

A. SHATTUCK.

Improvement in Sewing Machines.

No. 124,167.

Patented Feb. 27, 1872.

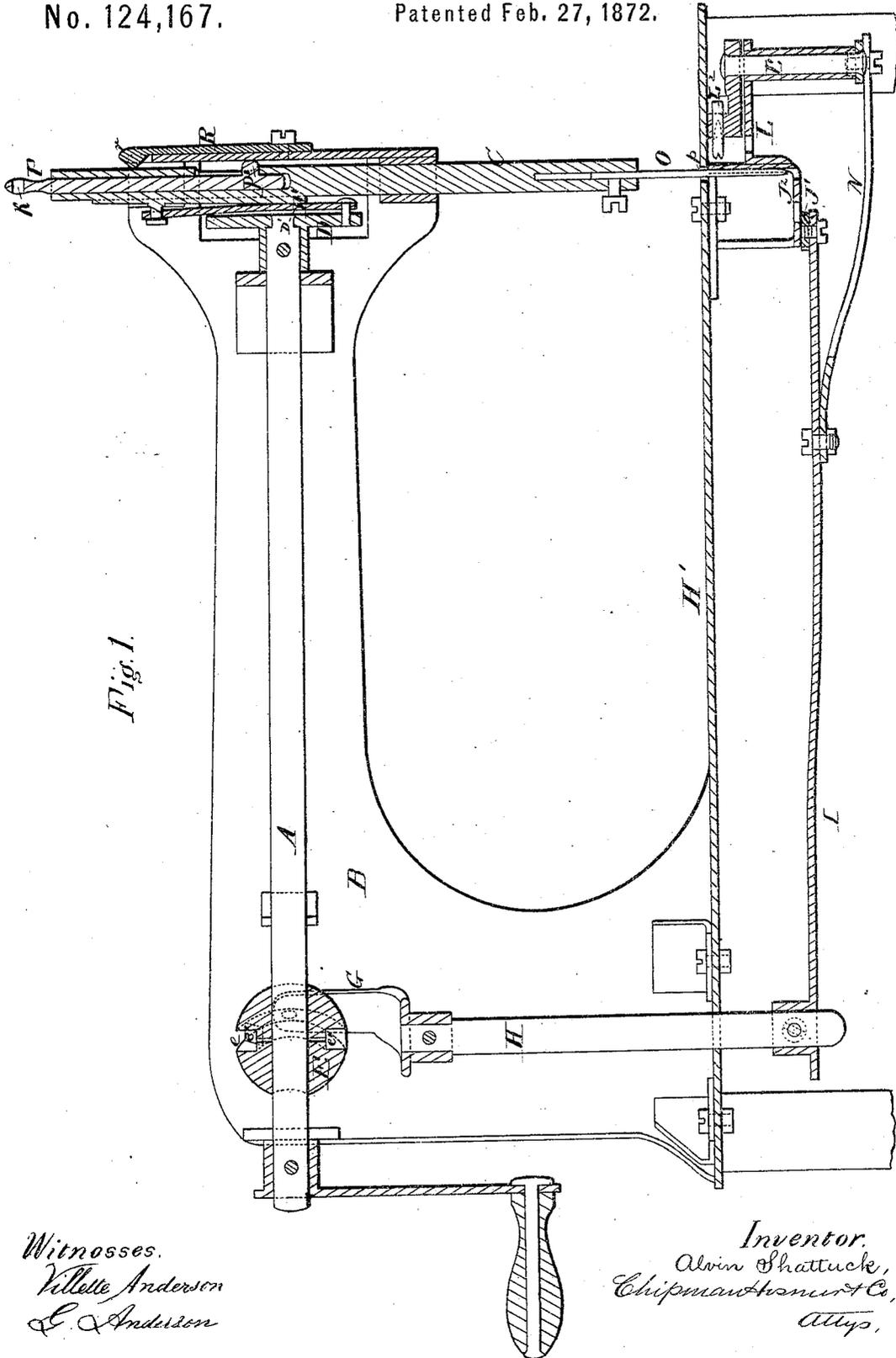


Fig. 1.

Witnesses.
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E. Anderson

Inventor.
Alvin Shattuck,
Chipman & Son, & Co.,
Atty.

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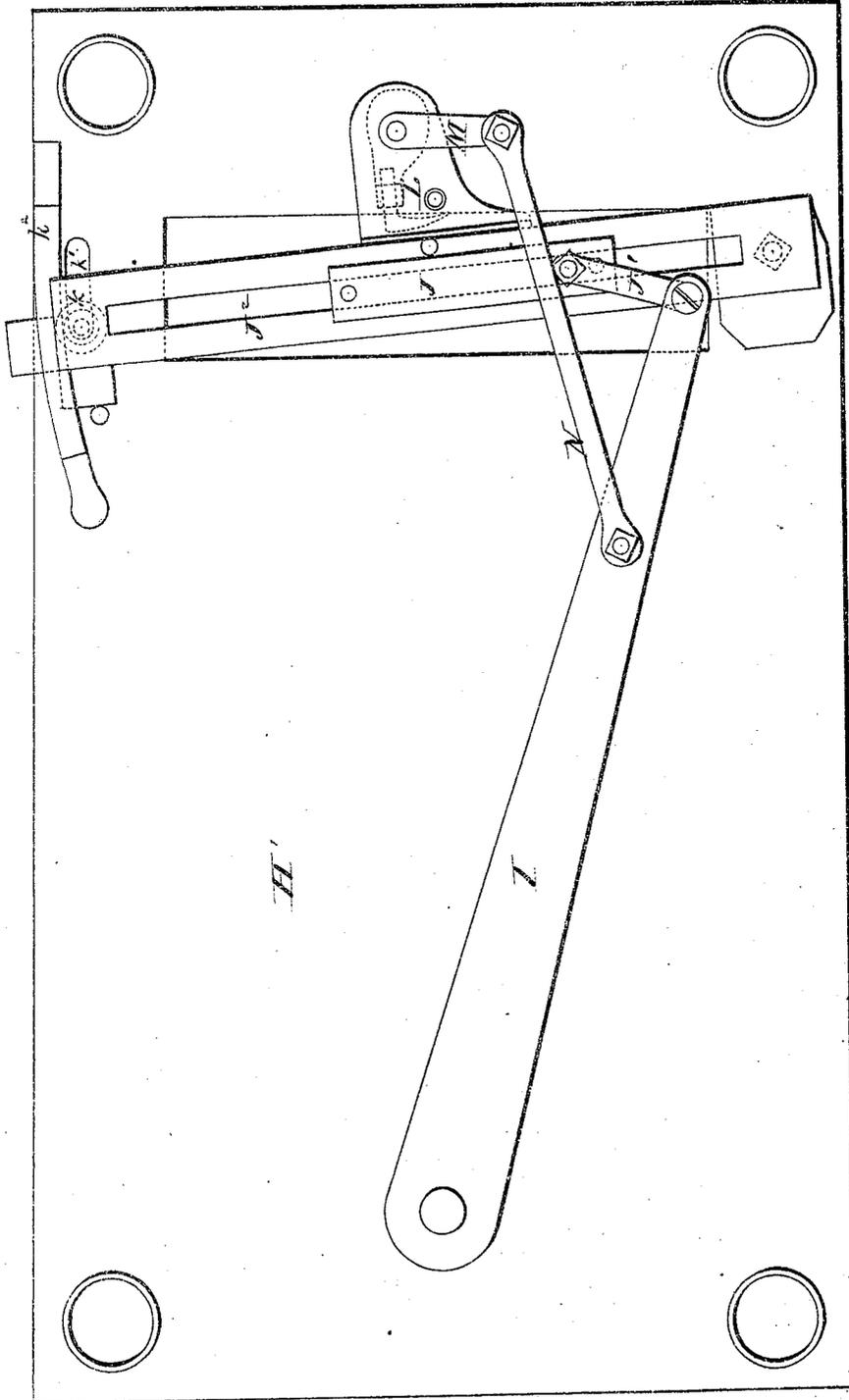


Fig. 2.

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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 rear end, 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, J¹. J² 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, k¹, in said cloth-plate. The adjusting-end of the shuttle-race projects through a space between the cloth-plate and a strip of metal, k², 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, L¹, holding on its upper end the loop-hook L². An arm, M, is attached to the lower end of the shaft L¹. 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 J¹ M, and hinged shuttle-race J², 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.