

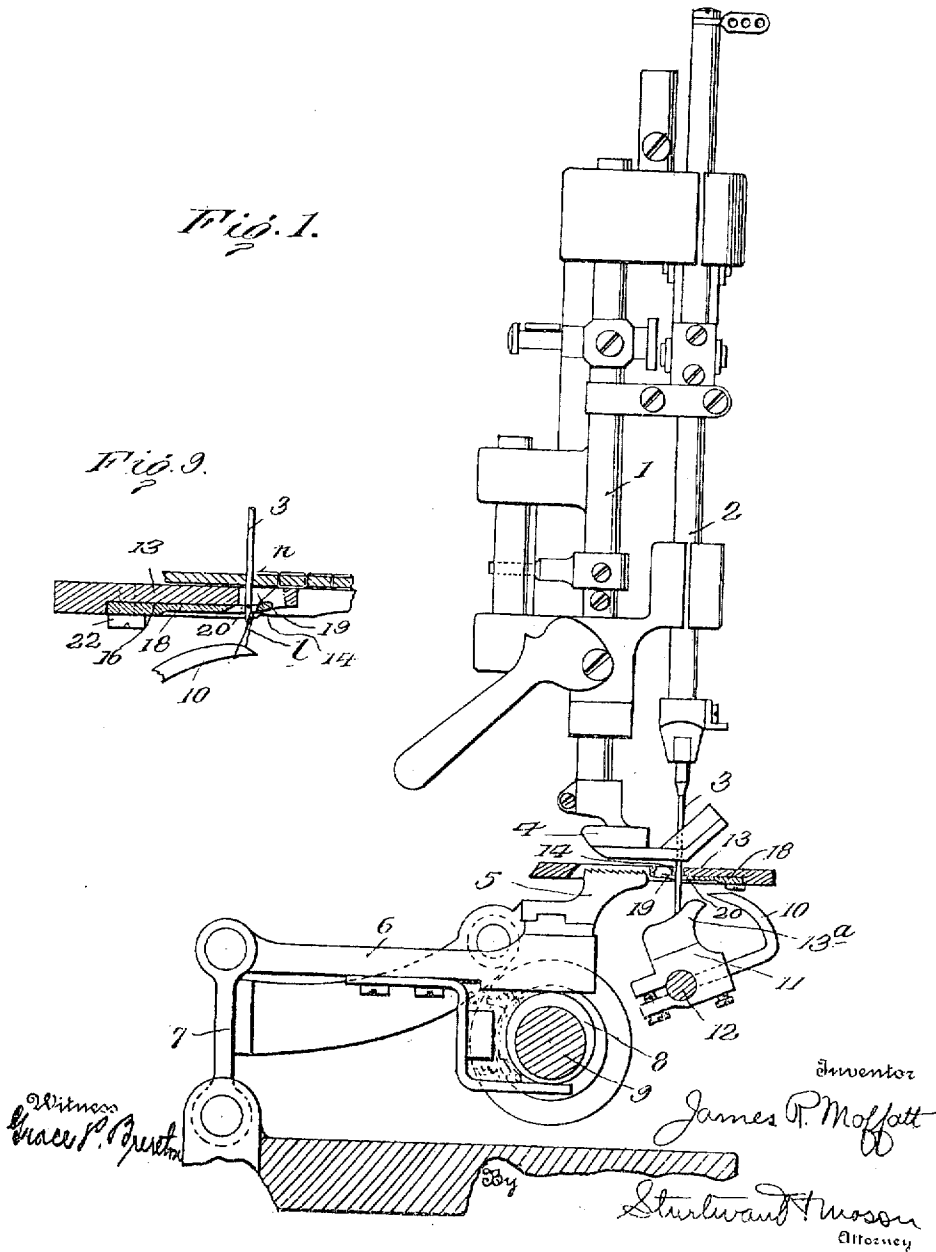
J. R. MOFFATT.
SEWING MACHINE.
APPLICATION FILED JUNE 24, 1918.

1,307,264.

Patented June 17, 1919.
3 SHEETS—SHEET 1.

Fig. 1.

Fig. 9.

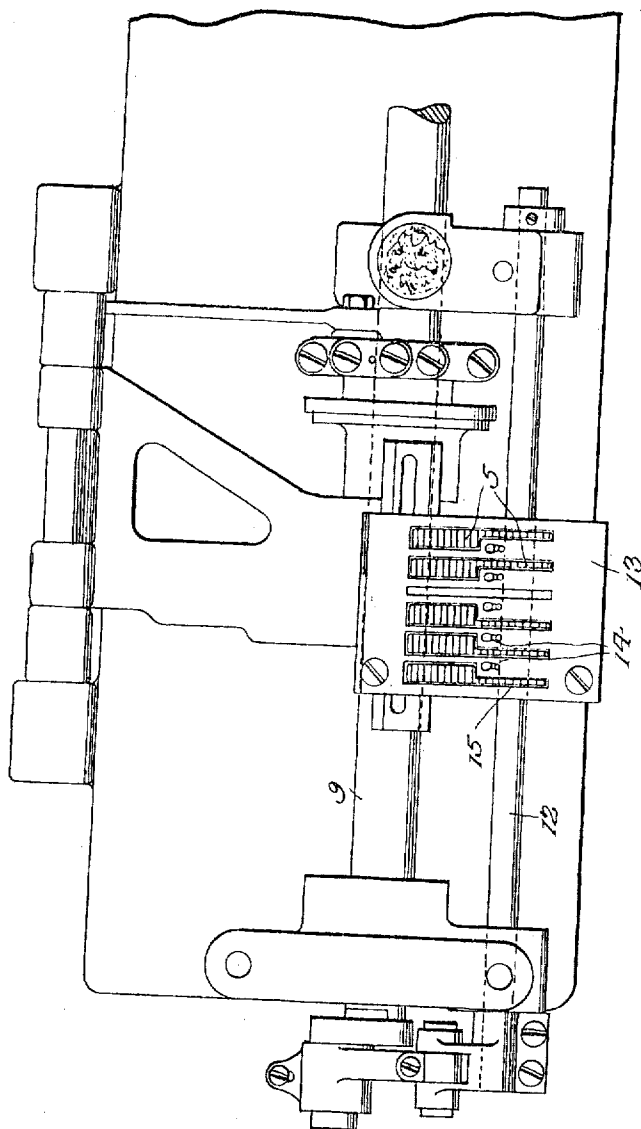


1,307,264.

J. R. MOFFATT.
SEWING MACHINE.
APPLICATION FILED JUNE 24, 1918.

Patented June 17, 1919.
3 SHEETS—SHEET 2.

Fig. 2.



Witness
Grace P. Burton

Inventor
James R. Moffatt
By *Sturtevant J. J. J.*
Attorney

1,307,264.

Patented June 17, 1919.
3 SHEETS—SHEET 3.

Fig. 3.

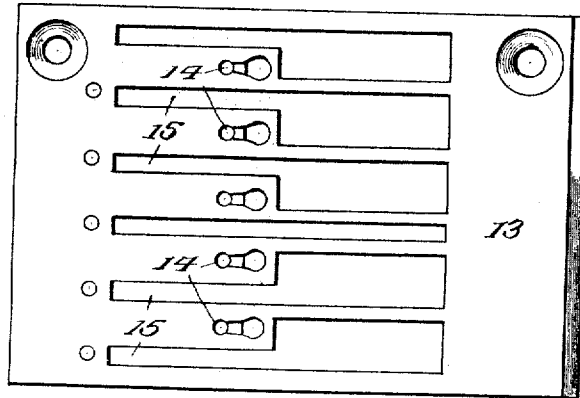


Fig. 4.

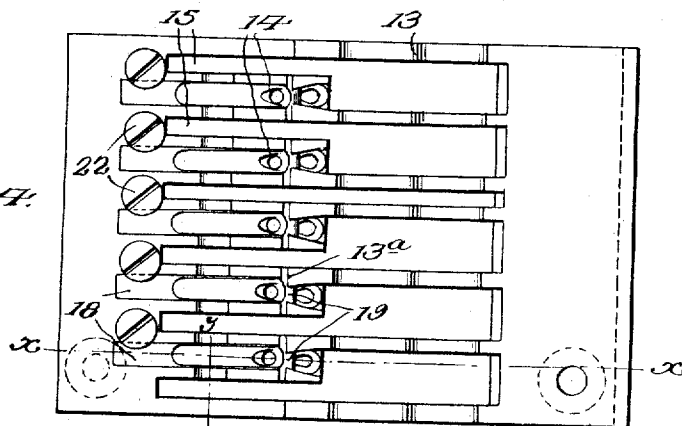


Fig. 5.

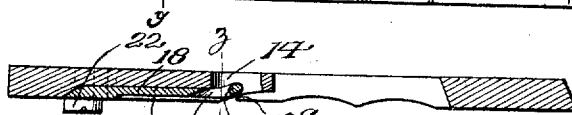


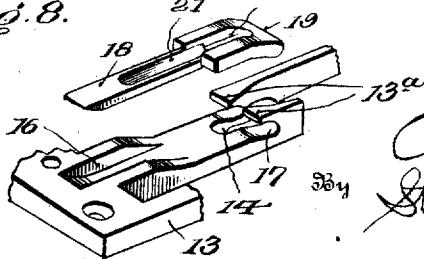
Fig. 6.



Fig. 7.



Fig. 8.



Witness
H. P. Periton

Inventor

James R. Moffatt

Sturtevant Mason

Attorney.

UNITED STATES PATENT OFFICE.

JAMES R. MOFFATT, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SEWING-MACHINE.

1,307,264.

Specification of Letters Patent. Patented June 17, 1919.

Application filed June 24, 1918. Serial No. 241,543.

To all whom it may concern:

Be it known that I, JAMES R. MOFFATT, 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 figures of reference marked thereon.

The invention relates to new and useful improvements in throat plates for sewing machines, and more particularly to a throat plate for a sewing machine wherein the stitch forming mechanism is of the single chain stitch type.

In the patent granted to R. G. Woodward, January 11th, 1916, No. 1,167,463, there is shown, described and claimed a throat plate construction for a single thread chain stitch machine, wherein a bar extends across the throat plate just in rear of the path of the needle, which bar operates to position the needle loop formed at one needle puncture for the entrance of the needle at the next needle puncture. It has been the practice to solder these bars to the throat plate. The bar necessarily is located very close to the path of the needle; and if the needle becomes deflected, even to a slight extent, it will strike and nick the bar—often breaking the bars and tearing them loose from the throat plate.

An object of the present invention is to provide a throat plate of the above character with a bar for each needle hole in the throat plate, which bar is carried by supporting means detachably connected to the throat plate, so that the bar may be readily removed if broken or damaged and other bars substituted therefor—not requiring the entire reconstruction of the throat plate.

In the drawings which show by way of illustration one embodiment of the invention,

Figure 1 is a view, partly in vertical section and partly in end elevation, showing more or less diagrammatically, a sewing machine having a throat plate with my improvements applied thereto;

Fig. 2 is a plan view of the throat plate and the important parts beneath the work support;

Fig. 3 is an enlarged top plan view of the throat plate;

Fig. 4 is an enlarged bottom plan view of the throat plate;

Fig. 5 is a sectional view on the line $x-x$ of Fig. 4;

Fig. 6 is a sectional view on the line $y-y$ of Fig. 4;

Fig. 7 is a sectional view on the line $z-z$ of Fig. 5;

Fig. 8 is a bottom perspective view of a portion of the throat plate with the bar supporting means separated therefrom; and

Fig. 9 is a detail, in vertical section, showing the position of the needle, the looper and the supporting bar for the needle thread loop just as the needle is entering the loop.

My invention is directed to a loop supporting bar for a single thread chain stitch machine, and particularly a machine wherein the looper moves in the direction of feed as it enters the needle thread loop, and retains the needle thread loop, so that the needle on its descent will enter the said loop, thus forming a series of enchain loops or the well known single thread chain stitch. Without the use of a supporting bar the needle thread loop is liable to twist or the strands become so nested together that the needle will sometimes pass outside of the needle loop, thus skipping the stitches. This supporting bar holds the loop in proper position, so as to insure that the needle point will enter the loop. Furthermore, the loop supporting bar is especially useful on long stitches, as in basting, as it holds the loop nearer to the vertical and prevents the loop from slipping off the looper during the backward travel thereof. In the Woodward patent the bar is soldered to the throat plate or otherwise permanently attached thereto. The present invention is directed to the particular means for supporting the bar for holding the loop, and consists in providing a separate bar for each needle where the device is used in a multiple needle machine, and a detachable supporting member for each bar, so that the bars may be quickly removed and replaced, if broken or damaged in any way.

Referring more in detail to the drawings, I have shown my invention as applied to a sewing machine having a supporting head 1, carrying a needle bar 2, in which is mounted a plurality of needles 3. The material is held on the work support by a presser foot 4 and is fed across the work support by a feed

dog 5, carried by a feed bar 6, which is moved back and forth by a feed rocker 7. The feed bar is raised and lowered by an eccentric 8, carried by the feed shaft 9. Co-operating with each needle is a looper 10, mounted on a looper carrier 11, which in turn is carried by a shaft 12. Also mounted on each looper carrier is a needle guard 13^a. These parts are of the construction shown in the Woodward patent, referred to, and further description thereof is not thought necessary.

Mounted on the work support is a throat plate 13. This throat plate 13 is provided with a needle opening or throat 14, one for each needle 3. It is also provided with a series of feed slots 15, and the feed dog 5 is formed with a series of sections, one for each feed slot. It will be noted from Fig. 2 of the drawings, that the feed sections are so shaped and arranged as to engage the material directly in rear of each needle opening in the throat plate and alongside of the needle openings.

The throat plate on its underface is formed with a groove 16, and with a seating recess 17. Mounted in the groove 16 and the seating recess 17 is a shank member 18, carrying the loop supporting bar 19. The loop supporting bar is formed as a part of the shank, said shank having an opening 20 directly in front of the bar 19, and a cut-away clearance 21 for the looper directly in front of the opening 20. The bar 19 seats in the recess 17 and this recess is so positioned that the bar 19 extends across the needle slot or opening 14, so that the needle passing down through the opening 14 will also pass through the opening 20 and directly in front of the bar 19. In effect, therefore, the bar 19 extends across the needle opening, just in the rear of the needle and close to the path of the needle. This recess 17 is preferably made by a mill cut which extends across the throat plate.

In Fig. 9 of the drawings, I have indicated the needle thread at *n* and the needle loop at *l*. In this figure, it will be noted that the needle point is just entering the needle thread loop extending from the previous needle puncture and this needle thread loop leading from the looper, where it is still held, to the previous needle puncture, is drawn across the bar 19. The supporting bar not only puts the needle loop under slight tension and holds it up against the looper, but it will hold the two strands of the loop and the loop itself, so that the needle will with certainty pass between the strands of the loop and into the needle thread loop. If the needle becomes slightly bent or deflected in any way, which is very likely to occur, owing to the feed of the fabric and the pull on the needle in the setting of the stitch, said needle is liable to

strike or wear against the bar 19. Sometimes these bars become nicked and sometimes broken, so that they become inefficient or useless and have to be replaced. This may be readily accomplished by removing the supporting shank with the bar 19 and replacing the same by another, said shank being held in the groove 16 by the screw 22.

It will be noted that in cutting the throat plate to form the seating recess 17, a portion of the throat plate, as indicated at 13^a, is left which extends underneath the loop supporting bar 19. As a result, if the needle should strike the bar the blow will be taken by the parts 13^a of the throat plate; and this prevents the bar from being torn from its seat. In other words, the loop supporting bar 19 is positively held in place by the throat plate itself. Inasmuch as each needle opening in the throat plate has its own independent bars and these bars are carried by separate and independent shanks, one bar may be replaced without disturbing the other in any way whatever.

It is obvious that minor changes in the details of construction and arrangement of parts may be made without departing from the spirit of the invention as set forth in the appended claims.

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

1. A single chain stitch machine including in combination a needle, a non-thread carrying looper cooperating with said needle and moving in the direction of the feed when entering the needle loop, means for operating the looper, a throat plate having a needle opening therein for the needle, a bar extending across said needle opening in rear of the path of the needle, whereby the needle thread loop on the looper extending to the previous needle puncture is drawn by the feed across said supporting bar and properly positioned for the entrance of the needle into said loop, and means for detachably supporting said bar, whereby the same may be removed and replaced at will.

2. A single chain stitch machine including in combination, a needle, a non-thread carrying looper cooperating with said needle and moving in the direction of the feed when entering the needle loop, means for operating the looper, a throat plate having a needle opening therein for the needle, a bar extending across said needle opening in rear of the path of the needle, whereby the needle thread loop on the looper extending to the previous needle puncture is drawn by the feed across said supporting bar and properly positioned for the entrance of the needle into said loop, said throat plate having a groove formed in its under face and a seating recess adjacent the needle opening, a supporting shank for said bar, said shank

being adapted to seat in said groove and having its forward end carrying the bar seated in said recess, and means for holding the shank in place in said groove.

5 3. A single chain stitch machine including in combination, a plurality of needles, a non-thread carrying looper cooperating with each needle and moving in the direction of the feed when entering its needle thread
10 loop, means for operating the loopers, a throat plate having a needle opening therein for each needle, a separate bar for each needle opening extending across the needle opening in rear of the path of the needle,
15 whereby the needle thread loop on the looper of the needle passing through the needle opening and extending to the previous needle puncture of said needle is drawn by said feed across said supporting bar in proper
20 position for the entrance of the needle into said loop, and independent means for detachably supporting each bar.

4. A single chain stitch machine including in combination, a plurality of needles, a
25 non-thread carrying looper cooperating with each needle and moving in the direction of the feed when entering its needle thread loop, means for operating the loopers, a throat plate having a needle opening therein for each
30 needle, a separate bar for each needle opening extending across the needle opening in rear of the path of the needle, whereby the needle thread loop on the looper of the needle passing through the needle opening
35 and extending to the previous needle puncture of said needle is drawn by said feed across said supporting bar in proper position for the entrance of the needle into said loop, said throat plate having a groove
40 adjacent each needle opening, a shank carrying the loop supporting bar for each needle opening mounted in said groove, and means for retaining the shank in its groove.

5. A single chain stitch machine including
45 in combination a needle, a non-thread carry-

ing looper cooperating with said needle and moving in the direction of the feed when entering the needle loop, means for operating the looper, a throat plate having a needle opening therein for the needle, a bar extending across said needle opening in rear of the path of the needle, whereby the needle thread loop on the looper extending to the previous needle puncture is drawn by the feed across
50 said supporting bar and properly positioned for the entrance of the needle into said loop, said throat plate having a seating recess adjacent the needle opening for receiving and supporting the loop supporting bar, said throat plate having a portion thereof extending underneath the bar, whereby the
55 downward thrust on the bar by the needle striking the same will be taken by the throat plate.

6. A single chain stitch machine including
65 in combination, a needle, a non-thread carrying looper cooperating with said needle and moving in the direction of the feed when entering the needle loop, means for operating the looper, a throat plate having a needle opening therein for the needle, a bar extending across said needle opening in rear
70 of the path of the needle, whereby the needle thread loop on the looper extending to the previous needle puncture is drawn by the feed across said supporting bar and properly positioned for the entrance of the needle into said loop, said throat plate having a groove formed in its under face, a
75 supporting shank for said bar, said shank being adapted to seat in said groove, and means for holding the shank in place in said groove.

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

JAMES R. MOFFATT.

Witnesses:

S. GEORGE TATE,
E. A. ROTHACKER.

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