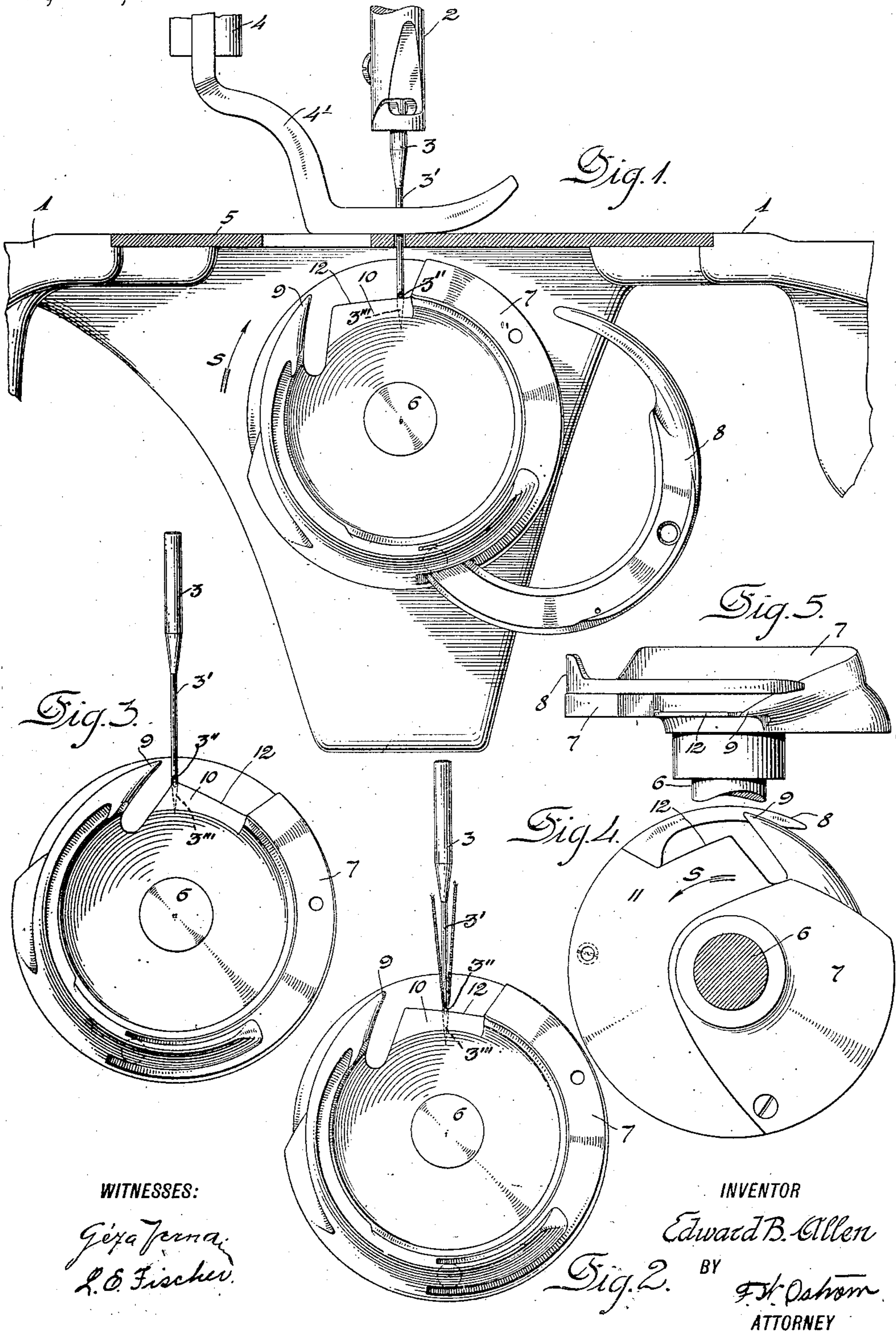


E. B. ALLEN.
SEWING MACHINE.
APPLICATION FILED JULY 19, 1912.

1,155,120.

Patented Sept. 28, 1915.



WITNESSES:

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SEWING-MACHINE.

1,155,120.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed July 19, 1912. Serial No. 710,446.

To all whom it may concern:

Be it known that I, EDWARD B. ALLEN, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in sewing machines, and has for its object to provide the stitch-forming mechanism with a rotary loop-taker equipped with a guard which acts to protect the loop-seizing point
15 of said loop-taker from contacting with the thread-carrying needle at substantially the time when the latter is presenting its loop of needle thread to the action of said loop-taker, the free edge of the guard being
20 arranged with respect to the periphery of the loop-taker, so that during the time the guard is in position to protect the needle said edge will maintain a uniform relationship with respect to the needle eye during
25 the time that the guard is passing said needle and the eye of the latter is within the are described by the loop seizing point of the loop-taker.

As is well understood, the needle guard is
30 effective only at such time as the needle is deflected from its normal line of action, and it is important that the guard should not contact with the needle at a point to interfere with the travel of the thread, and to
35 insure that the needle when deflected will be controlled by the guard to spring it back to loop-presenting position, it is essential that the point of contact be below but in
40 close proximity to the upper wall of the needle eye, as below the eye the needles vary in length and diameter, dependent upon whether a long or short point needle is employed.

The invention is shown as applied to a
45 Singer 12w class machine, but as it relates only to the construction and application of the rotary loop-taker, only such reference will be made to the other elements of the sewing as is deemed necessary for a proper
50 understanding of its application.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a view in front end elevation of
55 a sewing machine bed-plate or frame in

which the improved rotary loop-taker is mounted, the gib for retaining the bobbin-case being shown out of its effective position and the needle and its guard in their effective relationship at the time the needle
60 occupies its initial position with respect to the straight edge of the guard, together with the cloth-presser and the lower end portions of the needle and cloth-presser carrying
65 bars. Fig. 2 is a view of the loop-taker similar to Fig. 1, the gib for retaining the bobbin-case being omitted and the hook advanced in its rotation, bringing the eye of the needle substantially central between the
70 two ends of the straight edge of the guard, the needle being provided with a short length of thread to better illustrate the relative action of the needle and guard. Fig. 3
75 is a view of the loop-taker similar to Fig. 2, except that the loop-taker is advanced in its rotation nearly to its loop-seizing position, or in position to show the operative relationship of the needle and guard at substantially the time they complete their effective
80 relationship. Figs. 4 and 5 are rear side and edge views, respectively, of the loop-taker shown in Fig. 1, except that the bobbin-case retaining gib is secured in its effective position.

Referring to the figures, 1 represents the
85 bed-plate or frame of the sewing machine, 2 the needle-carrying bar provided with the thread-carrying needle comprising the usual needle shank 3, blade 3', needle eye 3'' and beveled piercing point 3''' the latter shown
90 in dotted lines only, 4 the presser-carrying bar provided with the cloth-presser 4', 5 the needle or cloth plate, and 6 the loop-taker-driving shaft provided with the improved rotary loop-taker 7.

The present construction of rotary loop-taker, when equipped for forming stitches, is provided with one form of commonly employed bobbin-case and bobbin not shown, as such elements are deemed unimportant
100 to an understanding of the invention.

8 represents the bobbin-case-retaining gib, 9 the loop-seizing point of the loop-taker, and 10 the loop-taker guard formed integral with said loop-taker, the effective surface
105 11 of which extends in the direction indicated by the arrow a distance sufficient to be in effective relationship with the needle-blade from the time that the latter reverses its movement below the material until in po-
110

sition to present the thread loop to the action of the loop-taker, the vertical movements of said needle being in a plane located at the rear of said loop-taker guard.

5 12 represents the free edge of the guard positioned with respect to the periphery of the loop-taker so that during the time the guard is in position to protect the needle said edge will maintain substantially the
10 same relationship with respect to the needle eye during the time that the guard is passing said needle and the eye of the latter is within the arc described by the loop-seizing point of the loop-taker.

15 I claim:—

In a stitch-forming mechanism for sewing machines, the combination with an eye-pointed needle, a loop-taker provided with

a loop-seizing point, and means for actuating said needle, and loop-taker, of a needle- 20 guard carried by said loop-taker and provided with a free edge located with respect to said loop-seizing point to maintain a substantially uniform relationship with the needle-blade to a point directly above its 25 beveled piercing portion during the time that said guard is passing said needle and the eye of the latter is within the arc described by said loop-seizing point.

In testimony whereof, I have signed my 30 name to this specification, in the presence of two subscribing witnesses.

EDWARD B. ALLEN.

Witnesses:

WM. H. COLES,
ABBIE M. DONIKEE.