

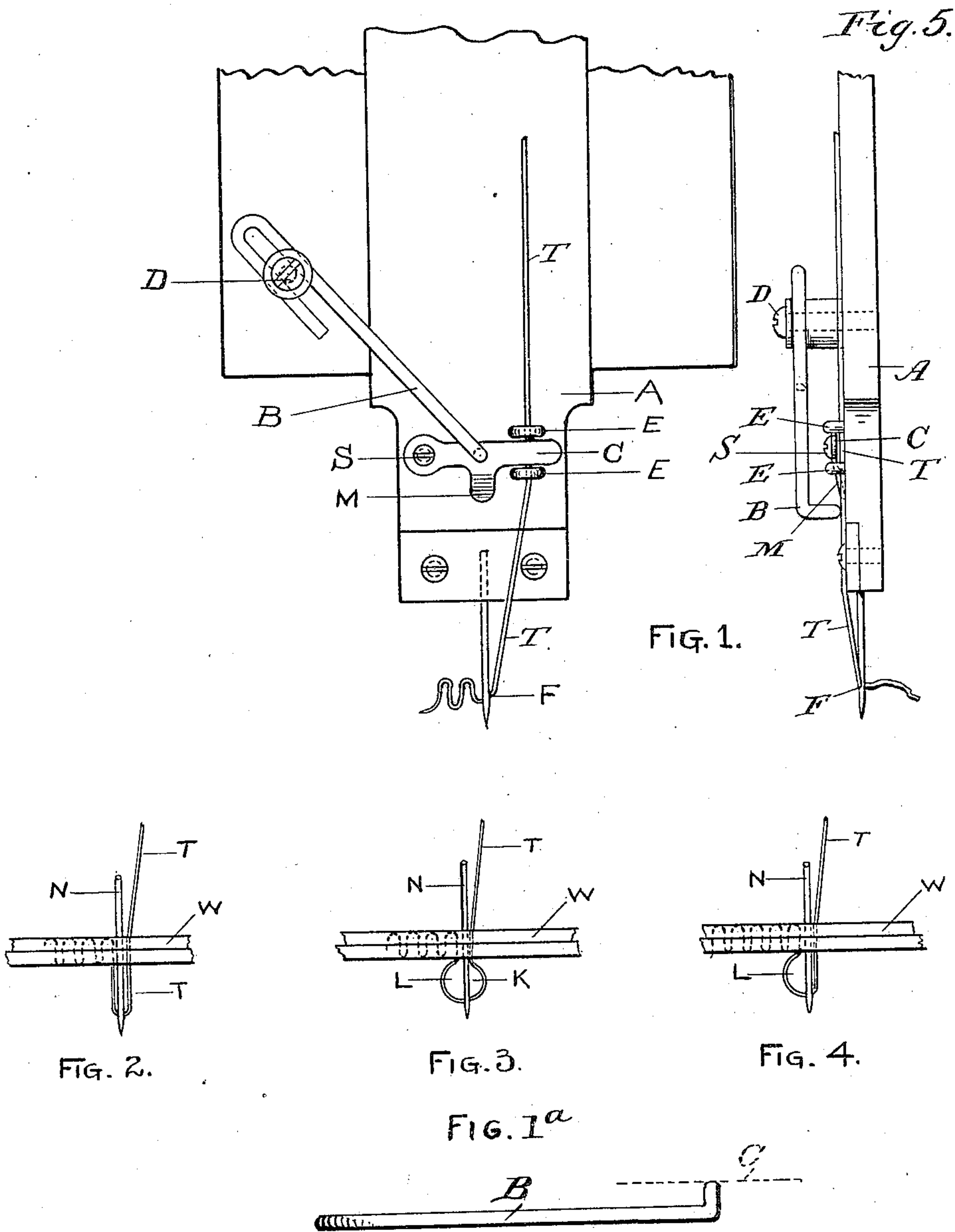
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PATENTED JUNE 5, 1906.

C. V. BAUER.

THREAD CONTROLLING DEVICE FOR SEWING MACHINES.

APPLICATION FILED JUNE 17, 1903.



WITNESSES
C. A. J. Harris
J. B. McCormick

Charles V. Bauer
 INVENTOR
 BY *Pierce Butler*
 ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES V. BAUER, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE
BAUER MACHINE COMPANY, A CORPORATION.

THREAD-CONTROLLING DEVICE FOR SEWING-MACHINES.

No. 822,337.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES V. BAUER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Thread-Controlling Devices for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to overcome a common objection existing in sewing-machines of this class, which is the occasional failure of the shuttle to pass through the loop made by the thread of the needle, thereby failing to make a lock-stitch. The cause of this failure and the method of overcoming it is illustrated in Figures 2, 3, and 4, in each of which views W is the material to be sewed, N is the needle of the machine, T is the thread passing through the needle. Hereinafter in this specification the thread having been used in the material to be sewed up to the eye of the needle will be referred to as the "thread on the back side of the needle." The portion of the thread from the eye of the needle to the spool will be referred to as the "thread on the front side of the needle."

Fig. 1 is a front view of the upper head of a sewing-machine with the needle-bar A and my device for taking up the superfluous loop. Fig. 1^a is a top view of the striker-arm. Fig. 2 shows the relative position of the needle and thread to the work at the extreme downward throw of the needle. Fig. 3 shows the relative position of the needle and thread to the work after the needle has been withdrawn sufficiently to form a loop L for the shuttle to pass through and showing the superfluous loop K, the prevention of which is the object of my invention. Fig. 4 shows the relative position of the needle and thread to the work after the needle has been withdrawn sufficiently to form a loop for the shuttle to pass through and showing the thread on the front side of the needle taken up to avoid the formation of the superfluous loop K. Fig. 5 is a side view showing the thread-clamp disengaged from the striker-arm and out of contact with the thread.

This loop K frequently becomes thrown over so as to interfere with the loop L and either throws it out of position or becomes twisted in such a manner that the shuttle fails to pass through the loop L, and the nee-

dle in its upward passage takes both loops through the work, thereby causing a failure in the stitch.

It can be seen that the loop K is formed by the upper portion of the thread remaining stationary in the work while the needle is withdrawing from the work, the surplus thread carried through by the needle assuming a position to form the loop K.

It is the object of my invention to overcome the formation of this superfluous loop K, and thereby avoid the cause of failure to properly form a lock-stitch. This I accomplish by mechanism hereinafter described, the same causing the thread on the forward side of the needle to be withdrawn with the needle during a determined portion of the upward movement of the needle and to be released at a desired point.

In Fig. 1, A is the reciprocating bar of the sewing-machine operating the needle, which is attached to said bar by suitable means. E E are lugs attached to the bar A and having eyes or holes through them through which the thread passes. C is a clamp or spring plate extending between the lugs E E and beneath which the thread passes. S is the screw, by means of which the clamp C is attached to the bar A. M is an extension of the clamp C, bent slightly at an incline or beveled to allow the striker-arm B to slide upon and press the clamp C against the needle-bar A. B is a striker-arm adjustably attached to the stationary head of the machine in which the reciprocating bar A operates. D is a screw attaching the striker-arm B to the stationary head of the machine and by means of which the striker-arm may be adjusted to different positions and held rigid after being adjusted. The upper end of the arm is formed as a loop having parallel sides, and the clamp-screw D passes through the same. The other or free end of said arm is bent inward (see Fig. 1^a) and bears and is adapted to slide upon the clamp C, transversely thereof at the middle point, where the clamp is broadened by its downward extension. F is the eye of the needle.

In Fig. 1 the needle-bar A is shown in a position at the end of the downward stroke. The clamp C having passed under the striker-arm B and being pressed close to the bar A thereby holds or clamps that portion of the thread between the lugs E E firmly against the bar

A. When the bar A begins its return or upward movement, that portion of the thread between the clamp C and the needle-eye F will move with the bar A and the needle so long as the clamp C continues to hold the thread and will thereby take up the thread usually allowed to form the loop K, Fig. 3. As the bar A passes upward, carrying with it the attached clamp C, it withdraws the clamp C from under, and thus out of contact with, the striker-arm B, and when the clamp C has passed from beneath the arm B its hold upon the thread is released, and the thread may pass freely through the eyes E. The bar A remains at rest while the shuttle is passing through the loop formed by the slack of the thread. The clamp C, lug M, and striker-bar B are so shaped relatively to each other as to accomplish the results described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the stationary head of the sewing-machine, of the striker-arm having one end formed as an elongated loop, a clamp-screw passing through the loop and serving to support the arm in any required adjustment, the thread-clamp C, secured at one end of the reciprocating needle-bar, and guides between which its free end projects, the free end of said striker-arm pressing upon the thread-clamp and adapted to slide on or off the same, substantially as described.

2. In a sewing-machine the combination of a needle-bar, means for holding and guiding the same which leaves exposed a portion of the face of the needle-bar, a spring thread-clamp secured to the needle-bar and having its spring action away from the bar and away from the thread, means for guiding the thread between the face of the needle-bar and the free portion of the clamp, and a

striker-arm attached to the frame of the machine and having its end constructed and arranged in the path of the clamp to force the same periodically against the thread as the needle-bar descends, substantially as and for the purposes described.

3. In a sewing-machine the combination of a needle-bar, means for holding and guiding the same arranged to leave exposed a portion of the face of the needle-bar, a spring thread-clamp secured to the needle-bar and having its spring action away from the bar and away from the thread, means for guiding the thread between the face of the bar and the free portion of the clamp, and a striker-arm attached to the frame of the machine and having its end constructed and arranged in the path of the clamp to force the same periodically against the thread as the needle-bar descends, the striker-arm having its operative end vertically adjustable along the path of the clamp, substantially as and for the purposes described.

4. In a sewing-machine the combination of a needle-bar, means for holding and guiding the same, a spring thread-clamp secured to the needle-bar and having its spring action away from the needle-bar and away from the thread, means for guiding the thread under the free portion of the clamp, and a striker-arm attached to the frame of the machine and having a portion which is constructed and arranged in the path of the clamp to force the same periodically against the thread to hold the latter, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES V. BAUER.

Witnesses:

C. H. SHEILD,

J. B. McCORMICK.