

March 29, 1927.

1,622,653

M. LEISTER

FLOATING THREAD CUTTER

Filed Nov. 8, 1926

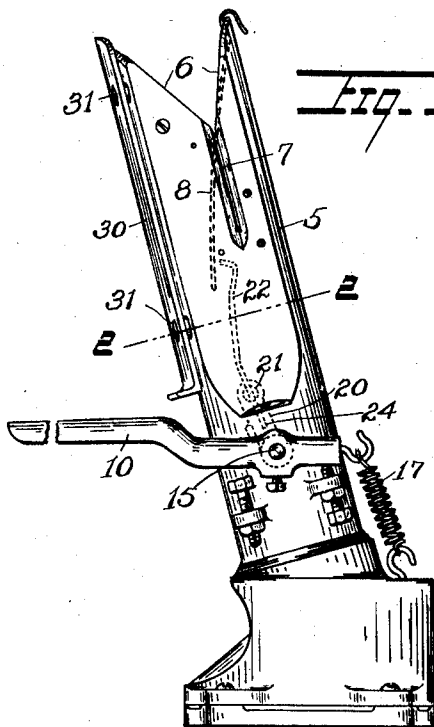


Fig. 1.

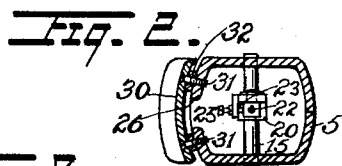


Fig. 2.

Fig. 3.

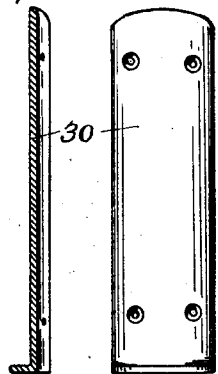


Fig. 4.

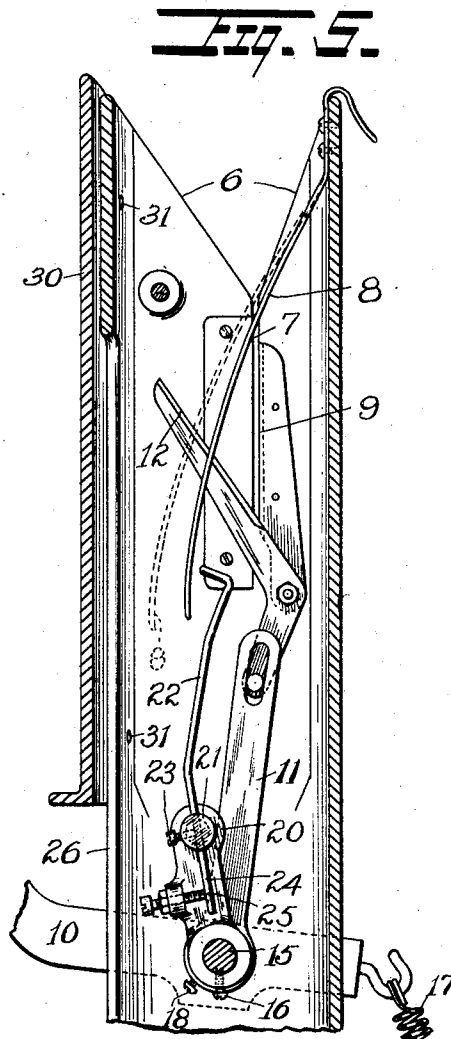


Fig. 5.

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FLOATING-THREAD CUTTER.

Application filed November 8, 1926. Serial No. 146,973.

My invention relates to floating-thread cutter devices such as that shown in the patent to George S. Weinert, No. 1,038,695, issued November 30, 1897, and adapted more particularly for severing the interior float threads of double-soled and high-spliced hosiery commonly left at the completion of the knitting operation on circular knitting machines.

And more particularly my improvements comprise novel means for momentarily increasing the tensioning of the float thread at the time of severing the same to facilitate such cutting along a line determinedly spaced close to the point where such floats enter into the knitted fabric; and further to adjustably vary the exterior diameter of the hose supporting tube with relation to the cutter devices so as to permit proper cutting of float threads of hosiery having double soles and high splicings of varying diametral extent.

With these and other objects in view, as will appear later, my invention comprises the improved structure more fully described in the following specification, and shown in the drawing accompanying the same, the novel features thereof being specifically set forth in the subjoined claims.

Fig. 1 shows a side elevation of a float thread cutter device embodying my improvements.

Fig. 2 is a transverse cross-sectional view of the same taken on the line 2—2 of Fig. 1.

Figs. 3 and 4 are respectively a vertical sectional view and front elevation of my improved diameter-increasing member.

Fig. 5 is an enlarged vertical sectional view showing more clearly the mechanism disposed within the hosiery supporting tube.

In float-thread cutters of this type, as well understood, the tubular hose is pulled down over the supporting tube 5, with the float threads guided by the converging edges 6, 6, of the upper end of said tube so as to enter the oppositely disposed vertical slots 7, 7; a usual tensioning spring member 8 tauting such transverse floats and causing them to lie close to the fixed knife edges 9, 9. When thus positioned handle lever 10 is operated to rock its arms 11, 11, and the latter cooperatively actuate movable knife edges 12, 12 across fixed knife edges 9, 9, to sever said floating threads in an even line adjacent the points where they enter into the knitted fabric.

The known cutter mechanism, above briefly described, works with entire satisfaction as long as the runs of hosiery have substantially the same diameter and fabric tension, and equal widths of the reenforced portions. Fabric tensions vary however, and when a fixed degree of tension is given member 8, it may be found insufficient in some cases to properly taut the floats or equally aline their points of entry into the knitted fabric, resulting in uncut floats and a ragged uneven line of severance making an unsightly and imperfect finish; or when member 8 is too taut, it may draw the knitted fabric into the slots 7, 7, so that the shearing line will be too close or even cut the fabric. Also in hosiery now made the widths of the double sole and high-splice are frequently reduced to comply with present demands, so that a fixed location of the slots 7, 7, with relation to the diameter will not answer. To overcome this, as later herein more fully described, I provide a diameter-enlarging member which may be applied to the supporting tube 5 and adjusted thereon with relation to said slots; and further I give a minimum tension to the member 8, and provide adjustable means for momentarily increasing its tension to a determined extent at the time of cutting so as to give just the right tautness to the float thread for the desired cutting thereof at the proper place.

In the drawings the lever 10 is shown as secured exteriorly to a shaft 15 mounted transversely in the tube 5, said shaft carrying, inside said tube, the arms 11, 11 fixedly positioned by screws 16, 16, which arms operate the knife edges 12, 12, and spring 17 retains said knife edges in normally open position indicated. Intermediately mounted on the shaft 15, and secured thereto by screw 18, is shown an additional arm 20 having a pivotal post 21 rotatably secured in the upper end thereof; and said post carries an arm 22, held by screw 23 in longitudinally adjusted position, with its lower end 24 lying in the path of an adjustable stop screw 25 carried by arm 20. The upper end of arm 22 is adapted, when shaft 15 is rocked by lever 10, to swing into contact with and move tensioning member 8, as de-

terminated by the set position of stop screw 25, access to the latter being had through wall aperture 26 in tube 5. The preferred construction thus described provides for determinedly increasing the tauting tension of member 8 as the arms 11, 11 operates to operate the knife-edges 12, 12.

Figs. 3 and 4 show separately the preferred means employed to increase the diameter of main tube 5, and comprises a diameter-increasing plate 30 extending longitudinally of said main tube at one side thereof intermediate the longitudinal slots 7, 7 said plate being secured to the main tube, as shown, by screws 31, and spaced from the latter, if desired, by washers 32. The thickness of the washers 32 will determine the proper location of the floats in slots 7, 7; and the added tension of member 8, through arm 22, is adjusted in accordance with the position of plate 30, which latter is set for a determined run of hosiery.

It will be noticed that the slots 7, 7 are not centrally located, as the high splice and sole reinforcements are commonly of less than half the diameter of the tubular hose fabric. Plate 30 provides for variations in such narrowings of the high splice and sole reinforcements; but it will be understood it may be applied to the opposite side of tube 5 to provide for wider reinforcements if desired.

My improvements thus fully described adapt my cutter for a great variety of widths of reinforced hosiery, and insure the desired alined cutting of the float threads at the proper points adjacent their entry into the knitted fabric, as insured by the adjusted momentary increase in the tension of member 8 at the time of cutting.

What I claim:—

1. A float-thread cutter mechanism for tubular hosiery comprising a longitudinally slotted tubular member, shearing devices adjacent the slotted portions thereof, a float-thread tensioning member within said tubular member, and means for simultaneously operating said shearing devices and increasing the tensioning action of said float-thread member.

2. A float-thread cutter mechanism for

tubular hosiery comprising a longitudinally slotted tubular member, shearing devices adjacent the slotted portions thereof, a float-thread tensioning member within said tubular member, and an operating lever having shear arms and a tensioning arm adapted to simultaneously actuate said shearing device and to increase the tensioning action of said float-thread member.

3. A float-thread cutter mechanism for tubular hosiery comprising a longitudinally slotted tubular member, shearing devices adjacent the slotted portions thereof, a float-thread tensioning member within said tubular member, and an operating lever having shear arms and an adjustably-positioned tensioning-arm adapted to simultaneously actuate said shearing devices and determinedly increase the tensioning action of said float-thread member.

4. A float-thread cutter mechanism for tubular hosiery comprising a longitudinally-slotted tubular member having an interior float-thread tensioning member and interior lever actuated shearing devices adjacent the slotted portions thereof, and an exterior longitudinally-extending diameter-increasing member positioning on said tubular member midway of said longitudinal slots and in adjusted diametral relation to the latter.

5. A float-thread cutter mechanism for tubular hosiery comprising a longitudinally-slotted tubular member having an interior float-thread tensioning member and interior shearing devices adjacent the slotted portions thereof, an exterior longitudinally-extending diameter-increasing member positioned on said tubular member midway of said longitudinal slots and in adjusted diametral relation to the latter, and an operating lever having interior arms adapted to simultaneously actuate said shearing devices and determinedly increase the tensioning action of said float-thread member in proportion with the adjusted position of said exterior diameter-increasing member.

In testimony whereof I affix my signature.

MORRIS LEISTER.