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G. A. FLECKENSTEIN

2,138,760

SEWING MACHINE

Filed June 4, 1937

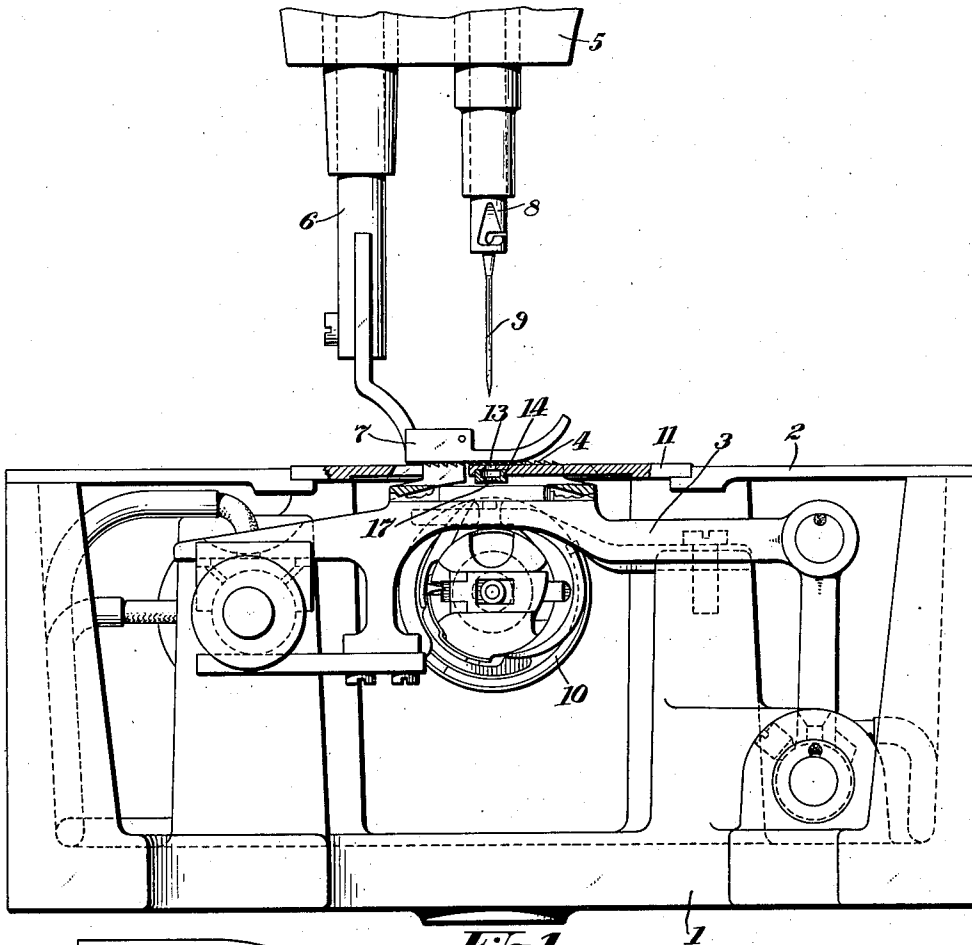


Fig. 1.

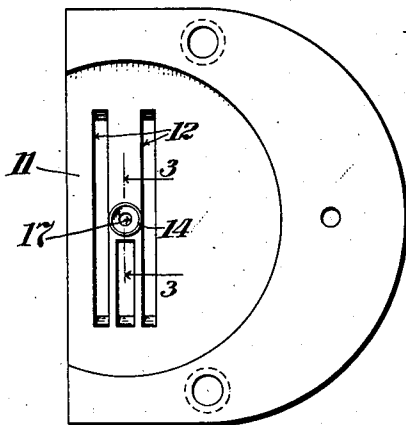


Fig. 2.

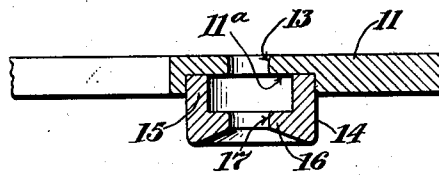


Fig. 3.

Witness:

John H. Cave

Inventor
George A. Fleckenstein

By

Henry J. Miller

Attorney

UNITED STATES PATENT OFFICE

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SEWING MACHINE

George A. Fleckenstein, Stratford, Conn., assignor
to The Singer Manufacturing Company, Elizabeth,
N. J., a corporation of New Jersey

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8 Claims. (Cl. 112—260)

This invention relates to sewing machines and more particularly to lock-stitch sewing machines in which the needle-loop is seized by the loop-taker and passed around the lower thread mass.

5 The primary object of this invention is to provide means to overcome "looping" characterized by the projection from one face of the stitched work of loose loops of needle-thread which may occur at intervals when the sewing machine is
10 operating at high speed.

The several features of the present invention will be clearly understood from the following description and accompanying drawing in which:

15 Figure 1 is an end elevation of a portion of a sewing machine showing the stitch-forming, feeding mechanism and throat-plate and having my invention embodied therein.

Figure 2 is a bottom plan view of the throat-plate.

20 Figure 3 is an enlarged section taken along the line 3—3 of Figure 2.

In the embodiment of the invention selected for illustration, 1 represents the bed of the machine carrying the cloth-plate 2 and beneath
25 which is located a feed-bar 3 carrying a feed-dog 4. Located above the cloth-plate and journaled in the usual hollow head 5 is a presser-bar 6 carrying a presser-foot 7 which cooperates with the feed-dog 4 to advance the material. Also
30 journaled in the hollow head is the usual needle-bar 8 carrying an eye-pointed needle 9 which in the formation of lock-stitches cooperates with a loop-taker 10, in the present case, of the rotary hook lock-stitch type. Carried by the cloth-plate
35 2 is a throat-plate 11 formed with the usual feed-dog slots 12 and needle-aperture 13. The above mechanism is fully disclosed and described in the co-pending application of George A. Fleckenstein and Max L. Waterman, Serial No. 27,300
40 which was filed on June 19, 1935, and further description of the stitch-forming and feeding mechanism is deemed unnecessary.

In a rotary hook type of stitch-forming mechanism the needle-thread loop is twisted as it is
45 passed about the lower thread mass and when this twisted loop is cast off by the rotary hook it has a tendency to curl or kink. When the take-up draws up the twisted thread-loop there is a tendency, at extremely high speeds of operation of
50 the machine, to "steal" an excess of thread from the supply so that in the final setting of the stitches the take-up is unable to draw up the complete loop. This results in the information on the under side of the work of the objectionable
55 loops herein referred to.

To minimize the looping of the needle-thread, the throat-plate is formed on its under side with an angular recess 11^a disposed directly below and adjacent the throat-plate needle-aperture 13. Fitted in the recess 11^a is a cup-shaped body
5 or button 14 having an upstanding side wall 15 and a bottom wall 16 which is formed with an aperture 17 in vertical alignment with the needle-aperture 13 and thereby providing a clearance
10 recess between and adjacent said vertically spaced apertures. When the take-up (not shown) draws up the needle-thread loop which is cast off by the rotary hook 10, any kinks which may be present are reduced in size by the wall of the
15 lower aperture 17. If any reduced kink should pass through the aperture 17, the clearance recess between the apertures 17 and 13 permits a small kink to untwist about the bobbin-thread from the work limb side of the needle-thread loop
20 to the take-up limb side thereof and the reduced kink is finally ironed out as it passes through the needle-aperture 13 leaving the needle-thread free to be pulled up by the take-up in its final stitch-setting action.

Having thus set forth the nature of the invention, what I claim herein is:

1. A sewing machine throat-plate having upper and lower walls spaced from each other to provide a cavity therebetween, each of said walls being apertured to permit an eye-pointed sewing machine needle to pass therethrough.

2. A sewing machine throat-plate having a needle-aperture therein and a cup-shaped button carried by said throat-plate and having its bottom wall spaced from said throat-plate and its side wall defining an enlarged thread clearance recess, said bottom wall being provided with an aperture which is in vertical alignment with the aperture in the throat-plate.

3. A sewing machine having, in combination, 40 a reciprocating needle, a rotary hook cooperating therewith, a throat-plate having an aperture through which the needle descends and a wall located below the throat-plate and spaced vertically therefrom to provide an enlarged clearance recess, said wall being provided with a
45 needle-aperture in vertical alignment with the needle-aperture in the throat-plate.

4. A sewing machine having, in combination, 50 a reciprocating eye-pointed needle, a rotary hook cooperating with said needle to form stitches, a throat-plate formed with an aperture through which the needle descends and a cup-shaped member having an upstanding wall which is rigidly fixed to the under side of said throat-
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plate and defining a clearance recess larger than the aperture in the throat-plate and a bottom wall formed with an aperture which is in vertical alignment with the needle-aperture in the throat-plate.

5 5. A sewing machine having, in combination, a reciprocatory eye-pointed needle, a rotary hook cooperating with said needle to form stitches, a throat-plate formed with an aperture through which the needle descends and a cup-shaped member having an upstanding wall which is rigidly fixed to the under side of said throat-plate and a bottom wall formed with an aperture which is in vertical alignment with the needle-aperture in the throat-plate, said upstanding wall being offset laterally from the needle-apertures to provide a clearance recess.

10 6. A sewing machine having, in combination, a reciprocatory eye-pointed needle, a rotary hook cooperating with said needle to form lock-stitches, a throat-plate formed with an aperture through which the needle descends and a cup-shaped member having an annular upstanding

wall, said wall being offset laterally from the needle-aperture to provide a clearance recess and a bottom wall formed with an aperture which is in vertical alignment with the needle-aperture in the throat-plate.

5 7. A sewing machine having, in combination, a reciprocatory needle, a rotary hook cooperating with said needle to form stitches, a throat-plate formed with an aperture through which the needle descends, said throat-plate adjacent 10 and below said aperture being provided with a cup-shaped member having an upstanding wall which is fixed to the under side of said throat-plate and spaced laterally from the aperture in the throat-plate and a bottom wall formed 15 with an aperture which is in vertical alignment with the needle-aperture in the throat-plate.

8. A sewing machine throat-plate having a needle aperture enlarged between the opposite ends thereof to provide a clearance recess with- 20 in the throat-plate.

GEORGE A. FLECKENSTEIN.