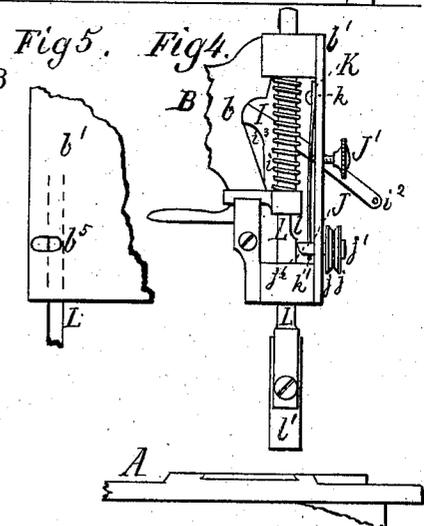
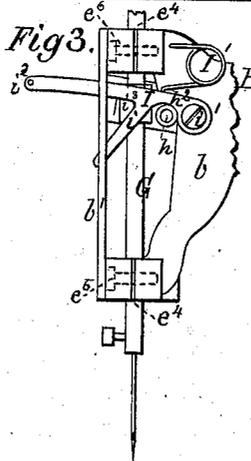
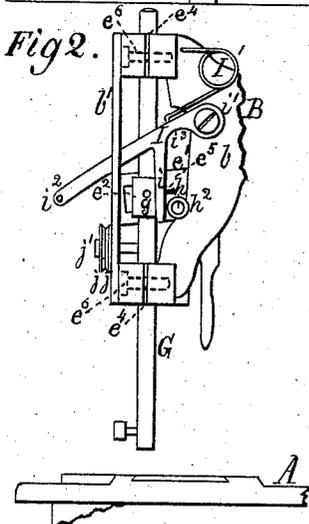
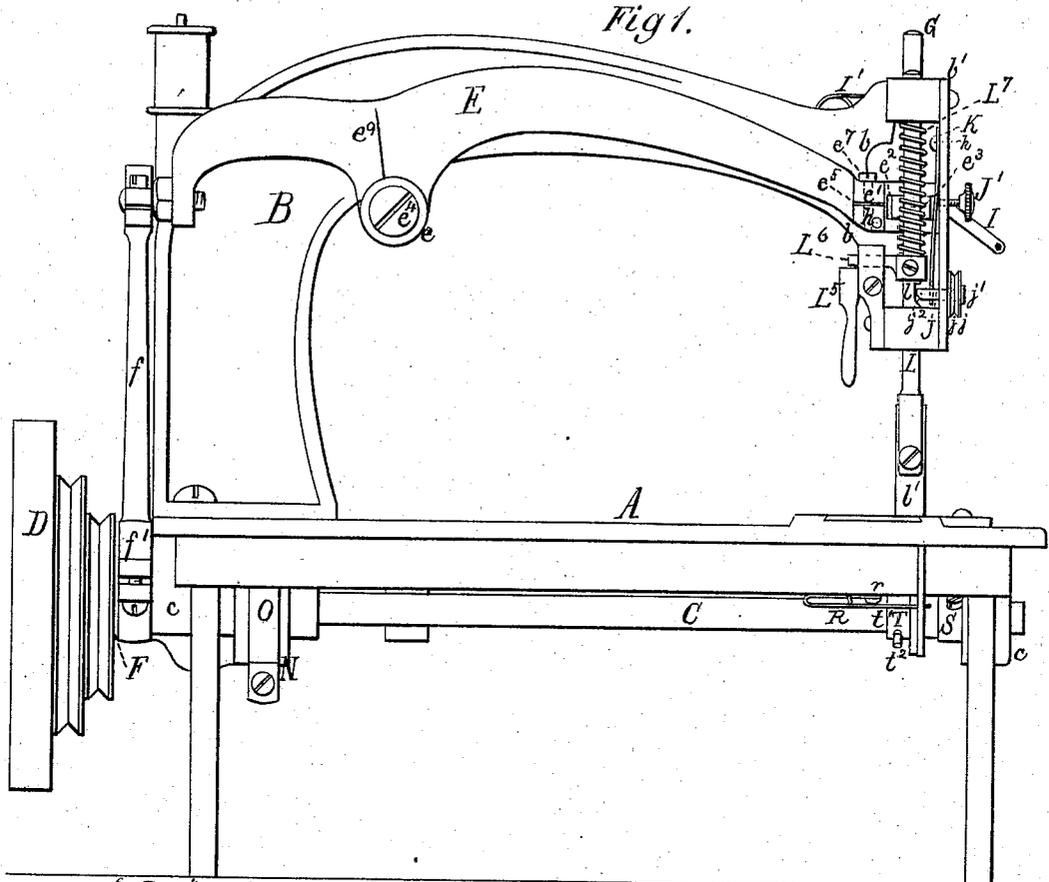


J. W. COREY.
Sewing-Machine.

No. 216,942.

Patented July 1, 1879.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

JASPER W. COREY, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 216,942, dated July 1, 1879; application filed December 10, 1878.

To all whom it may concern:

Be it known that I, JASPER W. COREY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of the rear side of my improved sewing-machine. Fig. 2 is a detail view, showing the take-up mechanism and contiguous parts. Fig. 3 is a detail view of the take-up as it appears at its highest elevation. Fig. 4 is a detail view of the presser-bar and tension mechanism for the needle-thread; and Fig. 5 is a detail front view of the face-plate.

My invention consists, first, in a novel combination of parts, and a certain special construction of the presser-bar with reference to said combination of parts, whereby the tension is removed entirely, or almost so, from the upper thread when the presser-bar is raised to its highest point, and again applied when the presser-bar is depressed to its lowest point, both the removal from and application of the tension devices to the upper thread being effected by the peculiar formation of the presser-bar, the up and down adjustments of the same, together with the application of the tension devices in such relation to the peculiarly-formed portion of the presser-bar, that they will be acted upon in the proper manner and at the proper time. By this part of my invention greater facility is attained in the means employed for accomplishing an old result, and the operator is still enabled to remove the work from the machine without the trouble and annoyance of slackening the upper thread by grasping it with the hand and pulling off enough slack thread to permit the work to be removed without breaking the thread or springing or breaking the needle.

Second. In an improved take-up which does not operate until the needle has left the work being sewed—a result which is very desirable; and while this result is secured my combination of parts is such that great simplicity is attained and the necessity of employing an

independent take-up is avoided, the needle-lever, with a few simple connections, answering all the purposes of such independent take-up.

In the drawings, A represents the bed-plate of my sewing-machine; B, the supporting-bracket; C, the main shaft; D, the driving-wheel, and E the needle-arm. The needle-arm is formed with an angular bend at e^2 , and with a tubular bearing at e , and by this construction its rear extension beyond its bearing e is thrown out laterally from the bracket B. This needle-arm is arranged on the rear side of the bracket B, and is pivoted thereto, as shown at e^4 . The rear end of the arm E is connected to an eccentric-rod, f , by a ball-and-socket-joint device, and this rod is connected by a strap, f^1 , and eccentric F with the main shaft C.

The front end, e^1 , of the needle-arm is connected by means of a slot, e^2 , sliding block e^3 , and lifting or operating pin g , Fig. 2, with the needle-bar G, which has its bearings in the head b of the bracket B.

The parts above described with letters of reference may all be of substantially the usual construction, and I make no claim for the same under this patent.

Near the needle-bar connection the needle-arm E is provided with a pin, h , on which is an anti-friction roller, h^2 , and against which latter the arm i of a take-up lever, I, bears. The rear end of the lever I is pivoted at i^1 to the head b of bracket B, and said lever extends thence forward through a slot in the face-plate b^1 of the head b of said bracket, and is provided near its front end with an eye, i^2 , through which the needle-thread is passed. The arm i joins the lever I, with a curve, i^3 , of such shape and position that the roller h^2 will begin to operate the lever I when the needle in the needle-bar has cleared the fabric being sewed. A spring, I^1 , suitably attached to the bracket and take-up, keeps the lever I down and the arm i against the roller h^2 . The face-plate b^1 of the bracket B is provided with a tension device for the needle-thread, which tension device consists of a pair of flaring clamp-disks, j , loosely fitted upon a bearing-pin, J, and confined between a collar, j^1 , of said pin and the face-plate b^1 . The bearing-

pin J extends through a horizontal oblong slot, b^5 , in the face-plate b^1 , to the inner side of which plate a spring, K, is fastened at k , and connected with the pin J by having its reduced free end k' passed through the pin.

The pin J is in the same vertical plane with the presser-bar L, which bar is raised and lowered in the usual manner, and by any of the well-known appliances, as, for instance, by a cam-lever, L^5 , a lug, L^6 , and a spring, L^7 , as shown in the drawings. The cam-lever, together with the lug, serves as the means for raising the presser-bar, and the spring L^7 , against which it is raised, serves for lowering said presser-bar. The bar L is provided with a depression, l , opposite the end j^2 of the pin, and into which depression the pin enters when the presser-bar is lowered. This depression l is just large enough to leave the end j^2 of the pin J untouched, so that the operation of the tension-spring K is not interfered with. The lower end of the depression l and the inner end, j^2 , of the pin J are rounded, in order to facilitate the upward sliding of the presser-bar against the end of the pin J when the presser-foot l' is raised.

When the presser-foot is at its highest elevation the depression l is above the pin J, and the pin bears against the thicker portion of the presser-bar L, whereby the pin is forced forward in its bearing in the face-plate b^1 and the power of the spring K restrained, and thus the disks j are relieved and become loose, and all tension on the thread ceases, whereupon the fabric may be easily removed from its position under the needle by simply raising the presser-foot, as the needle-thread is free from tension, and can be easily drawn through the needle without bending it. By having the slot b^5 oblong, the tension device can be moved laterally out of the range of the thicker part of the presser-bar, and thus facilities for sewing very thick fabrics are afforded without having the tension interfered with by said thicker portion of the bar when the presser-foot is raised by such fabrics.

A set-screw, J' , in the face-plate b^1 serves to regulate the tension by being screwed more or less forcibly against the spring K.

From the foregoing description it will be seen, first, that while the devices heretofore used for connecting the tension with the presser-bar require the employment of intermediate machinery, which increases the cost of a sewing-machine, it is only necessary to make slight changes in the already-existing

parts of such machine, which changes enable me to furnish a machine with a self-relieving tension at a very trifling additional expense, while at the same time my tension contrivance avoids the necessity of slacking the needle-thread by hand in order to remove the cloth without breaking the thread and springing or breaking the needle in the act of removing the cloth; second, that the take-up in my machine has all the advantages of an independent take-up, while much simpler, in that it consists only of three pieces—to wit, a lifting-pin, a tension-spring, and a take-up lever, all compactly together at the front part of the bracket B.

I claim—

1. The combination, with the needle-arm E, provided with the pin h , of the bracket B and the take-up lever I, provided with a spring for holding it down, and with the arm i , which has a straight vertical guiding side, which is terminated in a horizontal curved bearing-surface, i^3 , the parts being relatively arranged, as described, whereby the said take-up lever remains at its lowest limit of motion until the needle-bar, with the needle, has arisen above the fabric, when it begins to operate to take up the thread, as set forth.

2. The combination, with the head of the sewing-machine, provided with an elongated slot, b^5 , and the presser-bar L, provided with the depression or notch l , of the tension device combining the spring K, pin J, and disks $j j$, the said spring being pivoted to the head, whereby the said pin J and disks $j j$ are permitted to move laterally, substantially as and for the purpose described.

3. The presser-bar L, having the depression l , and suitable devices for raising and lowering the said bar, in combination with the pin J, an upper tension device, and means for operating the same, whereby when the presser-bar is raised the said pin is made to release the upper thread-tension device from the said thread, and when the presser-bar is lowered the said pin is caused to move to its normal position, and the upper thread-tension device caused to act upon the said thread, substantially as described.

Witness my hand in the matter of my application for a patent for improvement in sewing-machines.

JASPER W. COREY.

Witnesses:

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J. RUSSELL BARR.