O. F. HANSEN.

SEWING MACHINE.

APPLICATION FILED MAY 14, 1907.

1,134,528. Patented Apr. 6, 1915.

Fig. 1.

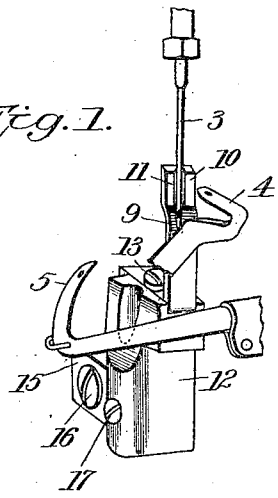


Fig. 3.

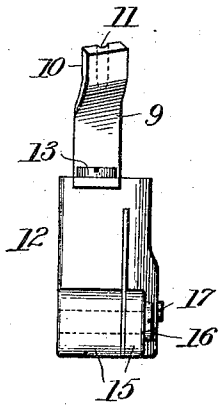


Fig. 2.

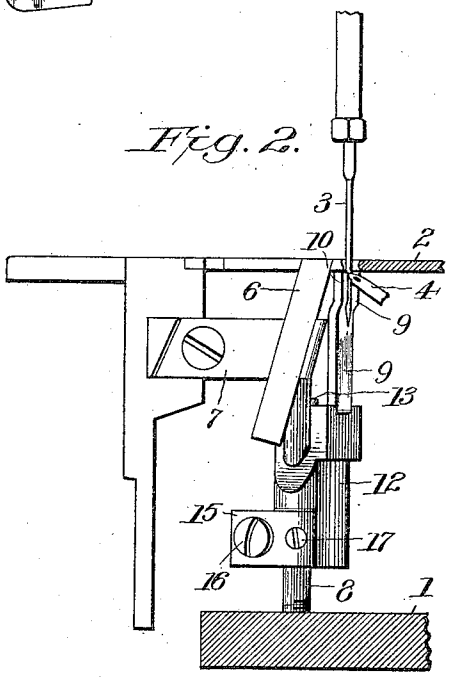


Fig. 4.

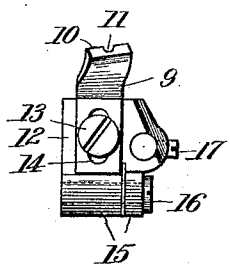
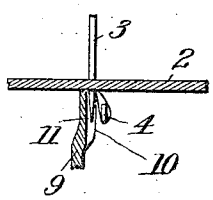


Fig. 5.



Witnesses

C. M. Walker.

Mary W. Hammer.

Inventor

Oscar F. Hansen

By

Sturtevant & Mason

Attorneys

UNITED STATES PATENT OFFICE.

OSCAR F. HANSEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SEWING-MACHINE.

1,134,528. Specification of Letters Patent. **Patented Apr. 6, 1915.**

Application filed May 14, 1907. Serial No. 373,536.

To all whom it may concern:

Be it known that I, OSCAR F. HANSEN, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a description, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon.

My invention relates to new and useful improvements in sewing machines and has for its object to provide a device or devices for protecting the needle loops so that the needle on its descent, will not enter its own loop.

The improvement is more especially adapted for use in connection with overseaming machines wherein a thread carrying looper enters the needle loop and a second thread carrying looper enters the loop of the first looper and moves to a position above the material for the needle to enter its loop. In this character of stitching mechanism, the needle loop is loose when the looper is being retracted therefrom and some times said needle loop, instead of being shed from the looper, will be carried back with said looper and the needle on its next descent, will enter its own previously formed loop, thus forming imperfect stitches. Wipers have been used to engage the needle loop upon the looper to cause it to be shed with certainty from the looper as shown in the application of Lansing Onderdonk, Serial No. 218,192, filed July 6, 1904. This invention is an improvement upon the construction shown and described in said application.

The invention consists in a device arranged relative to the needle so that the point of said needle is housed, or protected, as it passes the previous formed needle loops.

The invention consists further in a device for supporting the throat plate at a point adjacent to the needle slot.

The invention consists still further in the parts and arrangements hereinafter shown and described and set forth in the claims.

In the drawings, which show an embodiment of my invention, Figure 1 is a detail view showing the relation of the improved thread guard or loop protector to the needle and loopers. Fig. 2 is a sectional view showing the bed plate, the work support, the needle and the thread guard. Fig. 3 is a detail view showing the thread guard and its supporting arm in side elevation. Fig. 4 is a top plan view showing the thread guard and its supporting column. Fig. 5 is a detail sectional view showing the thread guard, the needle and the looper.

The bed plate 1, the work plate 2, the overhanging arm, the needle 3, carried by the needle bar reciprocating in the overhanging arm, are of the usual construction. Coöperating with said needle 3, is a thread carrying looper 4, which is pivoted beneath the work support and has suitable mechanism for giving thereto its oscillations. Cooperating with said looper 4 and needle 3, is a second thread carrying looper 5. Said needle and loopers are so arranged and timed that the needle, after passing through the work support, rises throwing out its loop, which is then entered by the thread carrying looper 4 and the thread carrying looper 5 passes through the loop of thread carried by the looper 4 and moves to a position above the work support for the needle on the next downward stroke to enter its loop. These parts in the manner of operation are of the usual construction and form no part of the present invention. Said machine is preferably provided with a trimming mechanism comprising an upper movable trimming member and a lower stationary member 6. Said stationary trimming member 6 is supported by an adjustable block 7. Rising from the bed plate 1, is a post 8, which engages the stationary trimmer support adjacent its forward end and serves to support said trimming member against the downward thrust of the cutting action of the movable trimming member.

In a stitch forming mechanism of the character above described, as the looper 4 recedes, the needle loop is free from strain and hangs loosely about said looper and therefore it often occurs that said needle loop is not properly shed from the looper, but is carried back into the path of the needle so that in its next descent, said needle will enter its own previously formed needle loop and thus form imperfect stitches.

The present invention relates to a thread

guard 9, which is located directly beneath the work support 2 and has a flat head 10 provided with a groove 11, which partially encircles the needle after said needle passes through the work support. Said thread guard 9 is screwed to a collar 12 by means of a screw 13. The shank of the thread guard 9 is slotted as at 14, so that said thread guard may be adjusted across the end of the collar 12, which supports the same. Said collar 12 is provided with a longitudinal bore, whereby said collar may be placed on the post 8, which supports the lower trimming member. It is obvious, however, that said collar or thread guard 9 may be supported in any other suitable manner. The collar 12 is provided with split wings 15 and a set screw 16, whereby said collar may be clamped to the post 8. Said collar is also provided with a set screw 17, which passes through said collar and engages the post 8.

It will be noted from the above description that the thread guard 9 may be adjusted angularly about the post 8 and the thread guard may also be adjusted vertically upon said post and transversely of its supporting collar. By these adjustments, the thread guard 9 may be brought up against the work support so as to form a support for the throat plate at a point adjacent the needle hole.

In order to adjust the collar 12 angularly, upon the supporting post 8, the set screws 16 and 17 are loosened. The collar is properly positioned, then the set screw 17 is tightened in order to hold the collar in place, after which the screw 16 is set, which tightly clamps the collar in its adjusted position. The screw 17 prevents angular movement of the collar due to pressure on the screw 16 when setting the same.

The operation of the device will be obvious from the above description. The needle enters the material, passes beneath the work support and rises to throw out its loop. The looper 4 passes through the loop and its loop is in turn engaged by the looper 5. The needle rises and descends again for the next succeeding stitch and the looper 4 recedes. If the loop of needle thread carried by the looper 4 is not properly shed, but is drawn back by said looper to a position adjacent the needle, as shown in Fig. 5, the needle in its descent will not engage said loop of thread for the reason that the needle point is housed within the groove 11 in the thread guard 9 and the thread is therefore protected from said needle. The thread guard 9 which partly houses the needle is also located close to the path of movement of the looper. Therefore, when the looper is retracted the needle loop carried thereby will be brought against the edge of this needle guard and forcibly stripped or shed from the looper. The thread guard 9 serves as a means for supporting the throat plate at a point adjacent the needle, as above noted. The thread guard will also further act as a means for guarding the needle thus properly positioning the needle for coöperation with the looper and also serve to cause the needle to throw out its loop on the proper side for the entrance of the looper.

It will be obvious that minor changes in the location of parts and details of construction may be made without departing from the spirit of my invention.

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

1. A sewing machine including in combination a work support, a needle, a threaded looper coöperating with the needle beneath the work support, a thread-engaging implement coöperating with the looper and with the needle above the work support, and means for housing the needle point beneath the work support while passing the threaded looper, said means also serving to insure the shedding of the needle loop from the looper.

2. A sewing machine including in combination a work support, a needle, a threaded looper coöperating with said needle beneath the work support, a thread-engaging implement coöperating with said threaded looper, and with the needle above the work support, and a thread guard located beneath the work support and having a groove in line with the needle hole whereby said guard partially encircles said needle and protects the point of the needle from engaging the needle loop on the looper while the needle point is passing the looper, said guard also serving to insure the shedding of the needle from the looper.

3. A sewing machine including in combination a work support, a needle, a threaded looper coöperating with said needle beneath the work support, a threaded looper adapted to enter the loop of the first named looper thread and coöperating with the needle above the work support, and means for housing the needle point beneath the work support while passing the threaded looper.

4. A sewing machine including in combination a work support, a needle, a looper coöperating therewith, a supporting member, a thread guard adjustably mounted on said supporting member and means for vertically adjusting said supporting member.

5. A sewing machine including in combination a bed plate, a work support, a supporting member carried by said bed-plate and a thread guard carried by said supporting member and engaging the work support at a point adjacent the needle opening.

6. A sewing machine including in combination a bed plate, a work support, a sup-

porting member carried by the bed plate, a thread guard adjustably mounted on said member and engaging said work support at a point adjacent said needle hole.

7. A sewing machine including in combination a bed plate, a work support, a trimming mechanism having a stationary trimming member, a post carried by the bed plate and engaging the free end of said stationary member, a needle, a looper coöperating therewith, a thread guard adjustably mounted upon said post and having a groove to protect the point of said needle, said thread guard engaging the work support at a point adjacent to the needle.

8. A sewing machine including in combination a bed plate, a work support, a needle, and means carried by the bed plate and extending upwardly therefrom and engaging the work support at a point adjacent the needle opening therein, said means being so positioned and constructed as to guard the needle.

9. A sewing machine including in combination, a work support, a bed plate, means for supporting the work support at a point adjacent the needle opening from the bed plate, and a needle guard and thread protector carried by said supporting means.

10. A sewing machine including in combination a work support, a needle, a looper coöperating therewith, a supporting member, a thread guard adjustably mounted upon said supporting member and means for vertically adjusting and angularly adjusting said supporting member.

11. A sewing machine including in combination a work support, a needle, a looper coöperating therewith, a thread guard having a flat head and a groove therein for said needle and means for adjusting the angle of said flat head relative to said needle and looper.

12. A sewing machine including in combination, a work support, a needle, a threaded looper coöperating therewith beneath the work support, means coöperating with the threaded looper and with the needle above the work support, and means located beneath the work support for housing the needle point after the same passes below the work support, until after it has passed the looper, whereby the point of the needle is prevented from entering between the thread of the looper and the body thereof.

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

OSCAR F. HANSEN.

Witnesses:
EUGENE G. MASON,
WARD E. WRIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."