(No Model.)

H. W. HADLEY & W. L. GROUT.

TAKE-UP MECHANISM FOR SEWING MACHINES.

No. 345,683. Patented July 20, 1886.

Fig. 1.

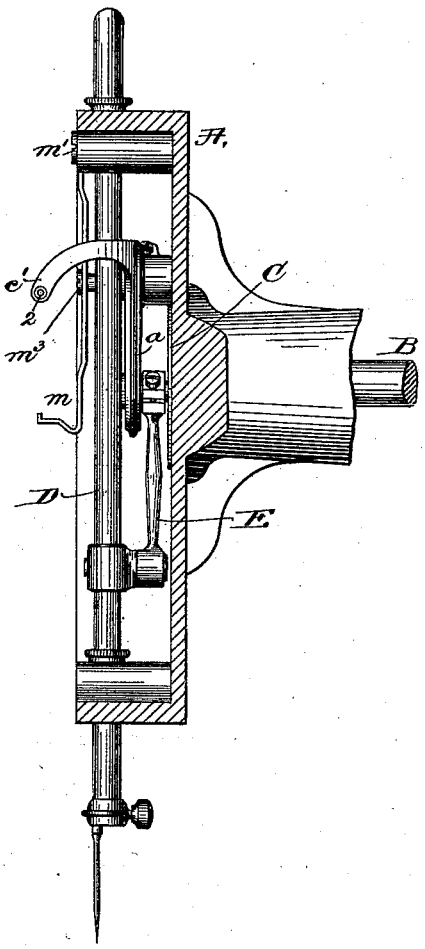
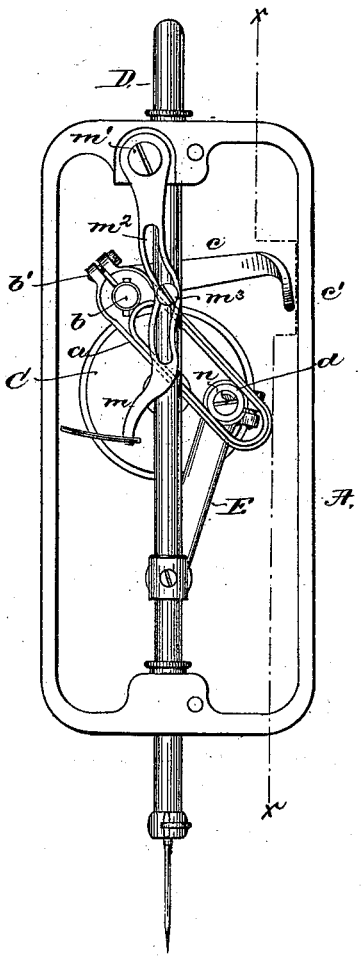


Fig. 2.



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UNITED STATES PATENT OFFICE.

HORACE WEBSTER HADLEY AND WILLIAM L. GROUT, OF ORANGE, MASS.

TAKE-UP MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 345,683, dated July 20, 1886.

Application filed September 7, 1885. Serial No. 176,345. (No model.)

To all whom it may concern:

Be it known that we, HORACE WEBSTER HADLEY and WILLIAM L. GROUT, both of Orange, county of Franklin, and State of Massachusetts, have invented an Improvement in Take-Up Mechanisms for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a simple and effective take-up and slack-thread controller.

In the invention to be herein described the take-up is actuated by the crank-pin employed to impart movement to the needle-bar, and the latter, by a pin thereon, actuates the slack-thread controller.

This invention consists, essentially, in a rotating shaft having an attached disk and crank-pin, a link connected therewith, a needle-bar provided with a pin or stud, to which the said link is connected, the needle-bar having stationary guides attached to the head of the machine, one above the other, in the same vertical plane, combined with a take-up composed of a slotted arm and a take-up arm, having their fulcra on a stud attached to the head of the machine at one side the center of said rotating shaft, the said crank and pin which operates the needle-bar entering the slot in the arm of the take-up lever and operating it, substantially as will be described.

Figure 1, in vertical section on the irregular line $x\,x$, Fig. 2, represents a sufficient portion of the head of a sewing-machine to illustrate this invention, the face-plate being omitted; and Fig. 2 is a front elevation of the said head, or a view taken from the left of Fig. 1.

The head A, rotating needle-bar-actuating shaft B, its attached disk C, the needle-bar D, and link E are all of usual construction.

The needle-bar D is reciprocated vertically in stationary guides or bushings 10 10, fixed in the head of the machine, one vertically over the other.

The take-up is composed of the slotted arm *a*, split at one end to embrace the pin or stud *b*, the said arm being clamped about the said pin or stud by a screw, *b'*, and of an arm, *c*, one end of which, bent forward, as shown at *c'* in the drawings, is provided with an eye, 2, to receive the needle-thread. The stud *b* is fixed to the head of the machine at one side the center of rotation of the main shaft B. The crank-pin *d*, joining the end of the link E with the disk C, is extended sufficiently through the link E to enter the groove in the arm or lever *a* of the take-up, the said crank-pin, extended through the said lever, being provided with an anti-friction roller, *n*. As the crank-pin approaches and recedes from the fulcrum at stud *b* of the take-up lever, the latter is moved first at a fast speed and then at a slow speed, as is necessary to actuate the take-up in the proper order of time. The slack-thread-controlling lever *m*, pivoted at *m'*, has its end bent outward, as in Fig. 3, to receive the needle-thread against it. The slack-thread-controlling lever *m* is provided with an irregular slot, as at m^2, which receives the screw-stud m^3, in practice provided preferably with an anti-friction roller. The stud m^3 moves the slack-thread-controlling lever in such manner as to prevent it getting under the point of the needle, giving it up, however, as needed by the stitch-making mechanism, the said lever *m* being moved positively. In some classes of work the lever *m* may be dispensed with; but when stitching thin goods it is especially desirable. Actuating the take-up by the crank-pin which moves the needle-bar insures for the take-up movements in unison with the needle, and by the screw *b'* the movements of the take-up and needle may be exactly timed.

We claim—

1. The rotating shaft B, its attached disk and crank-pin, and the link and needle-bar provided with the pin or stud, to which the said link is attached, and stationary guides for the said needle-bar, said guides being attached to the head of the machine in the same vertical line, combined with a take-up consisting of the arm *c* and the slotted arm *a*, having its fulcrum on the stud *b*, attached to the head of the machine at one side of the main shaft B, the crank-pin operating the needle-bar entering the slot in the arm *a* of the take-up and operating it, all substantially as described.

2. The shaft B, its disk and crank-pin and link and needle-bar, and the take-up com-

posed of the arm c and slotted arm a, the crank-pin entering the slot of the said arm a, combined with the slotted slack-thread-controlling lever, and with the stud m^3, carried by the needle-bar and entering the slot of the said slack-thread-controlling lever, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:
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