

1,255,489.

J. TRIEM.
 THREAD CUTTING MECHANISM.
 APPLICATION FILED JUNE 9, 1913.

Patented Feb. 5, 1918.
 2 SHEETS—SHEET 1.

Fig. 1.

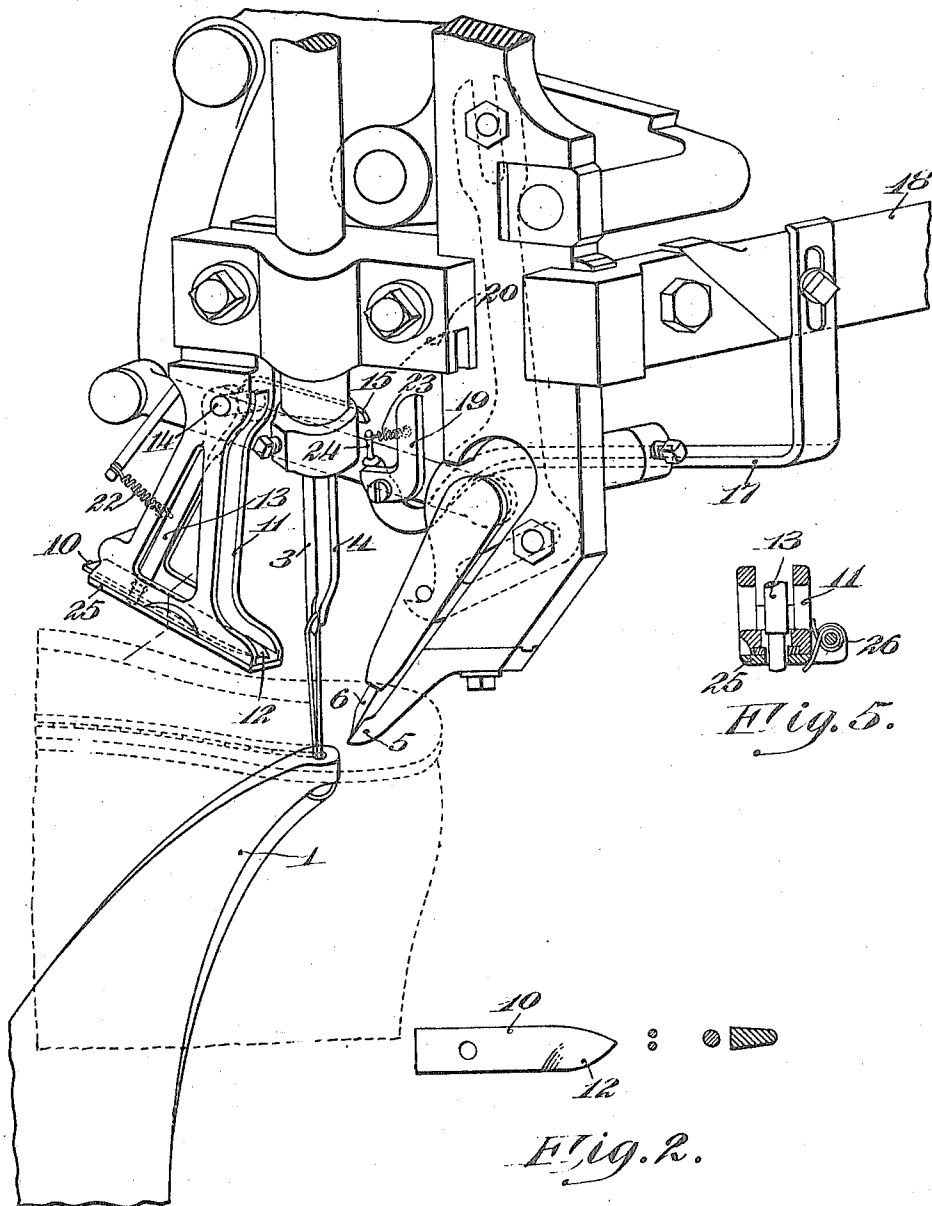


Fig. 5.

Fig. 2.

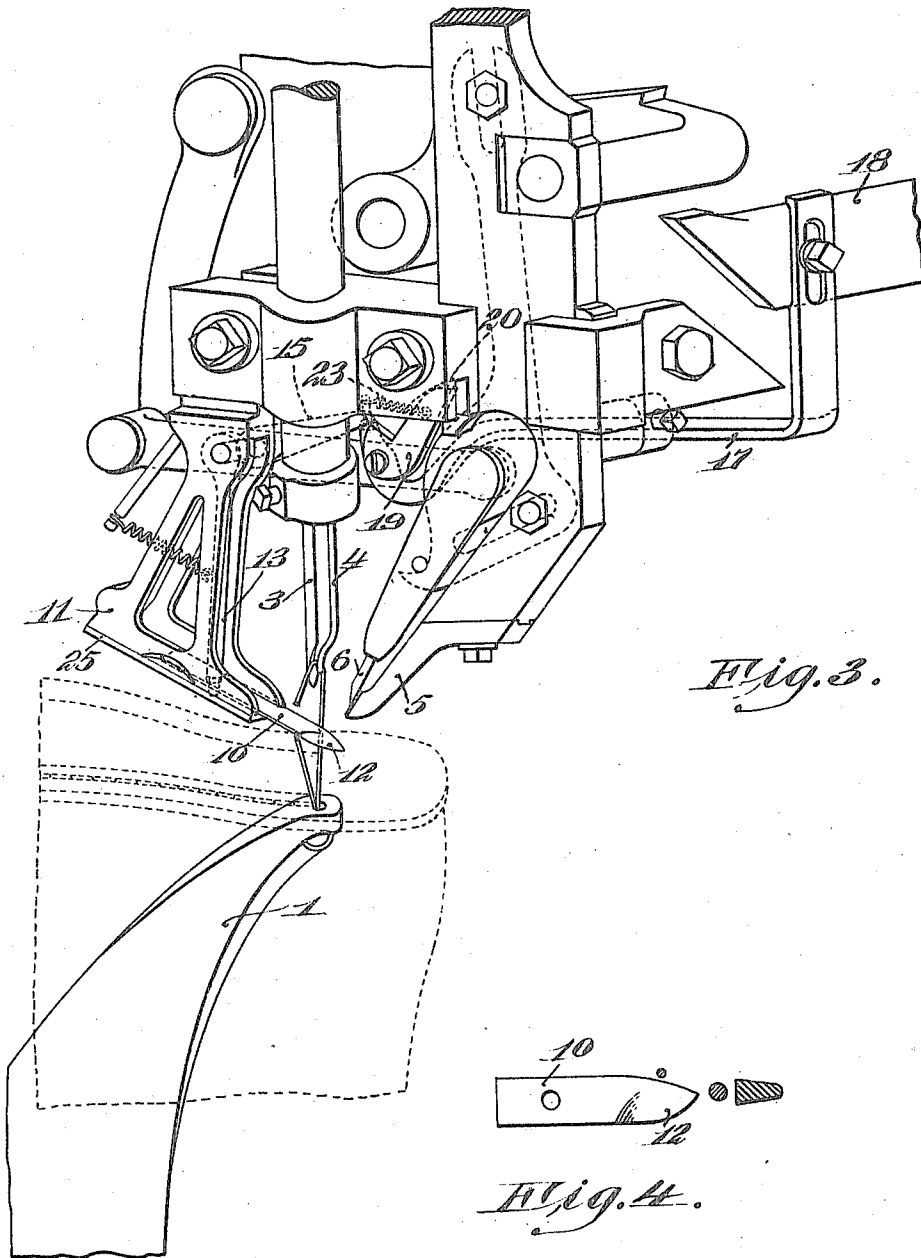
Witnesses
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M. A. Hurley

Inventor
Jakob Triem
by his attorneys
Phillips, Vawter & Frost

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UNITED STATES PATENT OFFICE.

JAKOB TRIEM, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

THREAD-CUTTING MECHANISM.

1,255,489.

Specification of Letters Patent.

Patented Feb. 5, 1918.

Application filed June 9, 1913. Serial No. 772,566.

To all whom it may concern:

Be it known that I, JAKOB TRIEM, a subject of the King of Bavaria, residing at Frankfort-on-the-Main, Germany, have invented certain new and useful Improvements in Thread-Cutting Mechanisms; 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.

The present invention relates to shoe sewing machines employing a straight hooked needle which is actuated to form a chain stitch seam, and more particularly to the thread cutting mechanism employed in connection with this type of machine.

The object of the present invention is to reorganize and improve thread cutting mechanisms of this type to secure a simple and efficient construction which severs the thread with certainty and precision. With this object in view, one feature of the invention contemplates the provision of a thread cutter normally positioned at one side of the path of movement of the needle, and actuating mechanism for moving the cutter across the path of movement of the needle to sever one side of the loop of thread held by the needle. A further feature of the invention consists in certain novel features of construction, combinations and arrangements of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the accompanying description.

In the accompanying drawings:—

Figure 1 is a view showing a front elevation of the thread cutting mechanism and associated parts of a sewing machine;

Fig. 2 is a detail illustrating somewhat diagrammatically, the relative positions in plan of the thread loop, presser foot and cutting knife;

Fig. 3 is a view similar to Fig. 1 illustrating the thread cutting mechanism in operation;

Fig. 4 is a view similar to Fig. 2 illustrating the position of the thread cutting knife in plan after one leg of the loop of thread has been severed; and

Fig. 5 is a section upon the line 5—5 of Fig. 1, showing the construction for holding the cutting knife in place.

The machine shown in the illustrated embodiment of the invention is of the usual form employing a horn 1 which carries the thread supply and whirl, a straight hooked needle 3 which is actuated in the usual manner to form a chain stitch seam, and a cast off 4. The shoe is clamped in position upon the horn 1 by a presser foot 5 which is raised to allow an intermittent feeding of the shoe by a feed point 6. The above described construction and mode of operation are well-known in connection with this type of machine and in consequence, have been only briefly described herein.

Machines of this type are ordinarily provided with a stop mechanism which brings the parts to rest with the needle in a retracted position, as shown in Fig. 1 of the drawings. While the needle remains in this position and before the removal of the shoe it is desirable to cut the thread as close to the work as possible and avoid wasting the thread. One side of the loop of thread held by the needle is connected to the last stitch and the other side passes through the shoe to the supply, and in the present invention the thread cutter severs the first mentioned side of the loop close to the work, which not only causes all of the thread to be utilized in forming the seam, but leaves a comparatively long length of thread to start the next stitch. In the simplest and most efficient form of the invention which has yet been devised, the thread cutter is passed between the two legs of the loop and is arranged to sever the front leg of the loop which forms a continuation of the seam close to the work. The thread cutting knife is indicated at 10 and is slidably supported in a stationary knife carrier 11 secured to the machine frame. The cutting knife is in the form of a thin pointed blade having a single cutting edge 12, arranged to sever one leg only of the loop of thread, as shown clearly in Fig. 3. The knife blade is actuated by an operating arm 13 secured at its upper end to a shaft 14, which is rocked by a second arm 15. It is desired to operate the thread cutting mechanism upon raising the presser foot at the completion of the sewing operation, and to this end a curved arm 17 is adjustably secured to the presser foot lifting bar 18. By adjusting the arm 17 vertically the operative movement of the cutter may be varied to

cause the severing of the thread to take place at different times. The arm 17 pivotally supports a trip member 19 upon its outer end, which is arranged to engage and rock the arm 15, as shown clearly in Fig. 3, upon raising the presser foot bar. The thread cutting mechanism is automatically disconnected from the trip member when the presser foot is raised to a predetermined height by a cam surface 20 which engages with the upper end of the trip member 19 and rocks the trip member to free it from the arm 15. When this occurs, the thread cutting knife is returned to its initial inoperative position by a tension spring 22 connected to the arm 13, thus allowing the shoe to be removed without interference with the knife. Upon lowering the presser foot the trip member 19 is rocked backward to its initial position by a spring 23 connecting the upper portion of the member with a fixed stud 24 secured in the arm 17. In order to allow the convenient removal of the knife blade, the carrier 11 is provided with a retaining member 25 hinged upon the under side and normally closed by a spring 26 to support the knife blade in ways formed in the carrier. The end of the arm 13 passes through a slot formed in the knife blade, thus operatively connecting the knife and arm but allowing the knife blade to be conveniently removed when desired by opening the retaining member 25.

While it is preferred to employ the specific construction and arrangement of parts shown and described, it will be understood that this construction and arrangement is not essential except so far as specified in the claims, and may be changed or modified without departing from the broader features of the invention.

The invention having been described, what is claimed is:

1. A shoe sewing machine having, in combination, stitch forming mechanism including a hooked needle, a thread cutter constructed to enter between the legs of a loop of thread held by the needle and normally positioned at one side of the path of movement of the needle, and actuating mechanism for moving the cutter between the two legs of the loop of thread held by the needle to sever one side of the loop of thread between the needle and work.

2. A shoe sewing machine having, in combination, a horn, a straight hooked needle, mechanism for actuating the needle to form a chain stitch, a thread cutting knife, and means for imparting a downward thread cutting movement to the knife in the direction of the seam to cut one leg of the loop of thread held by the needle close to the work.

3. A shoe sewing machine having, in combination, a horn, a straight hooked needle, mechanism for actuating the needle to form a chain stitch, a presser foot, mechanism for raising the presser foot from the work, a thread cutter constructed to enter between the legs of a loop of thread held by the needle, and actuating mechanism for the thread cutter operatively connected with the presser foot lifting mechanism and arranged to move the cutter between the two legs of the loop of thread held by the needle to sever one leg of the loop.

4. A shoe sewing machine comprising stitch forming mechanism including a hook needle, a pointed knife blade having a single cutting edge, and mechanism for moving the knife blade in the direction of its length to insert the point of the blade between the two legs of a loop of thread held by the needle and sever one side of the loop.

5. A shoe sewing machine comprising a straight hooked needle, a presser foot lifting bar, a presser foot supported by the bar, a thread cutter, an arm mounted upon the presser foot bar, a trip member pivotally supported on the arm, connections between the trip member and thread cutter, and means for automatically disconnecting the trip member and thread cutter upon raising the presser foot to a predetermined height.

6. A shoe sewing machine comprising a straight hooked needle, mechanism for actuating the needle to form a chain stitch, a stationary knife carrier, a knife blade slidably mounted in the carrier, a retaining member hinged to the carrier and normally holding the knife blade in position, and actuating mechanism detachably connected to the knife blade.

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