H. R. TRACY.

TENSION DEVICE FOR SEWING MACHINE LOOP TAKERS.

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1,129,922. Patented Mar. 2, 1915.

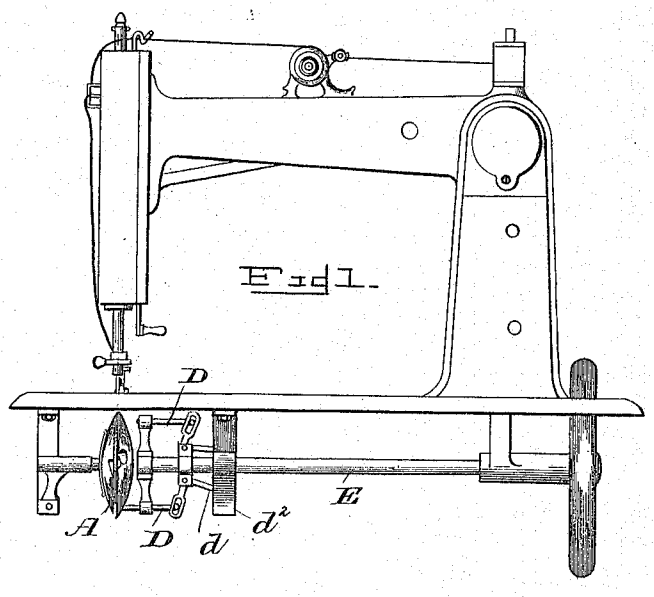


Fig 1.

Fig 2.

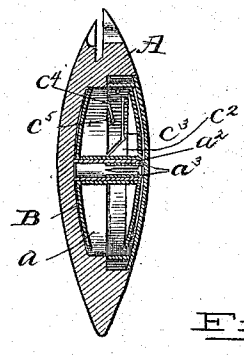


Fig 3.

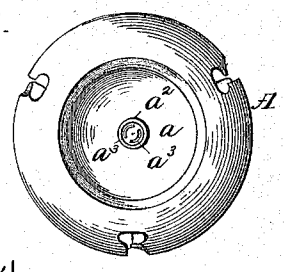


Fig 4.

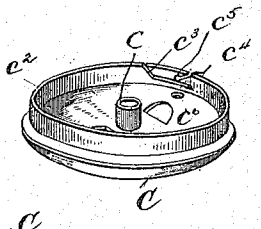
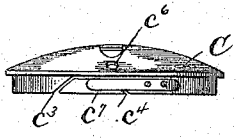


Fig 5.



Witnesses

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UNITED STATES PATENT OFFICE.

HARRIET RUTH TRACY, OF NEW BRIGHTON, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JEREMIAH EVARTS TRACY, OF PLAINFIELD, NEW JERSEY.

TENSION DEVICE FOR SEWING-MACHINE LOOP-TAKERS.

1,129,922. Specification of Letters Patent. Patented Mar. 2, 1915.

Application filed February 8, 1893. Serial No. 461,459.

To all whom it may concern:

Be it known that I, HARRIET RUTH TRACY, a citizen of the United States, residing at New Brighton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Tension Devices for Sewing-Machine Loop-Takers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to sewing machines, and, particularly, to that class of these machines in which the needle-thread is engaged by a loop-taker and passed around the same to inclose a second thread carried by the loop-taker to form a lock stitch.

The object of the invention is to produce a tension device for the thread carried by the loop-taker, which shall be of such construction as to impose a certain, even, and uniform tension upon the thread and to insure a perfect, even and uniform feed during the starting, stopping, or at any speed at which the machine is run during its operation.

With these objects in view, the invention consists essentially in a loop-taker comprising a shell or casing, a bobbin or spool located in the shell and capable of revolving, and a cap or cover forming one side of the opening in which the bobbin or spool is confined, the cap or cover being provided with slots for the introduction of the thread, and with a hole through which the thread passes, the shell of the loop-taker and the bobbin or spool being capable of independent rotation, and the cap or cover being held against rotation by the thread passing through the opening therein.

The invention is illustrated in the accompanying drawings in which:

Figure 1— is a side elevation of a sewing machine, having my invention embodied therein; Fig. 2— is a vertical sectional view of a loop-taker constructed in accordance with my invention; Fig. 3— is a detail view of the shell; Fig. 4— is a perspective view of the cap or cover removed; and Fig. 5— is a side elevation of the same.

In these drawings, A represents the shell of the loop-taker which, in the form here illustrated, is provided with three opposing hooks for successively engaging the loop of the needle-thread. The shell A is provided with an opening or chamber a, for the reception of a spool or bobbin B which is mounted upon a central hollow projection a^2, extending into the opening. Within the hollow projection a^2 are arranged two spring fingers a^3, a^3, which in cross section are segmental for use in attaching the shell or cover C. This shell or cover C has a central hollow projection c of a size to enter the hollow projection a^2 of the shell. The spring fingers a^3 a^3 bear against the projection c carried by the cover C and serve to retain the same in place by frictional contact. The shell or cover has an inner flange c^2 which is provided with two slots c^3 and c^4, the slot c^3 being cut from the free edge of the flange toward the face of the cover and for a distance along the flange in the general direction of the face and the slot c^4 is also cut from the same edge toward said face and has an enlarged rounded end c^5 between the portion of slot c^3 which runs contiguous to the face, and the edge of the flange. This enlarged end is arranged in line with an opening c^6 in the face of the cover, and the thread carried by the loop-taker passes through this opening as it is used. Attached to the outside of the rim c^2 is a spring finger c^7 which covers the space between the slots c^3 and c^4.

In threading the device, the free end of the thread is first passed through the hole c^6 and then a loop is formed. The limb of the loop leading back from the hole c^6 is drawn into the slot c^3 and between the spring finger c^7 and the face of the rim c^2. The limb of the loop leading from the bobbin is then drawn through the slot c^4 until it reaches the rounded opening c^5 in the end thereof, so that as the thread is used it passes from the bobbin or spool carried in the loop-taker through the opening c^5, between the outer face of the rim c^2, and the spring c^7 back through the slot c^3 and then out through the opening c^6. The loop formed, in conjunction with the spring finger which presses against it, serves to create an adequate tension on the thread in drawing the latter out. From this arrangement, it will be seen that when the parts are in place, and so formed that the shell A and the bobbin B are capable of independent rotation; the necessary

operation of the device is permitted and a steady, uniform pressure imposed upon the thread as it is fed which in coöperation with this loop, thereby prevents uneven feeding or entanglement. It will also be clear that the thread, by reason of its passing from the loop-taker through the hole c^6, is always delivered from one point, and, therefore, uniformity in operation is insured.

In the present illustration of the invention, the loop-taker is shown as driven by pins D, attached to the driving-shaft E of the machine, and these pins are projected and withdrawn to allow the thread to pass around the loop-taker by means of levers d, the ends whereof move in a cam groove in a block d^2 attached to the bed-plate of the machine.

Having thus fully described my invention, what I claim as new and desire to secure by Letters-Patent is:—

1. A rotary loop-taker having a chamber therein for the reception of a spool or bobbin; a cap or cover closing one side of said chamber and provided with a flange projecting into said chamber and having slots, one cut from its edge toward the face of the cap and along said flange for a distance, and the other cut from the same edge toward the said face and terminating in an enlarged rounded end between the second portion of said first slot and the edge of said flange, said cap or cover also having a thread opening in its face in line with said rounded end; the loop-taker and the spool or bobbin being capable of independent rotation, and the cap or cover being held against rotation by the thread being passed through the thread opening; the relation of the slots and thread opening being such that the thread in its passage forms a loop, thereby producing tension.

2. A rotary loop-taker having a chamber therein for the reception of a spool or bobbin; a cap or cover closing one side of said chamber and provided with a flange projecting into said chamber and having slots, one cut from its edge toward the face of the cap and along said flange, and the other cut from the same edge toward the said face and terminating in an enlarged rounded end between the second portion of said first slot and the edge of said flange, said cap or cover also having a thread opening in its face in line with said rounded end; and a spring finger secured to the outer portion of the flange, covering the space between said slots; the loop-taker and the spool or bobbin being capable of independent rotation, and the cap or cover being held against rotation by the thread being passed through the thread opening; the relation of the slots, spring-finger, and thread opening being such that the thread in its passage forms a loop; the engagement of which loop by the edges of the slots and the spring-finger produces tension.

3. An under thread carrying device provided with a cap or cover for closing the same, and provided with a flange having slots, one cut from its edge toward the face of the cap and along said flange, and the other cut from the same edge toward the said face and terminating in an enlarged rounded end between the second portion of said first slot and the edge of said flange; the cap or cover having a thread opening in its face in line with said rounded end; the organization of said slots and thread opening being effective to apply tension to a loop of the thread traversing said slots and opening.

4. A rotary loop-taker having a chamber therein for the reception of a spool or bobbin; a cap or cover closing one side of said chamber, and provided with a flange projecting into said chamber and having slots, one cut from its edge toward the face of the cap and along said flange, and the other cut from the same edge toward the said face and terminating in an enlarged rounded end between the second portion of said first slot and the edge of said flange, both of said slots lying wholly within said chamber; said cap or cover also having a thread opening in its face in line with said rounded end; and a spring finger secured to the outer portion of the flange and covering the space between said slots; the loop-taker and the spool or bobbin being capable of independent rotation, and the cap or cover being held against rotation by the thread passing through the thread opening; the organization of the slots, spring finger, and thread opening being such that the thread in its passage forms a loop; the engagement of which loop by the edges of the slots and the spring finger produces tension.

5. A rotary loop-taker having a chamber opening into one side thereof for the reception of a spool or bobbin; a closure for the chamber, an inwardly projecting flange provided with two slots cut from its edge toward the face of the closure, the closure having a thread opening in its face, the loop-taker and the spool or bobbin being capable of independent rotation, and the closure being held against rotation by the thread being passed through the thread opening; the relation of the slots and thread opening being such that the thread in its passage forms a loop, thereby producing tension.

6. A rotary loop-taker having an open chamber for the reception of a spool or bobbin; a cap or cover for closing said chamber, provided with an inwardly projecting flange having slots cut from its edge toward the face of the cap, the cap or cover also having a thread opening in its face in line with the end of one of said slots, and a spring finger secured to the outer portion of the flange

and covering the space between said slots, the loop-taker and the spool or bobbin being capable of independent rotation, and the cap or cover being held against rotation by the thread being passed through the thread opening, the relation of the slots, spring finger, and thread opening being such that the thread in its passage forms a loop, the engagement of which loop by the edges of the slots and the spring finger producing tension.

7. A rotary loop-taker having a chamber therein for the reception of a spool or bobbin, a cap or cover closing said chamber, provided with a flange projecting into said chamber and having slots cut from its edge toward the face of the cap, both of said slots lying wholly within said chamber, the cap or cover also having a thread opening in its face in line with the end of one of the slots, and a spring finger secured to the outer portion of the flange, and covering the space between said slots; the loop-taker and the spool or bobbin being capable of independent rotation, and the cap or cover being held against rotation by the thread passing through the thread opening, the relation of the slots, spring finger, and thread opening being such that the thread in its passage forms a loop, the engagement of which loop by the edges of the slots and the spring finger producing tension.

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

HARRIET RUTH TRACY.

Witnesses:

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