

A. SHATTUCK.

Improvement in Sewing Machines.

No. 124,167.

Patented Feb. 27, 1872.

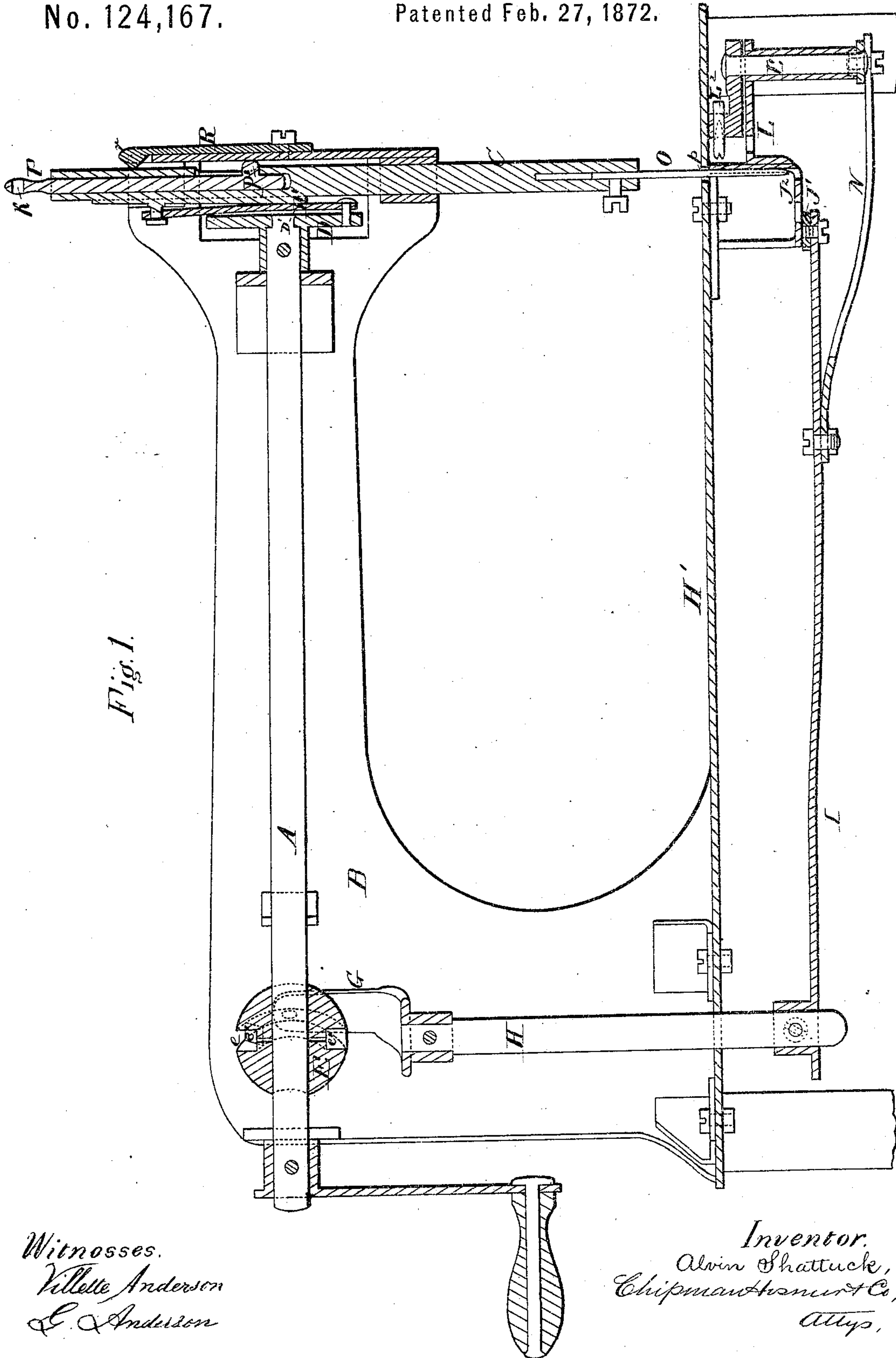


Fig. 1.

Witnesses.  
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Inventor.  
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Chipman & Co.,  
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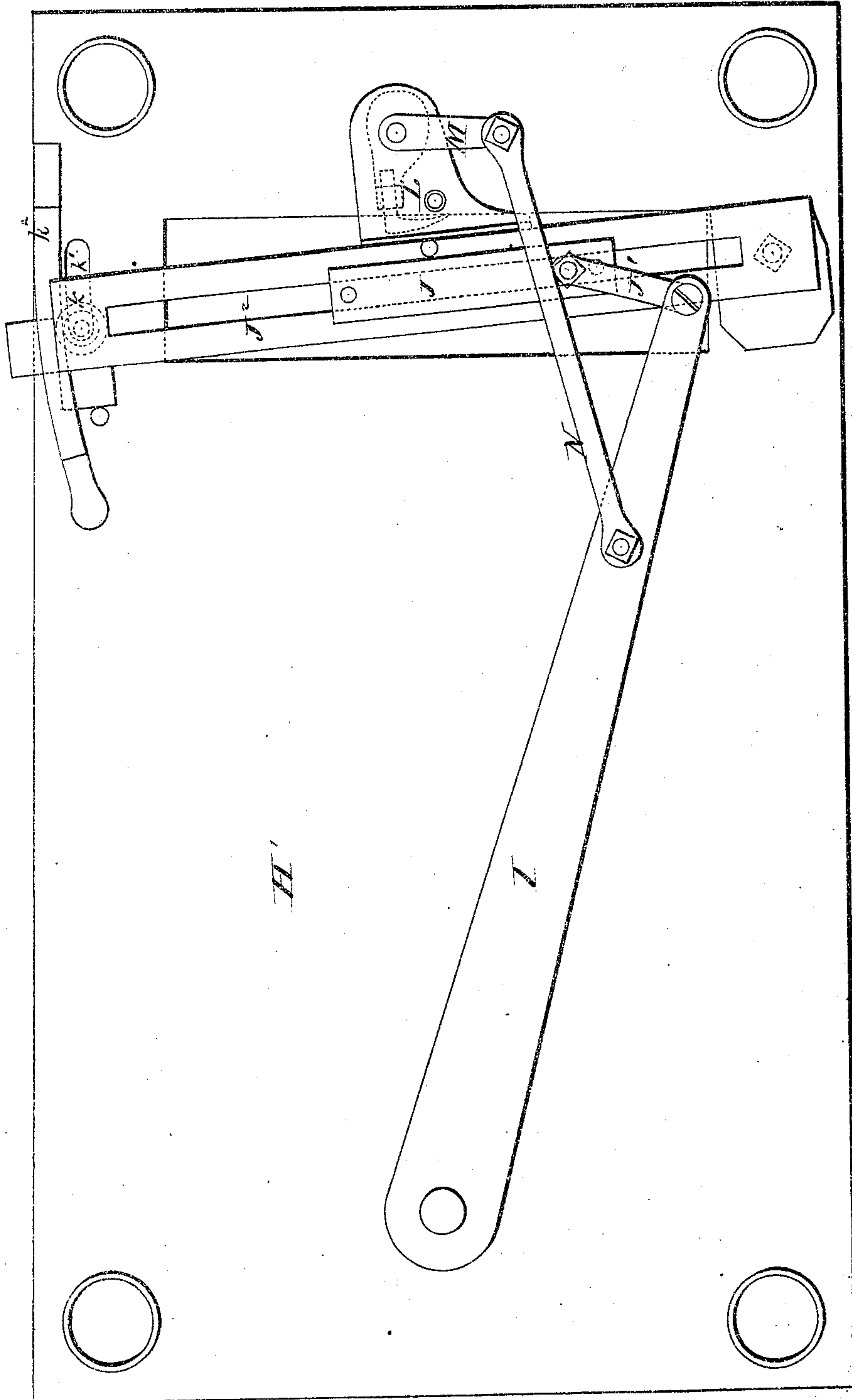


Fig. 2.

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# UNITED STATES PATENT OFFICE.

ALVIN SHATTUCK, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 124,167, dated February 27, 1872.

*To all whom it may concern:*

Be it known that I, ALVIN SHATTUCK, of Buffalo, in the county of Erie and State of New York, have invented a new and valuable Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification and to the letters and figures of reference marked thereon.

Figure 1 of drawing is a representation of a central vertical longitudinal section of my invention. Fig 2 is a bottom view of the same.

This invention has relation to sewing-machines; and the novelty consists in the construction and arrangement of the devices hereinafter described, whereby the sewing-machine is adapted for interchangeable operation, in order to produce either the lock or shuttle stitch or the double-loop stitch, as may be desired. This invention also consists in the construction and novel arrangement of mechanism for communicating from the rotary motor-shaft a reciprocating rectilinear motion to the shuttle and reciprocating rotary motion to the loop-hook, as hereinafter described. This invention furthermore consists in the construction and novel arrangement of a "take-up" device, operating in connection with the needle-bar, as and for the purpose hereinafter described.

In the accompanying drawing, A represents the rotary motor-shaft of a sewing-machine, having its bearings at the ends of the fixed arm B. The needle-bar C plays through guides at the forward end of the arm B, and receives motion from the shaft A through the medium of a crank-wheel, D, and pitman D'. To the motor-shaft, near its rearend, is secured a globe or collar, E, around which is cut an oblique groove, *e*, having parallel sides, the planes of which are in oblique relation to the axial center of the motor-shaft. In this groove are fitted segments or blocks *e'* or friction-rollers. These segments are pivoted to the arms of a yoke, G, attached to the upper end of a vertical shaft, H, having its bearing in the cloth-plate H'. The object of the grooved globe is to communicate from the rotary motion of the motor-shaft an alternating rotary motion to the shaft H. This object may obviously be accom-

plished by constructing the globe with a ridge in lieu of a groove, and substituting grooved for plane segments. The lower end of the shaft H is attached to a vibrating arm, I, which is connected to the shuttle-carrier J by means of a pivoted connecting-rod, J<sup>1</sup>. J<sup>2</sup> designates the shuttle-race, which is pivoted at one end to the cloth-plate, and may be adjusted at its other end by means of a thumb-screw, *k*, which slides through a slot, *k*<sup>1</sup>, in said cloth-plate. The adjusting-end of the shuttle-race projects through a space between the cloth-plate and a strip of metal, *k*<sup>2</sup>, which serves as a guide. From the forward side of the shuttle-race a bracket, L, projects and constitutes a bearing to a vertical shaft, L<sup>1</sup>, holding on its upper end the loop-hook L<sup>2</sup>. An arm, M, is attached to the lower end of the shaft L<sup>1</sup>. A pivoted rod, N, connects said arm to the vibrating bar I, and communicates to the shaft and loop-hook an alternating rotary motion—the motion required in the production of the loop-stitch. O designates the needle, secured to the lower end of the needle-bar C, and working through a hole, *p*, in the cloth-plate.

To adapt the machine to make a lock-stitch, the shuttle-race is adjusted forward until it reaches a position that will allow the shuttle to catch the thread-loop from the needle, after which the forming of the stitches proceeds according to the usual method. During this operation the loop-hook is not available. In order to use the hook the shuttle-race is adjusted back, bringing the hook in a position to encircle the needle and grasp the thread. In the formation of the lock-stitch the needle, in descending, passes through a channel in the wall of the race and through an aperture in the bottom part. While forming the loop-stitch the needle passes through an aperture in the bracket L.

P designates a rod fitting loosely within the upper part of the needle-bar, where the latter is tubular. From one side of said rod, near its lower end, a stud, P', projects, passing through a vertical slot in the needle-arm. R represents a spring, secured to the flange or head of the fixed arm B, and constructed with a triangular head, *r*. When the needle-bar is raised, the stud P' forces back the spring by pressing against the lower bevel of the head *r*, and rests

on the top part of the head until, as the bar descends, the upper end of the slot, striking the stud, forces it down. The rod P has an eye,  $p'$ , in its head for the thread to pass through, and is employed as a "take-up." The rod only falls after the needle has entered the fabric.

The segments  $e'$  may sometimes be secured rigidly to the yoke G, in order to give a pendulum motion to the shaft H. In such cases the shaft H is to be jointed to the vibrating arm I.

I claim as my invention—

1. The combination, with the hinged shuttle-race and its bracket L, of the looper and looper-shaft, substantially as specified.

2. The arrangement of the rotating shaft A, having the grooved collar E, the yoke G, shaft H, vibrating arm I, connecting-arms  $J^1$  M, and hinged shuttle-race  $J^2$ , having a bracket, L, for the looper and its shaft, all constructed and arranged to operate substantially as specified.

3. The take-up P, having the stud  $P'$  in combination with the spring R, constructed and arranged substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ALVIN SHATTUCK.

Witnesses:

JAS. H. MILLS,  
ERNST GREIN.