April 21, 1931. H. F. LIVERMORE 1,801,815

TEMPLE COIL CUTTER SPRING

Filed Dec. 23, 1927

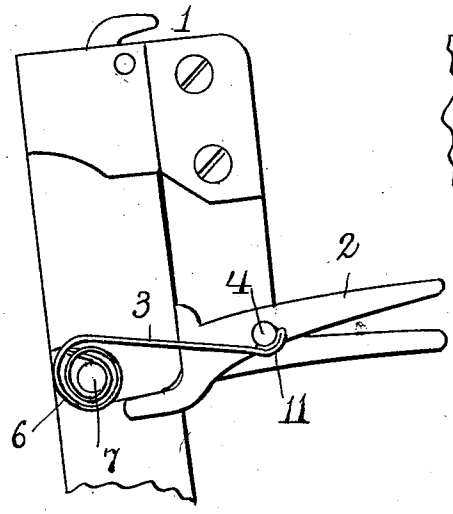


Fig. 1

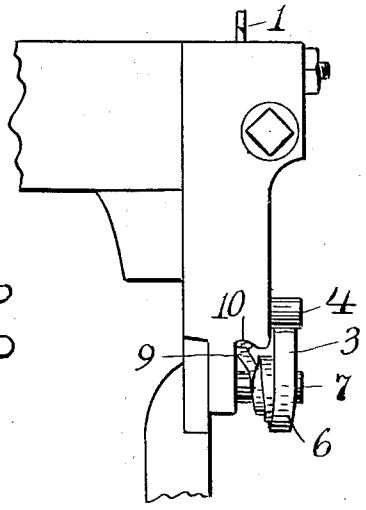


Fig. 2

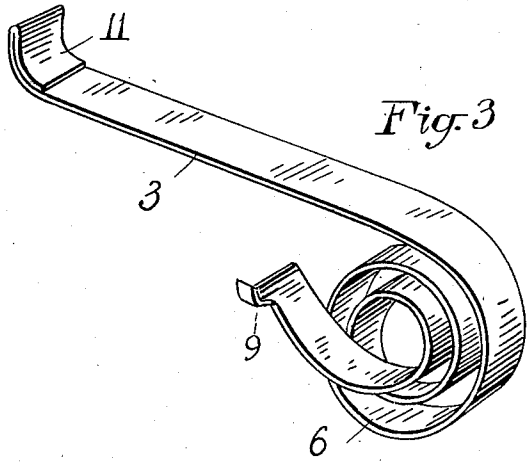


Fig. 3

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UNITED STATES PATENT OFFICE

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TEMPLE COIL CUTTER SPRING

Application filed December 23, 1927. Serial No. 242,104.

This invention relates to looms, and particularly to that portion thereof embracing the temple thread cutting device in which there is a spring for aiding in the operation of cutting the thread. Inasmuch as the reaction of the spring to the blows of the cutter actuating mechanism must be repeated many times a minute, and such blows are quite heavy and sharp, these springs are exceedingly short lived. Sometimes they last but a few days, often only a few minutes; entailing not simply the expense of their renewal, but the loss of time on the part both of the loom and of the operator. Consequently much time and expense have been expended in seeking to produce a spring which would endure for a reasonable length of time; not alone by other manufacturers, but by applicant as well. After experimentation continuing for more than two years, applicant has finally devised a spring which has a wonderfully long life; many of those which he has made and put into continuous service have lasted two years, and show no signs of giving out.

The springs as heretofore made consisted of wire bent into a helical coil at one end; but applicant has discovered that by using ribbon steel similar to that of a watch-spring but heavier and wound spirally at its base, the desired durability is obtained.

In the drawings forming part of this specification, Fig. 1 is an edge view of a part of a loom temple showing my improved spring applied thereto. Fig. 2 is a view of the same from another point of view. Fig. 3 is a perspective view of the spring on a magnified scale.

Inasmuch as I have made no change in the temple or in the cutting means, but my invention consists entirely in the formation of a new spring, I will not describe the temple further than to refer to the cutter blade 1 and the tripping lever 2 pivoted upon a stud 4.

The spring 3 composed of narrow ribbon steel, as illustrated in an enlarged form in Fig. 3, has at one end a spiral coil 6 whose innermost convolution encloses the stud 7. The terminal portion of the spiral emerges from the inner convolution and is extended tangentially and is given a laterally projecting ear 9 adapted to engage the recess 10 shown in Fig. 2, for the purpose of preventing the spring from escaping from the stud 7.

The free end of the spring is bent over on itself and given a quadrant bend, as 11, for the purpose of guarding against wear.

I prefer not only to have the coil 6 in spiral form, but to have the same of volute form for the purpose of better fitting it to present its ear 9 to the recess 10.

The reason why this spring is so far ahead in durability to the old form of wire springs is two-fold. In the first place, the thinness of the ribbon steel lessens the bending strain and consequent fracture, as compared with the round wire. Secondly, the spiral form of the coil causes the bending of the spring to be distributed throughout the coil, instead of being confined to practically the point where the spring arm leaves the helical coil of the wire form of spring, which is the point at which the wire springs universally break.

What I claim as my invention is:

1. A spring for a temple cutter constructed of ribbon material and comprising a volute coil, the inner convolution of said coil being adapted to fit the periphery of a temple stud and being extended tangentially and terminating in a laterally projecting ear, and the outer convolution being extended tangentially and constituting an actuating arm for the movable cutter member.

2. A spring for a temple cutter constructed of ribbon steel and comprising a volute coil, the inner convolution of said coil being adapted to fit the periphery of a temple stud and being extended tangentially and terminating in a laterally projecting ear, and the outer convolution being extended tangentially and constituting an arm, the latter terminating in an arcuate folded portion.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 20th day of December, 1927.

HOMER F. LIVERMORE.