sewing, the thread is taken from a suitably-placed spool and rove through a greater or less number of the holes 7 7, according to the degree of tension required, and afterward passed through the eye of the needle *n*. The cloth is then placed between *k l* and *h g*, which combine to form the cloth-holding device, and the machine is set in operation by taking hold of it with the thumb and finger at a short distance in front of *l m*, and alternately pressing down the needle-arm and allowing it to rise. As the needle-bar is depressed, the inclined edge S, Fig. 2, comes into contact with the feeder *b*, and pushes the latter back over the cloth, and, as the needle rises from the cloth, the elasticity of the feeder causes it to move forward in the direction of the arrow shown in Figs. 2 and 3, and move forward the cloth. The needle carries the thread double through the cloth, and, as it rises, leaves it protruding through the under side thereof in the form of a loop, which, by being drawn forward, with the cloth between the latter and the clamping device *h g*, as the feed movement takes place, is brought to a position for the needle to pass through it in its next descent, and in this way a chain-stitch is produced.

The needle, instead of being made of the same piece with the other part of the machine,

may be made of a separate piece, and rigidly secured to the needle-arm in any suitable manner. The other parts may be also made of two or more separate pieces; but I propose in all cases to connect them in such manner that the whole shall be equivalent to one piece.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the clamping device *h g* and feeding device *b* relatively to the needle-operating device, substantially as and for the purpose herein specified.

2. Making the cloth-holding device, the feeding device, the needle-bar, and the needle, also, if desired, of one piece of metal, or of two or more pieces united in such manner as to be equivalent to one piece, substantially as herein specified.

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Witnesses:
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