T. A. WEBER.

Sewing Machines.

No. 145,823. Patented Dec. 23, 1873.

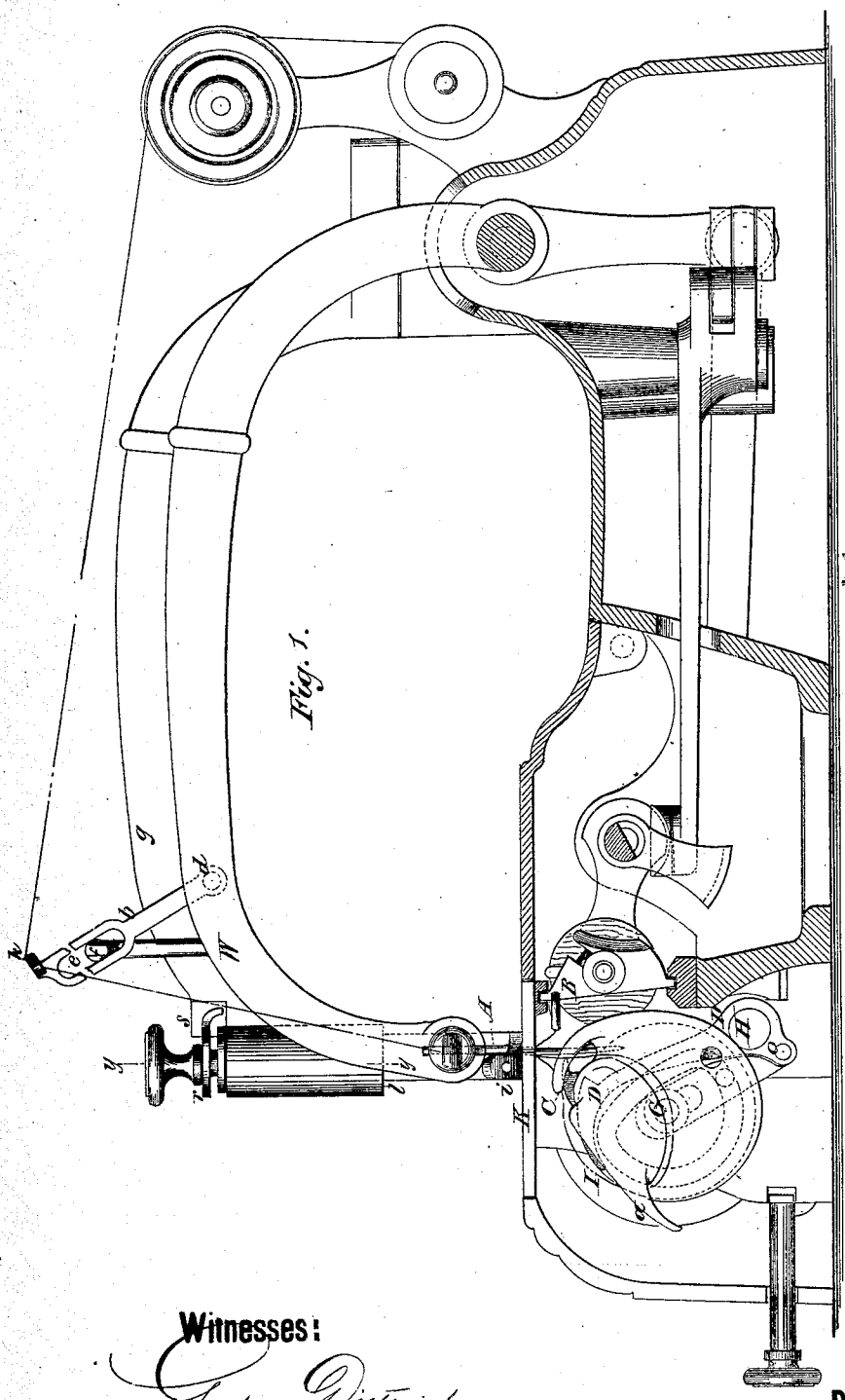
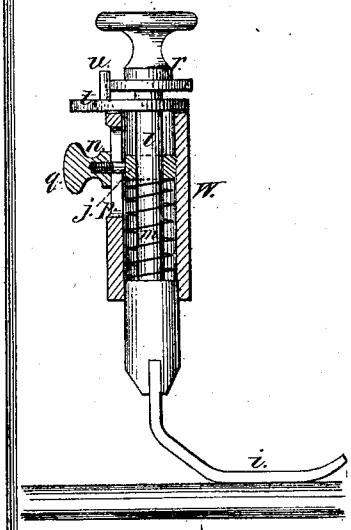


Fig. 1.

Fig. 3.



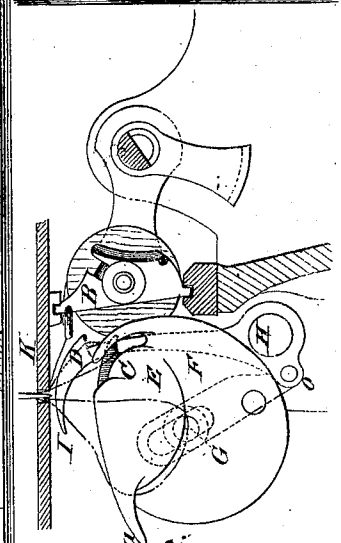


Fig. 2.

Witnesses:

Sandrave Dieterich

Inventor:

T. A. Weber

Per

Attorneys.

UNITED STATES PATENT OFFICE.

THEODORE A. WEBER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO ALBERT LATHROP RUNYON.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **145,823**, dated December 23, 1873; application filed August 30, 1873.

To all whom it may concern:

Be it known that I, THEODORE A. WEBER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification:

The first part of the invention consists of an arrangement of a rotating looper and a vibrating loop-spreader, such as are used for opening the loops wide enough for passing a commercial spool, so that the rotating looper shall first take the thread from the needle and open the loop to some extent before the vibrating spreader takes it, instead of the reverse arrangement, as when these devices have been before used. By this arrangement a much shorter and stiffer needle can be used, and there is less liability of the needle springing away from the looper and missing stitches. The second part of my invention consists in the arrangement of an upper thread take-up to operate in connection with the under bulged-plate take-up heretofore used, all as hereinafter described.

Figure 1 is a longitudinal sectional elevation. Fig. 2 is a partial section, showing some of the parts in different positions; and Fig. 3 is a partial section on the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the needle; B, the spool-carrier for the locking-thread; C, the rotary looper, and D the vibrating loop-spreader. The looper is mounted on a revolving bulged plate, E, which turns on the axis G, so arranged, relatively to the needle, that the looping-hook C takes a very direct downward course after engaging the thread, while the spreader D is, of necessity, caused to take a lateral course to carry the thread across the path of the spool-carrier B, to open the loops wide enough for the spool-carrier to pass through. These parts are all constructed and relatively arranged the same as represented in the Patent No. 139,067, May 20, 1873, except I now cause the rotating looper to take the loop first, whereas in the aforesaid patent the spreader took it first, and the looper afterward.

I improve Lathrop's machine by enabling a shorter needle to be used. The "take-up" consists of a bar, *b*, pivoted at one end to the needle-bar W at *d*, and having a long slot, *e*, in it near the other end, through which a stationary rod, *f*, fixed on the stationary presser-arm *g*, passes for a pivot, on which the end *h*, having the hole for the thread, is caused to swing up quickly at the beginning of the down movement of the needle, and thus hold the loop taut on the bulged plate below while drawing it, whereas before it was loose part of the time.

To vary the pressure of the presser *i*, I have a collar, *j*, on the presser-bar *l*, above the pressure-spring *m*, with a screw-stud, *n*, projecting out through the slot *p*, and having a clamping-nut, *q*, to screw up against the head of the presser-arm and bind it fast, to vary the tension of the spring by shifting the collar up or down on the presser-bar, and fastening it whenever needed.

The presser-stock has a plate, *r*, for holding it up to adjust the work, by lodging on a rest when the stock is turned to swing the presser around out of the way; but, as it is not always necessary to turn the foot around, I provide the turning-plate *t* with a pin, *u*, to swing under plate *t*, to hold the presser up, and to swing back again to let it down. This plate can be operated much easier than the presser, and thus save considerable labor.

When the spool has passed through the loops, and the spreader D begins to go back to release the loops, the bulged plate E enters it, and draws the thread laterally over its swell, so as to keep the necessary tension on the slack given up by the spreader. At the same time the upper take-up begins to rise, the needle-arm having previously reached the upper limit of its movement, and begun to descend again, and acts, in conjunction with the bulged plate, to keep the loops taut. The bulged plate escapes through

the loop as fast as it is taken up, and the latter passes off the horn *a* as it vanishes, the horn preventing it from being caught by the needle and the spreader D.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The arrangement of the rotating looper, needle, and the vibrating spreader, substantially as described, so that the rotating looper takes the loop first and near the plate K, and then the spreader takes said loop from the looper, substantially as specified.

2. The upper take-up *b*, arranged in connection with the needle-arm W, and in combination with the lower bulged rotating take-up E F, substantially as specified.

THEODORE ALEX. WEBER.

Witnesses:
LEBBEUS WISNER LATHROP,
W. W. ABBOTT.