

A. A. MERRITT.

THREAD GUIDE.

APPLICATION FILED JAN. 12, 1910. RENEWED AUG. 1, 1912.

1,041,656.

Patented Oct. 15, 1912.

Fig. 1.

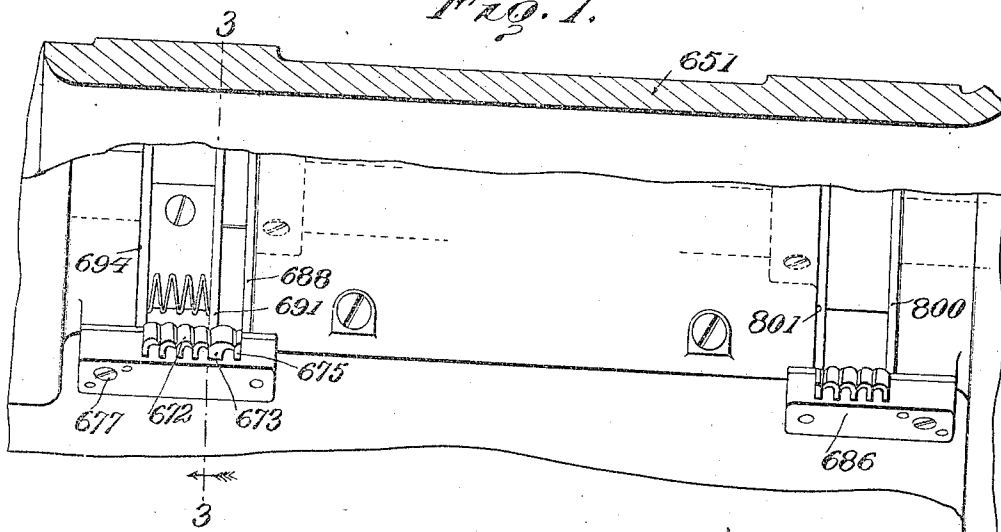


Fig. 2.

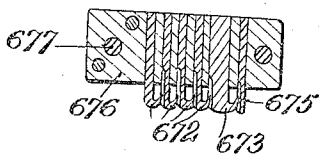


Fig. 4.

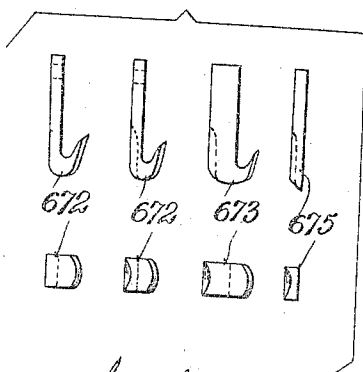
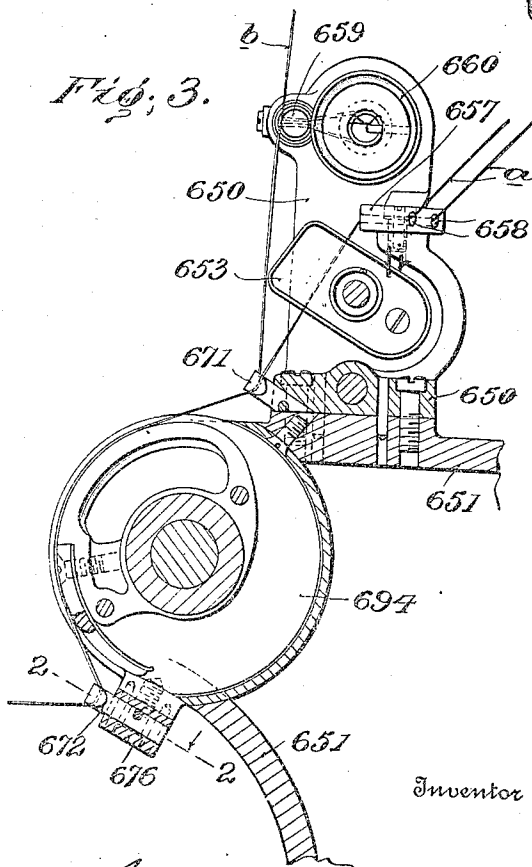


Fig. 3.



Witnesses
M. A. Hood.
R. C. Fitzhugh.

Inventor
Arthur A. Merritt.
By
Shaw, Cameron, Lewis & Morris
Attorneys

UNITED STATES PATENT OFFICE.

ARTHUR A. MERRITT, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WILLCOX & GIBBS SEWING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

THREAD-GUIDE.

1,041,656.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Original application filed December 12, 1908, Serial No. 437,163. Divided and this application filed January 12, 1910, Serial No. 537,683. Renewed August 1, 1912. Serial No. 712,775.

To all whom it may concern:

Be it known that I, ARTHUR A. MERRITT, of Worcester, Massachusetts, have invented a new and useful Improvement in Thread-Guides, which invention is fully set forth in the following specification.

This is a division of my application filed December 12th, 1908, Serial No. 467,163, for improvements in sewing machines.

The present invention, which relates to improvements in thread-guides, will be readily understood by reference to the illustration in the accompanying drawing of what is at present regarded as the preferred embodiment thereof.

In said drawing, Figure 1 is a view, partly in vertical section and partly in front elevation, of a part of the bridge portion of the frame-work of a sewing machine showing thread-guides of the present invention applied thereto; Fig. 2 is a sectional view through one of the thread-guides on line 2—2 of Fig. 3; Fig. 3 is a vertical section on line 3—3 of Fig. 1, also showing parts mounted on the machine frame which parts are omitted in Fig. 1; and Fig. 4 is a detail view of the thread-guiding hooks and plates.

Figs. 1 and 3 illustrate the thread-guide of this invention as applied to a sewing machine of the character fully described and illustrated in the aforesaid original application of which the present is a division. 651 is a part of the bridge portion of the frame-work of such a machine. Two rotary take-ups are shown; one for four needle-threads and a single cross-thread includes three circular flange-plates 688, 691 and 694; the other, for four looper-threads includes two circular flange-plates 800 and 801. Fig. 3 shows a bracket or frame 650 secured to the upper surface of bridge 651, and supporting a thread-guide 659 and thread-tension disks 660. The single cross-thread *b* passes inward through the eye of thread-guide 659, around the spindle of tension disk 660 between said disks, outward through the eye of said thread-guide 659, downward to a set of thread-guiding hooks of the present invention, over one of the rotary take-ups between the flange-plates 688 and 691 thereof, and thence to another set of thread-guiding hooks of the present invention. The bracket 650 also supports a plate 657 having therethrough thread-pas-

sages 658, and a set of thread-tension plates 653. The four needle-threads *a*, only two of which show in Fig. 3, pass through the thread-passages 658, between the tension-plates 653, to the upper set of thread-guiding hooks of the present invention, over the rotary take-up between the plates 691 and 694 thereof, and thence to the lower set of thread-guiding hooks of the present invention. The four looper-threads, not shown, after passing between suitable thread-tension disks, not shown, pass through an upper set of thread-guiding hooks of the present invention, also not shown, but similar to the lower set of such thread-guiding hooks illustrated at the right in Fig. 1. Between these two sets of hooks the looper-threads pass over the rotary take-up at the right in Fig. 1 between the flange plates 800 and 801 thereof.

It will suffice to describe in detail one of the above-mentioned four sets of thread-guiding hooks of the present invention, to wit, that at the left-hand side of Fig. 1, and illustrated more in detail in Figs. 2 and 4. Of this series there are four hooks 672, one for each of the needle-threads, and a fifth hook 673 for the cross-thread. A plate 675 coöperates with cross-thread hook 673. As clearly shown in Fig. 2, the point of each hook projects into a groove or recess in the back of its coöperating hook or plate, sufficient clearance being allowed between the adjacent surfaces to permit a thread to be passed inward to a position beneath the hook without actually threading it through the eye formed by the hook. The relationship of the point of the hook and its groove, however, prevents the thread from becoming disengaged from the hook by movement in a reverse direction. A construction is thus provided which offers great facility in threading the machine, while at the same time effectually avoiding accidental displacement of the thread during the rapid operation of the mechanism. The series of hooks and plate are mounted in proper relationship by securing their shanks (in any suitable way, as by soldering) in parallel grooves or recesses in a block 676, which latter is in turn secured to the bridge 651 of the framework by a screw 677, Fig. 1.

The upper set of thread-guiding hooks 671, in Fig. 3, is similar to the lower set described above in detail, except that the

shanks of the series of hooks and plates, instead of being secured in parallel grooves or recesses in a block (such as 676) are secured in any suitable manner, as for example by soldering, in notches or recesses in the under edge of the base-plate of bracket 650, the ends of the shanks being beveled off flush with the end surface of said base-plate.

The upper and lower sets of thread-guiding hooks for the four looper-threads, one of which sets 686 is at the right in Fig. 1, each includes four hooks and a plate similar to hooks 672 and plate 675 heretofore described.

What I claim is:

1. A thread-guide having a plurality of hooks, the point of one of said hooks projecting into a groove or recess in an adjacent hook, whereby thread may pass said hook-point when moved in one direction but will be caught by the hook-point when moved in the reverse direction, and means for supporting the parts in proper relationship.

2. A thread-guide having a plurality of hooks, the point of each hook projecting into a longitudinal groove or recess in the back

of an adjacent hook, and means for supporting the parts in proper relationship.

3. A thread-guide having a plurality of hooks, the point of each of one or more of the hooks projecting into a groove or recess in an adjacent hook, with the point of said hook entering said groove to a depth beyond the surface of the hook at the sides of the groove, and means for supporting the parts in proper relationship.

4. A thread-guide having a plurality of hooks, the point of each of one or more of the hooks projecting into a groove or recess in an adjacent hook, with the point of said hook entering said groove to a depth beyond the surface of the hook at the sides of the groove, but clear of the bottom wall of the groove, and means for supporting the parts in proper relationship.

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

ARTHUR A. MERRITT.

Witnesses:

H. A. W. HAYWARD,
BURTON V. MORSE.