THREAD-CHAIN HOLDING AND CUTTING DEVICE FOR SEWING MACHINES

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This invention relates to sewing machines and more particularly to a device intended for use with a sewing machine and designed to hold and cut a thread-chain after the said thread-chain has been formed by the stitch forming instrumentalties of the sewing machine and the primary object of the present invention is to provide an improved device of this character.

Another object of the invention is to provide an improved thread-chain gripping and holding device.

A further object of the invention is to provide an improved thread gripping device having provisions for guiding the thread-chain into the gripping device.

A still further object of the invention is to provide an improved thread-chain gripping device having gripping slots bounded by at least one resilient tooth.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the drawings:

FIG. 1 is an end elevational view, partly in section, of a sewing machine equipped with a thread-chain cutting and holding device embodying the present invention,

FIG. 2 is a fragmentary view taken substantially on the line 2—2 of FIG. 1,

FIG. 3 is an enlarged fragmentary sectional view taken on the line 3—3 of FIG. 2 and showing the thread-chain being cut,

FIG. 4 is an enlarged fragmentary sectional view taken on the line 4—4 of FIG. 2 and showing the thread-chain being held, and

FIG. 5 is an enlarged exploded perspective view showing the holding and cutting device of the present invention.

The thread-chain holding and cutting device illustrated in FIGS. 1—5, inclusive, is shown associated with a sewing machine 15 having a base 16, the top of which forms a work supporting surface 17 into which is recessed a throat plate 18 held by screws 19. A standard 21 rises from the base 16 and supports a bracket arm having a head 22 which carries a presser bar 23 and a needle bar 24. The end 26 of the base 16 is provided with a pair of threaded holes, only one, namely hole 27, being shown. The holes 27 accommodate a pair of screw 28—28 which secure the thread-chain holding and cutting device 29 to the face of the end 26. The thread-chain holding and cutting device 29 embodying the present invention comprises two major parts, namely a block 32 formed from a plastic such as nylon or other suitable material, and a preferably metallic knife blade 33.

The block 32 is substantially in the form of a rectangular parallelepiped having a pair of cylindrical holes 34—34 for accommodating the screws 28—28. The upper end of the block 32 is beveled on all four edges as indicated by the numeral 36 and the upper end of the block 32 has a plurality, in this instance nine thread-chain gripping slots designated as slots 37—38. Each of the slots 37 is bounded on its two sides by a narrow tooth 39 whereas each of the slots 38 is bounded on one of its sides by a narrow tooth 39 and on its other side by a thick tooth 41. Because of this, each slot, whether it be slot 37 or 38, has at least one of its sides bounded by a narrow tooth 39 which, because of its thinness, is resilient. In addition to the bevel 36 which extends around the complete upper edge of the block 32, each thick tooth 41 has an inner bevel 42 and each narrow tooth 39 has two inner bevels 42—42. Reference to FIG. 4 shows that the inner bevels 42—42 formed on adjacent teeth 39—39 or 39—41 provide a converging means for guiding a thread-chain into a slot 37 or 38.

The knife blade 33 is in the form of a flat plate having its top beveled to provide a cutting edge 43, and the main body of the blade 33 is provided with a pair of cylindrical holes 44—44 for accommodating the screws 28—28. As best seen in FIG. 3, the blade 33 is mounted in such a manner that the cutting edge 43 is positioned adjacent to the front face of the block 32 and sufficiently below the bevels 36 and 42 to insure that the thread-chain can be gripped in a slot 37 or 38 before the cutting edge 43 severs the thread-chain 46. Also the cutting edge 43 is located above the bottom of any of the slots 37 or 38.

In operation the subject device functions in the following manner. After a thread-chain of sufficient length, for example, the thread-chain 46 (FIGS. 3 and 4), has been produced by the sewing instrumentalties, the standing part 47 of the thread-chain 46 is placed between an adjacent pair of the inner bevels 42—42 and is thereby guided into one of the slots 37 or 38 where, due to the resilience of one or more of the narrow teeth 39 the thread chain 46 will be securely gripped. As the thread-chain 46 is pulled downwardly, it engages the cutting edge 43 which severs the thread-chain, as shown in FIG. 5, to separate the end 48 from the standing part 47, of course, remains held after the end 48 is separated therefrom. Because the knife blade 33 is secured to the lower portion of the block 32, the blade 33 does interfere with operation of the resilient teeth 39.

Having thus set forth the nature of this invention, what I claim herein is:

1. A thread-chain holding and cutting device comprising a plastic block having a pair of teeth defining a slot therebetween, at least one of said teeth being sufficiently resilient to yield when a thread-chain is forced into said slot, and a knife blade positioned against one side face of said plastic block.

2. A thread-chain holding and cutting device comprising a plastic block having a plurality of teeth defining slots therebetween, at least one of the teeth bounding each slot being sufficiently resilient to yield when a thread-chain is forced into said slot, and a knife blade positioned against one side face of said block.

3. A thread-chain holding and cutting device comprising a nylon block having a pair of teeth defining a slot therebetween, both of said teeth having an inner bevel, said inner bevels functioning to guide a thread-chain into said slot, and at least one of said teeth being sufficiently resilient to yield when the thread-chain is forced into said slot, and a knife blade positioned against one side face of said nylon block.

4. A thread-chain holding and cutting device comprising a nylon block having a pair of teeth defining a slot therebetween, both of said teeth having an inner
bevel, said inner bevels functioning to guide a thread-chain into said slot, and at least one of said teeth being sufficiently resilient to yield when a thread-chain is forced into said slot, and a knife blade positioned against one side face of said nylon block, said knife blade having a cutting edge located sufficiently below the bevels to insure that the thread-chain will be gripped in the slot before the cutting edge severs the said thread-chain.