(No Model.)

2 Sheets—Sheet 1.

A. O. VERY.

FEEDING MECHANISM FOR SEWING MACHINES.

No. 423,358. Patented Mar. 11, 1890.

Fig. 1.

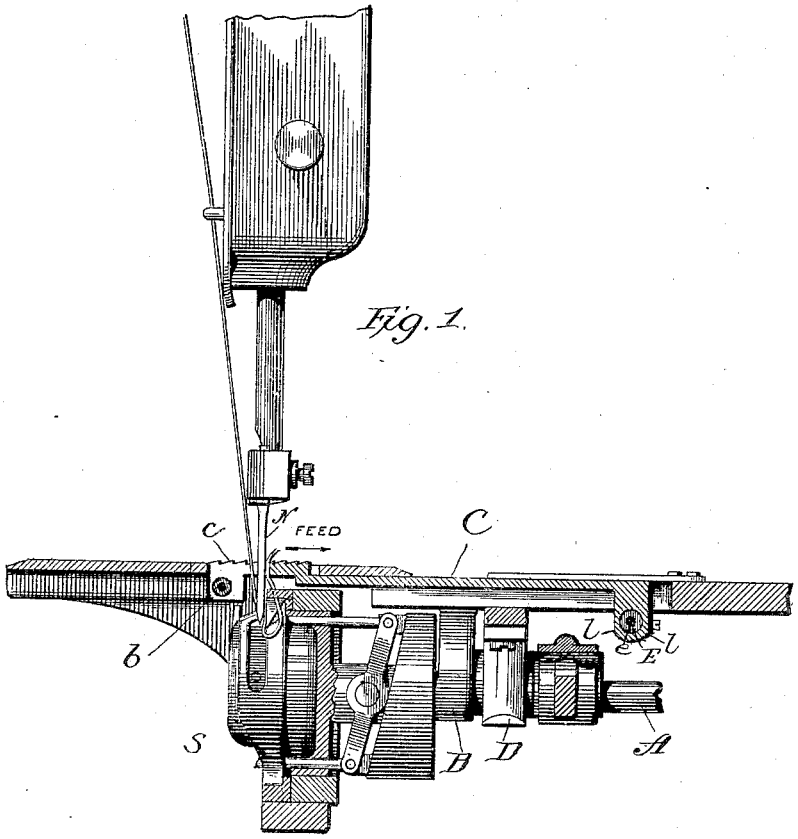
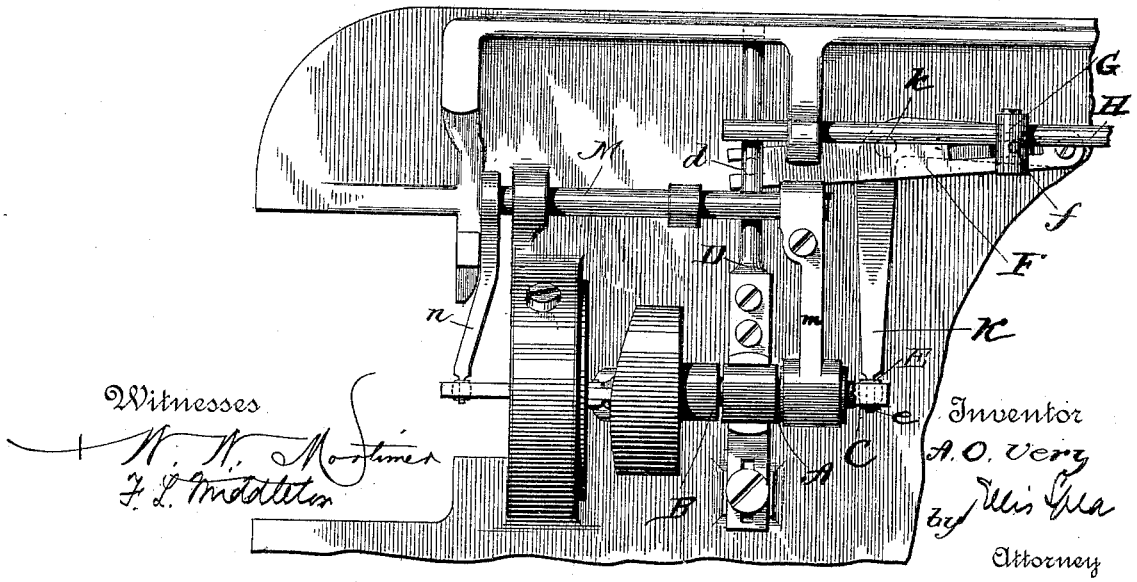


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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FEEDING MECHANISM FOR SEWING MACHINES.

No. 423,358. Patented Mar. 11, 1890.

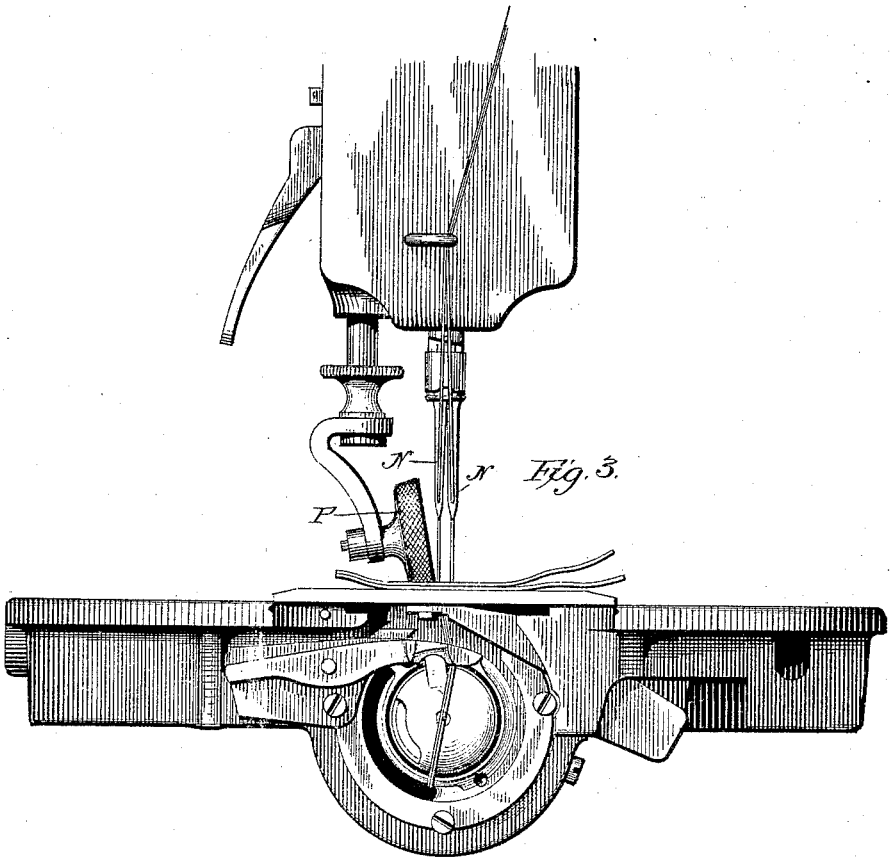

Fig. 3.

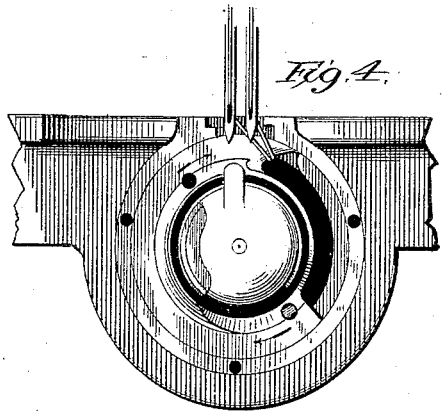

Fig. 4.

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UNITED STATES PATENT OFFICE.

ALPHA O. VERY, OF BOSTON, MASSACHUSETTS.

FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 423,358, dated March 11, 1890.

Application filed October 27, 1888. Serial No. 289,356. (No model.)

To all whom it may concern:

Be it known that I, ALPHA O. VERY, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention, which is the subject of the following specification, is an improvement in sewing-machines. It is shown as applied to a Standard sewing-machine, and in part the details of construction are in specified connection with parts of that machine.

The machine as improved by me is designed especially for sewing leather goods, but is not necessarily confined to work upon such materials.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 shows the shuttle-carrier and its shaft and the needles in side elevation, part of the table being shown in section. Fig. 2 shows a plan view of the under side. Fig. 3 is a front view of the machine, showing the needles in raised position. Fig. 4 shows the needles in the first part of their rising movement, the shuttle and shuttle-carrier being in elevation.

For the purpose above indicated the machine is provided with two needles N N, set in the same bar and arranged in a plane transverse to the line of movement of the feed. It has also a single shuttle S, which, as shown, is the same as that ordinarily used in the Standard machine. The shuttle is so arranged that it moves in the same plane with the needles, so that the shuttle-point takes the thread off both the needles and forms with both threads a lock or knot stitch underneath, while the needles form on the face of the fabric two regular lines of stitching, as in Fig. 9.

As the needles and the mechanism which gives them vertical movement, as well as the construction of the shuttle and its carrier and the parts which move it, are all the same as those shown and well known in the Standard machine, no description of them herein is deemed neeessary.

The arrangement of the feed mechanism is illustrated more plainly in Fig. 1. The feed-slide is shown at C and has its movement at right angles to the plane of the shuttle and substantially in a line drawn from the needles to the standard of the machine. This causes the work to be fed at right angles to the plane of the needles, while the needles are in position to have their threads engaged by a single shuttle, and thus two lines of stitching are made upon the fabric at a single operation. Three lines might be made by the use of three needles, and although two only are shown I do not limit myself to this number. The reciprocation of the feed-slide on this line also facilitates the handling of work of that kind which is to be stitched upon these machines, which is principally parts of shoes and boots and gloves and such smaller articles.

The workman sitting in front of the machine, or on the left-hand side of Fig. 1, may feed the work directly from him toward the standard of the machine, and he may turn it freely from the right hand or to the left without having his arm brought into contact with the standard, and the size of the material operated upon is such that it is not interfered with by the standard toward which it directly moves. This arrangement also permits a simpler construction of the feed mechanism than heretofore, this being clearly illustrated in Figs. 1 and 2. In these figures A represents the shaft, which is arranged underneath the table and carries the shuttle. It has a bearing B extending from the under face of the table, and next to this bearing is a slide D, which is operated back and forth by a cam on the shaft, the slide and cam being the same as that commonly used in the Standard machine. This slide is in connection with the feed-slide C through a pin *d*, (shown in dotted lines in Fig. 2,) engaging the slotted end of a lever F, which is pivoted at its rear end to one arm of a bell-crank lever K, this lever being pivoted at *k*, the other arm of the bell-crank connecting with the feed-slide. The lever F is slotted near its rear end, and in this slot a block slides, carrying a fulcrum-pin *f*, which is in engagment with a block or stud G on the rod H, this construction providing a fulcrum for the lever F. The rod H may be shifted to change this pivotal point, and thus the movement imparted to the feed-slide may be varied at will. The free end of the

lever K is reduced, as shown at *e*, and works in a bearing in the block E, which is rounded on its sides and fitted between jaws *l l* on a downward projection of the feed-slide C. The inner extremity of the feed-slide is shown in Fig. 2 directly in line or vertically above the shaft A. The motion of the cam-shaft A is thus transmitted to the end of the bell-crank lever K, and this gives the proper reciprocating movement longitudinally to the feed-slide. The up-and-down movement of the feed-slide is effected through a rock-shaft M. This has its bearings on the under side of the table and has an arm *m* connected to a cam on the shaft A, which cam is accurately placed so as to rock the shaft in proper order, as is well understood by those skilled in the art. The front end of the shaft M carries a fixed arm *n*, the end of which is reduced and works in a block having rounded sides and fitted to an opening in the front of the feed, as described in connection with the end of the bell-crank. The two arms *m n*, the rock shaft M, and the connection between the lever K and the feed are all the mechanism that is required for the operation of the feed.

It will of course be understood that the presser-foot P is turned to correspond with the direction of the feed. In other respects the operation and construction are not different from those in ordinary sewing-machines.

I claim as my invention—

1. In combination, in a sewing-machine, a needle-bar, two or more needles carried thereby, arranged with their eyes in line with the movement of the feed, a single shuttle arranged to move in a plane at right angles to the movement of the feed, a main shaft A, carrying the shuttle, a rock-shaft M, a feed-slide extending parallel to the rock-shaft and having movement in a line drawn from the needles to the standard, an arm connected with the cam on the main shaft for rocking the shaft M, an arm *n*, extending from said shaft for reciprocating the feed-slide vertically, and means for reciprocating the slide horizontally, substantially as described.

2. In combination with the feed-slide and means for giving it vertical reciprocation, a bell-crank lever having pivotal connection with the feed-slide at one end, a slide D, operated from a cam on the main shaft, a lever F, connecting the slide D and bell-crank lever, and an adjustable fulcrum for the lever F, substantially as described.

3. In combination with the feed-slide and means for giving it vertical rociprocation, a slide D, the lever F, connected therewith, a rod H, having a block G thereon, a pin in said block forming a fulcrum and fitted to a slot in the lever F, a bell-crank lever K, pivoted at its angle and connected to the lever F at its outer end, and a pivotal connection between the other end of the bell-crank and the end of the feed-slide, substantially as described.

4. In combination, the feed-slide C, a rock-shaft M, a cam for rocking said shaft, an arm *n* for imparting this motion to the feed-slide and to reciprocate the same vertically, a slide D, operated from a cam on the main shaft, a bell-crank lever K, connected to the feed-slide, and an operating-connection between the bell-crank and the slide D, substantially as described.

5. In combination with the feed-slide and means for giving it vertical reciprocation, a slide D, operated from a cam on the main shaft, a lever F, an adjustable fulcrum for said lever, connections between the slide D and lever F, and connections from the lever F to the feed-bar, substantially as described.

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

ALPHA O. VERY.

Witnesses:
RODNEY LUND,
S. A. WELCH.