

June 26, 1951

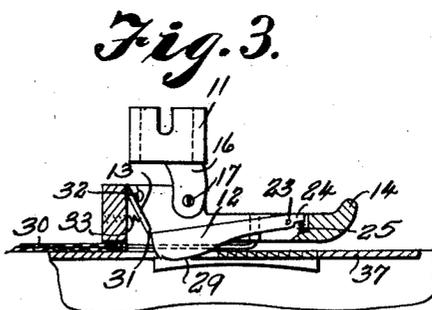
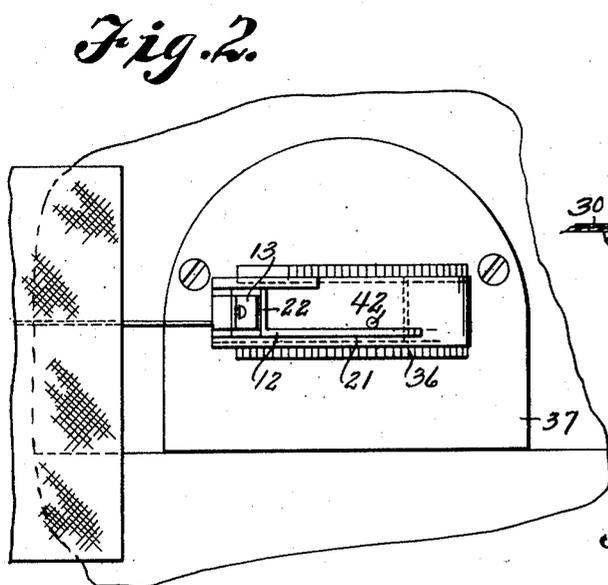
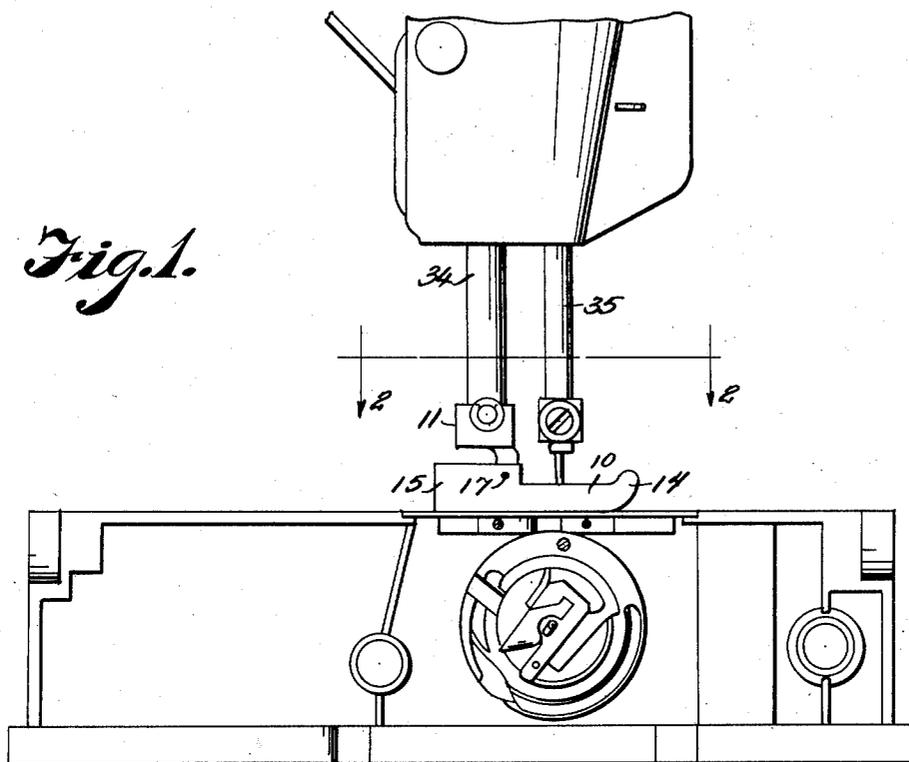
S. G. GARCIA

2,558,353

AUTOMATIC TRIMMER FOOT

Filed Feb. 17, 1948

2 Sheets-Sheet 1



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Fig. 5.

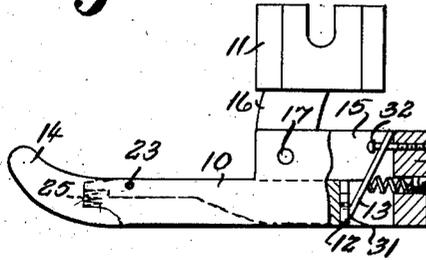


Fig. 6.

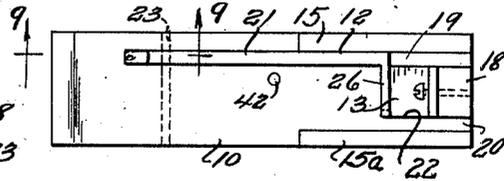


Fig. 4.



Fig. 10.

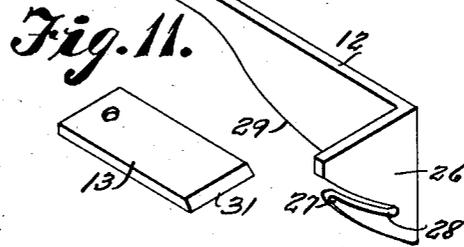


Fig. 9.

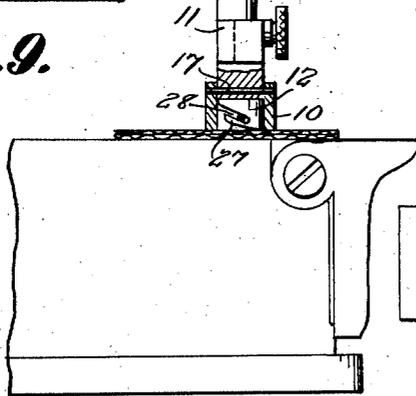


Fig. 7.

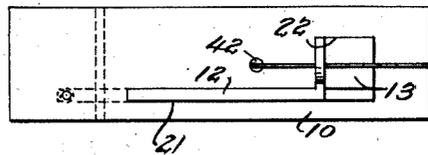
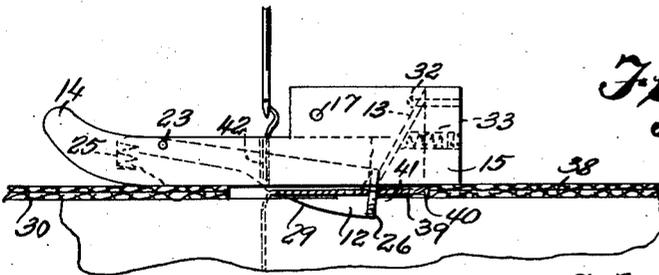


Fig. 8.



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UNITED STATES PATENT OFFICE

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AUTOMATIC TRIMMER FOOT

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2 Claims. (Cl. 112-252)

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This invention relates to the shoe at the lower end of the pressure bar of sewing machines and in particular an improved pressure foot in which a thread cutting knife is incorporated wherein as one piece of material leaves the machine and another enters the chain of thread from the material leaving the machine will be automatically cut leaving a comparatively short piece extending from the material as it leaves the machine.

The purpose of this invention is to eliminate the necessity of sewing machine operators picking up a pair of shears and cutting the thread of material being stitched as the material leaves the machine.

Various types of attachments have been provided for severing the thread of sewing machines but these require changes in the machines or sever the thread too close to the material which often causes damage to the goods and for these reasons devices for this purpose are not universally used. With this thought in mind this invention contemplates a trimmer foot or shoe for sewing machines which replaces the usual foot and is provided with shearing knives that automatically sever the chain of thread a short distance from the stitched material as it leaves the machine.

The object of this invention is, therefore, to provide a trimmer foot for sewing machines that replaces the usual presser foot and that automatically cuts the chain of thread a short distance from goods stitched on the machine as additional material is inserted in the machine.

Another object of the invention is to provide thread cutting means in a pressure foot of sewing machines that is actuated by material fed to the machine.

Another object of the invention is to provide a trimmer foot for sewing machines for severing a chain of thread a short distance from material stitched on the machine which may be readily installed on machines now in use.

A further object of the invention is to provide an improved automatically operative trimmer foot for sewing machines for severing the chain of thread which is of a simple and economical construction.

With these and other objects and advantages in view the invention consists of the new and novel combination, construction, and arrangement of parts as hereinafter more fully described, set forth in the claims appended hereto, and disclosed in the accompanying drawings forming part hereof, wherein:

Figure 1 is a view showing a front elevation of

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the head of a sewing machine with parts omitted and with the improved trimmer foot installed on the lower end of the presser-bar.

Figure 2 is a plan view taken on line 2-2 of Figure 1 with the needle-bar and presser-bar omitted, illustrating the trimmer foot positioned above the feed dog and needle plate.

Figure 3 is a longitudinal section through the trimmer foot with parts broken away and parts omitted, showing the lever knife dropped downward between two pieces of material.

Figure 4 is a view showing an end elevation of the presser-bar with the trimmer foot shown in section illustrating the thread gripping finger at the end of the lever knife.

Figure 5 is a view showing a side elevation of the trimmer foot with part broken away showing the stationary cutter blade.

Figure 6 is a plan view of the trimmer foot showing the relative positions of the parts.

Figure 7 is a similar view looking upward toward the under surface thereof.

Figure 8 is a view showing a side elevation of the trimmer foot illustrating stitched pieces of material leaving the machine and pieces of material to be stitched entering the opposite end of the trimmer foot.

Figure 9 is a detail showing a section taken on line 9-9 of Figure 6 showing the spring for actuating the lever knife.

Figure 10 is a detail illustrating the lever knife. Figure 11 is a detail showing the stationary knife.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved trimmer foot of this invention includes a foot or shoe 10 mounted on a shank 11 and provided with a lever knife 12 and a stationary knife blade 13.

The trimmer foot 10 or shoe is formed of a substantially solid bar with an arcuate toe 14 at the outer end and a shoulder formed with side walls 15 and 15a at the opposite end and through which it is pivotally mounted on a downwardly disposed tongue 16 of the shank 11 by a pin 17. The end wall 18 of the shoulder is separated from the side walls thereof by vertically disposed slots 19 and 20. The shoe of the trimmer foot 10 is provided with an L-shaped slot having a longitudinally positioned part 21 and a transverse section 22, and the L-shaped lever knife 12 which is provided with a long arm and a short arm is positioned in the slot with the small end of the long arm thereof pivotally mounted in the shoe on a pin 23. The small end of the lever knife is

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provided with an extending finger 24 by which this end is urged upward and the opposite end downward by a spring 25, as shown in Figure 9.

The opposite end of the lever knife 12 is provided with a shearing flange 26 having a thread gripping finger 27 with an arcuate lower edge formed at the lower end thereof providing a thread holding slot 28 above the finger. The flange 26 is positioned in the transverse section 22 of the slot in the trimmer foot and the long side of the lever knife is formed with an arcuate lower edge 29 which, when the lever knife is dropped downward, as shown in Figures 3 and 8, extends below the material being stitched so that the finger 27 may ride over the chain of thread until the thread snaps into the slot 28. With the thread in the slot 28 the next material to be stitched as indicated by the numeral 30 engages the arcuate lower surface 29 of the lever knife 12 and forces the knife upward against the spring 25 so that the flange 26 slides against the sharp edge 31 of the stationary knife 13 thereby shearing the thread. The knife 13 is mounted on a pin 32 in the end wall 18 of the shoulder of the trimmer foot and the knife is resiliently urged outward by a spring 33 also positioned in the end 18, as illustrated in Figure 5.

With the parts arranged in this manner the trimmer foot is carried by the presser-bar 34 with the needle-bar 35 positioned as shown in Figure 1, and the trimmer foot 10 holds layers of material to be stitched against the feed dog 36 on the needle plate 37, and after the material 38 is stitched a chain of thread 39 will extend from the rear edge 40 thereof, and the chain of thread will be picked up by the finger 27 of the lever knife 12, as shown in Figure 8, wherein the thread will be automatically severed at the point 41, leaving a short piece of thread at the edge of the material. The thread is severed at a point between the edge of the stitched material and the needle opening 42 in the trimmer foot, as illustrated in Figure 8 wherein a short piece of thread will be provided at the leading edge of the material entering the machine.

It will be understood that although this attachment is illustrated as mounted on the presser-bar it may be attached to any suitable part of a sewing machine where it will sever the thread, and although it is shown as a single unit it may be used in multiple wherein it is adapted for use with gang sewing machines and machines having a plurality of needles.

It will be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

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What is claimed is:

1. In a sewing machine attachment, a trimmer foot adapted to be carried by the presser-bar of the machine, said trimmer foot having an L-shaped slot therethrough and a shoulder at one end, a knife fixedly mounted on the shoulder, means resiliently urging the cutting edge of the knife outward, an L-shaped lever knife positioned in the slot with the short leg thereof positioned to coact with the knife, said short leg having an arcuate thread gripping finger formed on the lower edge with a thread holding slot above the finger, means pivotally mounting the said lever knife in the slot of the trimmer foot, and resilient means urging the end of the lever knife carrying the thread gripping finger downward, said lever knife having an arcuate lower edge.

2. In a thread cutting attachment for a sewing machine, a pressure bar, a shoe having a vertically disposed L-shape slot therethrough with the long section of the slot extended longitudinally of the shoe and with the short section extended transversely and spaced from one end providing an end wall, means mounting the shoe on the said pressure bar, a knife blade positioned in the shoe and mounted on the said end wall with the cutting edge extended from said wall, an L-shape lever knife having a long arm and a short arm in the shoe and mounted with the short arm positioned to coact with the knife blade to shear thread positioned below the shoe as the lever knife moves upwardly said short arm of the L-shaped lever knife having an arcuate thread receiving slot therein for picking up thread below the shoe and carrying the thread upwardly against the cutting edge of the knife blade, and means pivotally mounting the said lever knife, through the long arm thereof in the shoe, said lever knife positioned whereby as material stitched by the machine leaves the shoe the lever knife drops downwardly and as material passes under the shoe the lever knife is actuated upwardly by the material to coact with the knife blade in the shoe to shear the thread.

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