

NICHOLAS MEYERS.  
Sewing Machine.

117,797.

Fig. 1.

Patented August 8, 1871.

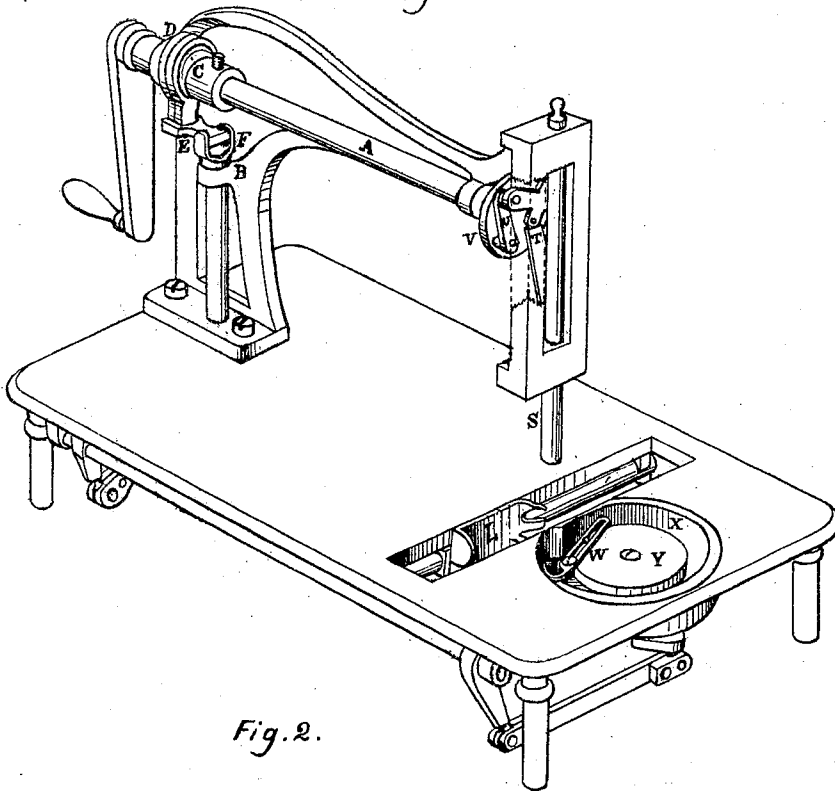
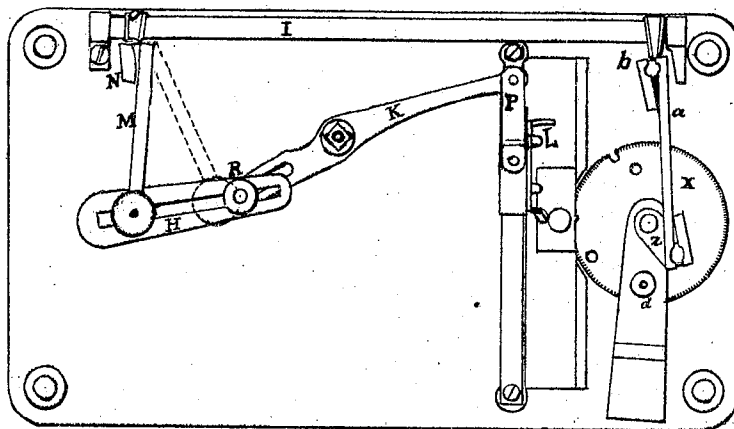


Fig. 2.



Witnesses.

H. A. Daniels  
Geo. H. Howard.

Nicholas Meyers, Inventor,  
by Chas. S. Whitman Att'y  
529 Seventh St,  
Washington D.C.

NICHOLAS MEYERS.  
Sewing Machine.

2 Sheets.  
Sheet 2.

117,797.

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Fig. 3.

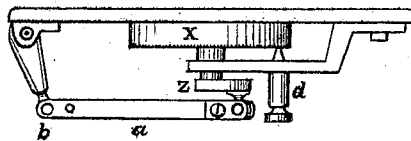


Fig. 5.

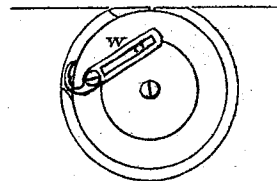
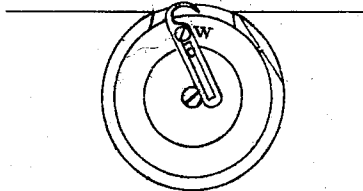


Fig. 4.



Witnesses.

H. A. Daniels,  
Geo. H. Howard.

Nicholas Meyers, Inventor,  
by C. D. Whitman Atty  
529 Seventh St.  
Washington D. C.

# UNITED STATES PATENT OFFICE.

NICHOLAS MEYERS, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 117,797, dated August 8, 1871.

*To all whom it may concern:*

Be it known that I, NICHOLAS MEYERS, of Buffalo, in the county of Erie and in the State of New York, have invented certain Improvements in Sewing-Machines; and do hereby declare that the following description, taken in connection with the accompanying drawing hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to secure by Letters Patent.

My invention relates to that class of sewing-machines which may be converted from a shuttle to a double loop-stitch machine, as may be desirable; and the nature thereof consists in certain modifications and improvements in the details of the construction of the same, hereinafter shown and described.

In the accompanying drawing which illustrates my invention and forms a part of the specification thereof, corresponding parts being illustrated by similar letters, Figure 1 is a perspective view. Fig. 2 is a plan view of the under side of the plate. Fig. 3 is an end elevation of the mechanism by which the looper is operated. Figs. 4 and 5 are detached plan views of the looper-hook and cylinder.

The construction, operation, and relative arrangement of the component parts of my invention are as follows:

The motor-shaft A has its bearings in the fixed arm of the back standard B. Upon the said motor-shaft is the spherical eccentric C, rotating within the annular strap D, to which it imparts an elliptical motion, the interior surface of the said strap being of such a spherical shape as to correspond with the said eccentric. The said strap is pivoted to a connecting-plate, E, which, in turn, is pivoted to the clevis-shaped top of the vertical shaft F. It is obvious from this arrangement of parts that the elliptical motion imparted to the strap by the rotations of the eccentric upon the motor-shaft causes the alternating rotary movement of the vertical shaft F. The said vertical shaft passes through a circular aperture in the bed-plate, and is rigidly attached to the vibrating arm H. The said vibrating arm may be coupled with facility with either the rock-shaft I, through the medium

of which motion is imparted to the mechanism operating the looper, or the vibrating lever K, which imparts a reciprocatory movement to the shuttle-carrier. In order to couple the rock-shaft I with the vibrating arm H the connecting-rod M is rotated about the ball-and-socket joint N until it occupies the position indicated in dotted lines, where it is firmly clamped by the clamp-screw O.

When it is desired to apply the power to the shuttle-working mechanism the slotted end of the vibrating lever K, which is connected to the shuttle-carrier by the strap P, is coupled with the end of the arm H by means of the clamp-screw R. Motion is imparted to the vertical needle-bar S by means of the toggle-joint T, connected, by means of the connecting-link U, with the disk V, keyed to the end of the motor-shaft, the upper limb of the said toggle-joint being pivoted to the frame in which the needle-bar moves, and the lower limb to the needle-bar. The looper-hook W is pivoted to the bottom of the cylinder X, and is operated by the alternating rotary motion of the disk Y, carrying a crank-pin working in the slotted arm of the said hook. Motion is imparted to the said disk through the medium of the crank Z and connecting-rod a, which is coupled with the rock-shaft I by means of the ball-and-socket joint b. The cylinder X may be revolved about the crank-shaft, which imparts motion to the disk Y, about which it is loosely fitted. When the looper is in use it is so rotated as to occupy the position shown in Fig. 4, and when the shuttle is used, in the position shown in Fig. 5, in order that that part of the said cylinder which is cut away may freely permit the passage of the shuttle. In either position the cylinder is held firmly in position by means of the pin d, which is actuated by a spring, and catches in slots cut in the bottom of the said cylinder. The looper-hook W, pivoted to the bottom of the cylinder and receiving motion from the disk Y, is accurately adjusted to traverse the proper curve by suitably arranging the relative position of the crank-pin upon the said disk and the point at which the said hook is pivoted. When the looper is coupled with the driving mechanism and brought into play to form the loop-stitch the location of the cylinder and hook prevents the reciprocations of the shuttle. It is necessary, therefore, when the shuttle is in use,

to form the lock-slide and the looper out of gear, to revolve the cylinder until it occupies the position indicated in Fig. 5, so that the part of the same which has been cut away forms a continuous line parallel to the path of the shuttle.

Having thus described the construction and operation of my invention, I will indicate what I claim and desire to secure by Letters Patent in the following clauses—that is to say:

1. The appliances made use of for imparting a vibratory movement to the arm H, consisting of the spherical eccentric C on shaft A, annular strap D, connecting-plate E, and shaft F, when arranged and operating together, as described.

2. The combination of the rock-shaft I, vibrating slotted arm H, connecting-rod, clamp-screws, and ball-and-socket joint, all constructed and operating together, as and for the purpose described.

3. The combination of the vibrating slotted arm H, vibrating lever K, connecting-rod P, and shuttle-carrier L, as herein set forth.

4. The arrangement and combination of the

rock-shaft I, connecting-rod *a*, crank Z, adjustable cylinder X, disk Y, and looper W, when operating together, as described.

5. The looper-hook W pivoted to the bottom of the adjustable cylinder X, in combination with the disk Y, when operating as and for the purposes described.

6. In combination with the bed-plate, the rotary cylinder X provided with the pin *d*, as herein described.

7. The shuttle-race, shuttle-carrier, and adjustable cylinder, so arranged as to form an opening in the race-face, or leave it continuous to admit of the reciprocation of the looper or shuttle.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of June, 1871.

NICHOLAS MEYERS.

Witnesses:

A. C. BRADLEY,  
H. A. DANIELS.