

No. 860,546.

PATENTED JULY 16, 1907.

E. C. IVES.

TAKE-UP FOR SEWING MACHINES.

APPLICATION FILED FEB. 7, 1906. RENEWED MAY 28, 1907.

Fig. 1.

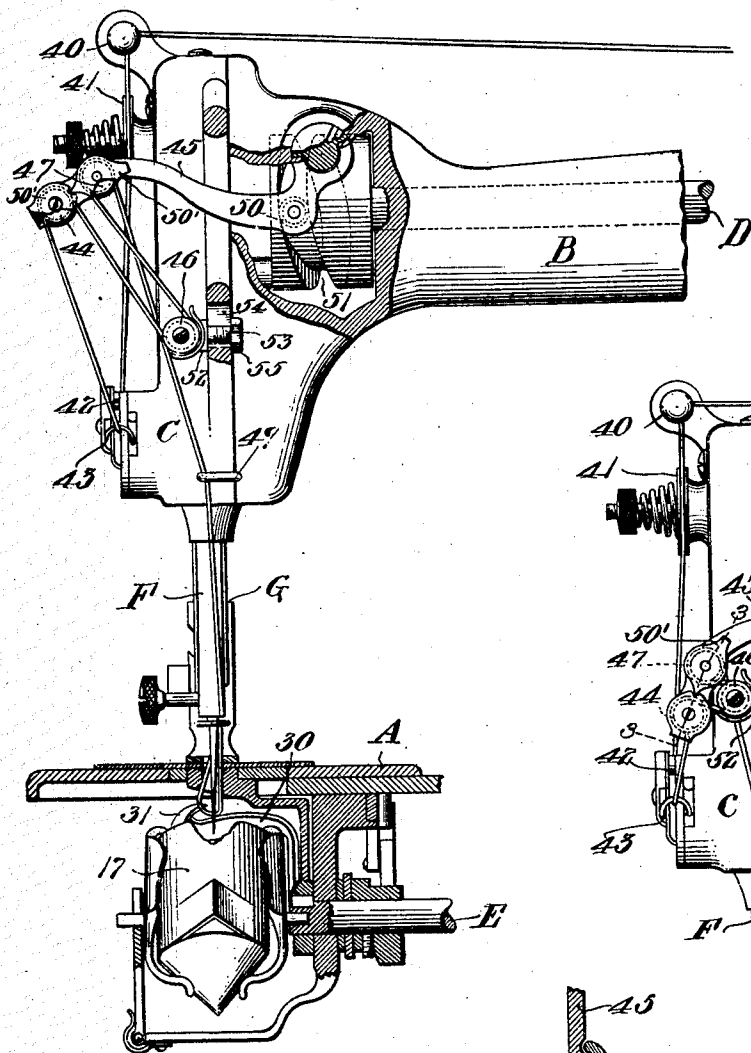


Fig. 2.

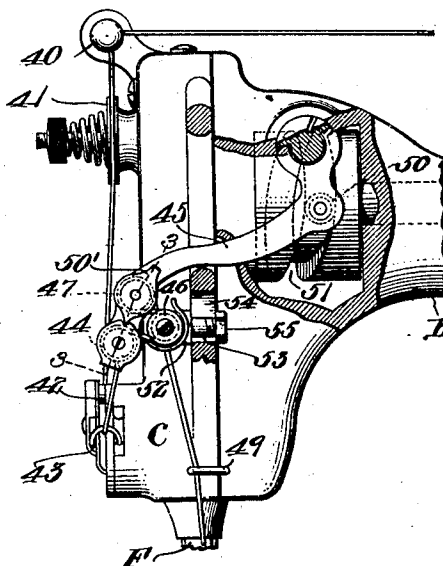
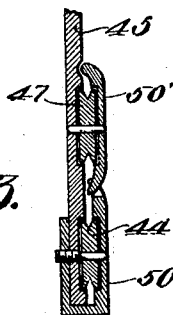


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ERNEST CHARLES IVES, OF WARREN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAMES H. PERKS AND THOMAS PERKS, OF WARREN, PENNSYLVANIA.

TAKE-UP FOR SEWING-MACHINES.

No. 860,546.

Specification of Letters Patent.

Patented July 16, 1907.

Original application filed August 17, 1905, Serial No. 274,601. Divided and this application filed February 7, 1906.
Serial No. 299,962. Renewed May 28, 1907. Serial No. 376,206.

To all whom it may concern:

Be it known that I, ERNEST CHARLES IVES, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented a new and useful Take-Up for Sewing-Machines, of which the following is a specification.

This invention relates to sewing machines, and has for its principal object to provide a novel form of take up in which the thread is guided by rollers so arranged as to reduce the friction on the thread to a minimum, and thus lessen danger of breakage.

A further object of the invention is to provide a simple form of take up mechanism which will operate rapidly to take up the large loop necessarily formed in sewing machines of that general type in which the bobbin or reel carrier is arranged for the reception of an ordinary spool of cotton.

A still further object of the invention is to provide a take up that may be readily threaded.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a front elevation, partly in section, of the forward portion of a sewing machine provided with a take up constructed in accordance with the invention. Fig. 2 is a detail view of the principal parts of the take up mechanism in a different position. Fig. 3 is a transverse sectional view of the outer end of the main take up arm on the line 3—3 of Fig. 2.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The bed plate A, goose-neck B and head C may be of the construction ordinarily employed, and in the goose neck are bearings for the reception of the main shaft D which is driven in any suitable manner, and is connected to the looper shaft E. In the head are arranged guides for the reception of the needle bar F and presser bar G, these being of the ordinary construction.

Arranged below the cloth plate is a bobbin or spool casing 17 that is arranged to receive a spool of thread, said casing being supported within a suitable frame, and around said casing and frame passes a looper, com-

prising an arm 30 rigidly secured to the looper shaft E, and extending in a radial line therefrom, the outer end of the arm being bent substantially at a right angle and being provided at its end with a looper head 31. 55

The detailed construction of this portion of the mechanism, however, forms no part of the present invention, and is fully described and claimed in an application for Letters-Patent for sewing machine, filed by me on August 17, 1905, Serial No. 274,601, and of which 60 the present application is a division.

The needle thread passes from the spool, carried by any suitable support, to a guide 40 at the top of the head and passes around a tension 41, passing thence around a guide 42 and under a small spring take up 43 of a type commonly used. From thence the thread passes over a grooved wheel 44 arranged at the outer end of a take up arm 45; thence over the adjustable pulley 46 carried by the head; thence around a second grooved wheel 47 carried by the take up arm, and thence down 70 through a guiding eye 49 to the needle.

The take up arm 45 is in the form of a bell crank lever having one end pivoted within the head and provided with a pin or anti-friction roller 50 which enters a cam groove 51 formed in a revoluble cam carried by the needle shaft B, and said take up arm has an extensive movement, which, in connection with the multiplying wheels over which the thread passes, will quickly take up the large loop necessarily formed in this type of machine. The outer end of the arm 45 is provided with 80 circular depressions or recesses for the reception of the sides of the wheels 44 and 47, and the opposite sides of said wheels are received in recesses formed in guard plates 50' that are secured to the arm and are slightly separated from each other by an approximately V-shaped slot to permit the passage of the thread. 85

The take up arm is in the fullest depressed position when the needle is at the highest point, and moves upward as the needle moves down, and the looper moves up, reaching its highest point just as the needle is about to enter the fabric, while the looper head is in the horizontal position to the rear of the spool carrier. During the next stage of the movement, that is to say, while the needle is passing through the fabric, and the looper is advancing to engage the needle thread, the take up arm moves downward, and continues to move down, reaching its full down stroke by the time the needle has moved to the full up position, and the looper has about reached the loop releasing position. The take up then commences to move upward, the movement 100 being comparatively rapid to take up the loop and complete the stitch forming operation before the looper can

advance to a position to take a second loop from the needle.

It is preferred to have the guide pulley 46 adjustable vertically, and therefore it is carried by a bracket 52 5 having a threaded stem 53 passing through an upright slot 54 in a portion of the head C, there being a nut 55 provided upon the rear end of the stem for adjustably holding the bracket at any desired elevation. It will here be explained that it is not necessary to occasionally 10 shift or adjust the bracket 52, as it is merely necessary to once set the bracket to the satisfaction of the user of the machine, after which the bracket does not require further adjustment.

I claim:—

In a sewing machine, the combination with thread 15 guides on the sewing machine head, of a take up arm having wheel receiving recesses in one face, a pair of bracket members secured to said arm, and, also, having wheel receiving recesses, said brackets being spaced to form a thread passage, and a pair of grooved wheels having their 20 opposite sides fitting within said recesses and forming thread guides.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ERNEST CHARLES IVES.

Witnesses:

RALPH W. SALSURY,
JAMES H. PERKS.