

(No Model.)

C. H. WILLCOX.
NEEDLE THREADER FOR SEWING MACHINES.

No. 571,818.

Patented Nov. 24, 1896.

Fig. 1.

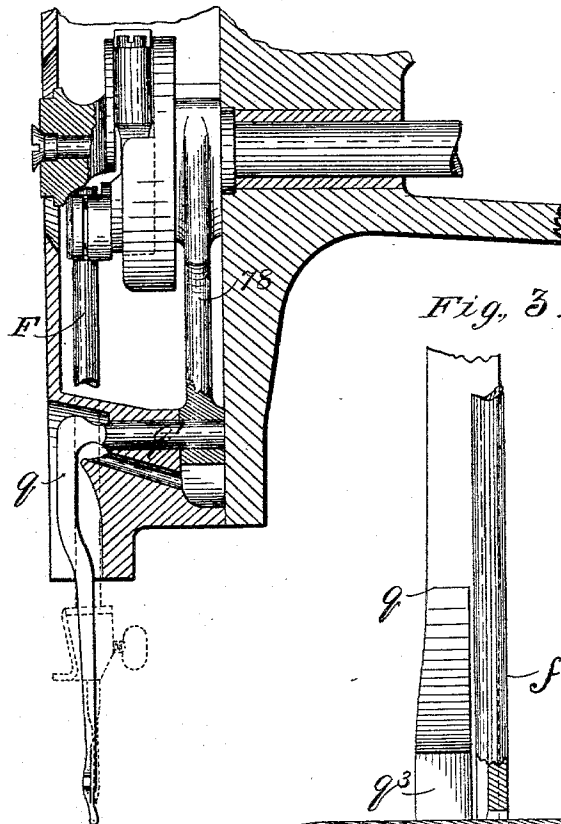


Fig. 2.

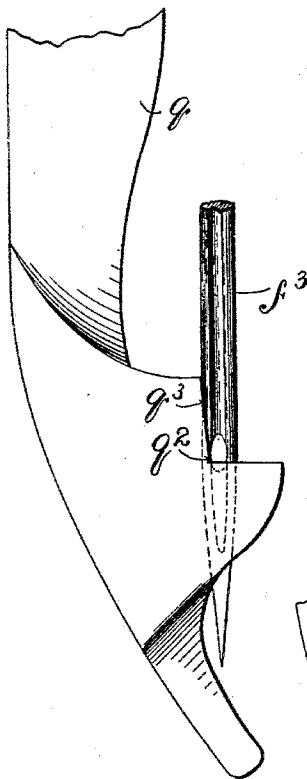


Fig. 3.

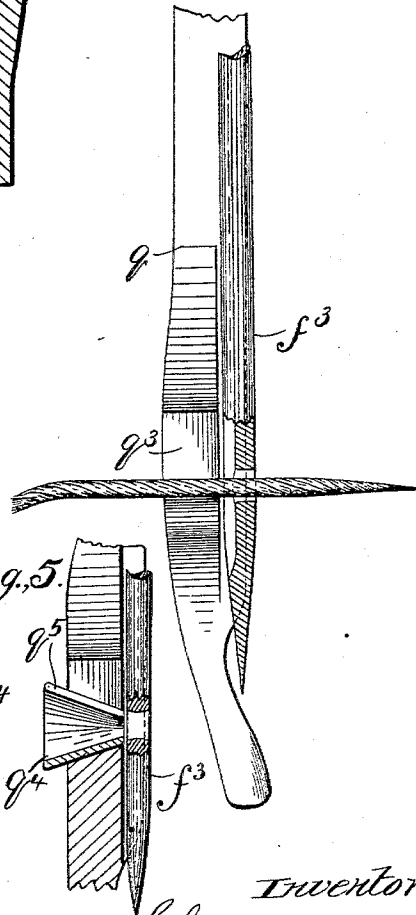


Fig. 4.

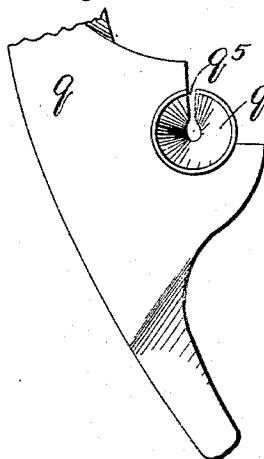
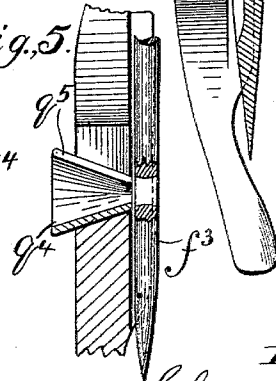


Fig. 5.



Witnesses.
W. Reis Edsler.
J. E. V. L. L.

Inventor
Charles H. Willcox.
by J. E. V. L. L.
his attorney.

UNITED STATES PATENT OFFICE.

CHARLES H. WILLCOX, OF NEW YORK, N. Y., ASSIGNOR TO THE WILLCOX & GIBBS SEWING MACHINE COMPANY, OF SAME PLACE.

NEEDLE-THREADER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 571,818, dated November 24, 1896.

Application filed August 10, 1895. Serial No. 558,853. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. WILLCOX, of New York, N. Y., have invented a new and useful Improvement in Needle-Threaders for Sewing-Machines, which improvements are fully set forth in the following specification.

This invention has reference to means for facilitating the insertion of the thread into and through the eye of a sewing-machine needle, such devices being commonly known as "needle-threaders."

Heretofore a needle-threader has been devised which consists of an arm hinged to the presser-bar or presser-foot in such relation to the needle that it can be turned on its hinge when it is desired to thread the needle, bringing a thread notch or guide into line with the needle-eye, whereby the thread is guided through the latter.

Inasmuch as the use of the threader is only required occasionally and at long intervals its presence on the machine at other times is of no benefit. Moreover, a threader of the type referred to must be moved by hand into position for use in threading the needle and afterward moved back to its normal position.

The present invention is an improvement upon the device above referred to in that it requires no separate part to be made and attached to the machine, and does not require to be moved by hand into operative position when the needle is to be threaded.

The present invention is applicable to sewing-machines having a thread-shield (or "needle-finger," as it is sometimes called) which vibrates across the path of the needle, placing itself under the point thereof as the latter rises and withdrawing itself as the needle descends. A device of this character is described in Letters Patent No. 334,589, dated December 21, 1886, granted to the Willcox & Gibbs Sewing Machine Company as assignee of C. H. Willcox and J. E. A. Gibbs. According to the present invention the needle-threader is a part of this vibrating finger, being formed by a small lug projecting from the side of the finger and provided with a thread notch or guide which, as the finger vibrates, comes into line with the axis of the needle-eye at the time when the needle is in its highest position, which is the position most con-

venient for threading. The construction of this threader adds only a trifling amount to the cost of making the thread-shield, and it is always in position at the time its service is required.

In the accompanying drawings, forming part of this specification, Figure 1 is a view, partly in front elevation and partly in section, showing the needle, the thread-shield, and the driving mechanism for the latter. Fig. 2 is a side elevation, on an enlarged scale, showing the relative positions of the needle and threader when the former is in its elevated position. Fig. 3 is a detail in front elevation on an enlarged scale. Figs. 4 and 5 are details in side and front elevation, illustrating a modification.

The thread-shield q , as shown, is carried by a short shaft q' , having a bearing in the head 1 of a sewing-machine and oscillated from an eccentric on the main shaft through an arm 78, attached to said shaft and having at its upper end a yoke embracing said eccentric; but the thread-shield may be supported and operated in any suitable way, as, for example, by the means described in the patent above referred to.

The needle-bar F , carrying a needle f^3 , may be vibrated by any mechanism such as usually employed. In the customary operation of these parts the thread-shield moves toward the needle, placing its end under the point thereof as the latter rises and withdrawing it when the needle descends, thus preventing the thread from impaling itself on the point of the needle.

The threader is formed by a small lug or projection q^2 on the side of the thread-shield, provided with a square notch q^3 , the angle formed by the meeting of the horizontal and vertical sides of this notch constituting the thread-guide. The position of this guide relatively to the needle is such that when the needle is in its highest position (indicated in the drawings) the motion of the thread-shield will have brought said guide into line with the axis of the needle-eye. In this position the thread being laid in the notch the latter guides its end through the needle-eye.

The thread-guide may be formed in various ways. As shown in Figs. 4 and 5, it consists

of a conical guide q^4 set into or attached to thread-shield q in proper relation to the eye of the needle. A cut or thread-exit q^5 is provided, so that the thread can slip out of the
5 conical guide after the needle is threaded.

Having now particularly described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine, the combination
15 with the needle, of a vibrating finger in proximity thereto and provided with a needle-threader and actuating mechanism for vibrating said finger, substantially as described.

2. In a sewing-machine, the combination
15 with the needle and its driving mechanism, of a vibratory finger provided with a thread guide or notch which is in line with the axis of the needle-eye when the needle is at or

near its highest point and means for vibrating said finger, substantially as described. 20

3. In a sewing-machine, the combination with the needle and its driving mechanism, of a vibratory finger having on one side a projection provided with a thread guide or notch which is in line with the needle-eye 25 when the needle is at or near its highest point and means for vibrating said finger, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscrib- 30
ing witnesses.

CHAS. H. WILLCOX.

Witnesses:

J. PARMLY,
S. BORTON.