June 19, 1951 A. R. BENSON 2,557,591

TEXTILE GUIDE RING

Filed Nov. 30, 1948

Fig. 1

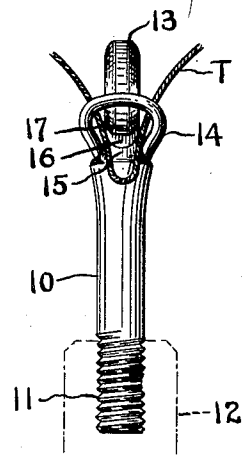


Fig. 2

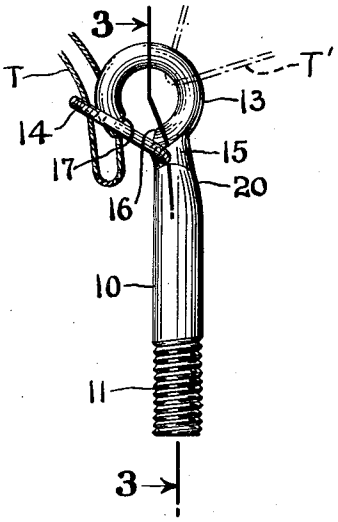


Fig. 3

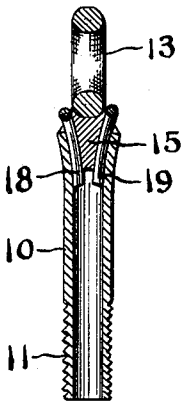


Fig. 4

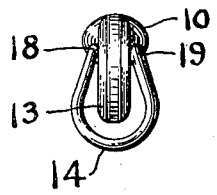


Fig. 5

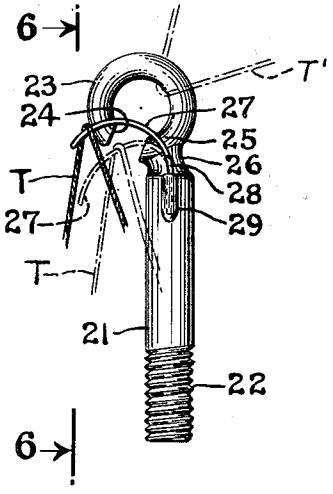


Fig. 6

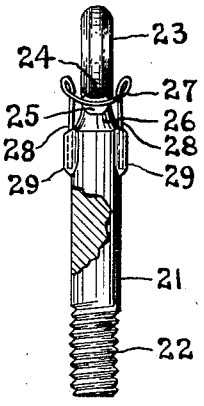
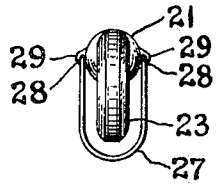


Fig. 7



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Patented June 19, 1951 2,557,591

UNITED STATES PATENT OFFICE

2,557,591

TEXTILE GUIDE RING

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Application November 30, 1948, Serial No. 62,769

7 Claims. (Cl. 242—157)

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This invention relates to guides such as are employed for traveling threads or cords used in the manufacture of textiles, tires, and other goods, and more particularly to a wear-resistant guide ring having a supporting stem.

One object of this invention is to provide a ring of the above nature which will successfully resist wear even when the threads are of very abrasive material, such as nylon.

Another object is to provide a device of the above nature having a ring formed of a hard abrasion-resistant material such as cemented tungsten carbide.

Another object is to provide a device of the above nature wherein the thread may be admitted to the ring laterally and retained positively against accidental removal therefrom.

A further object is to provide a device of the above nature which will be simple in construction, inexpensive to manufacture, easy to install and manipulate, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view, there have been illustrated on the accompanying drawing two forms in which the invention may conveniently be embodied in practice.

In the drawings,

Fig. 1 is a front view of the first form of improved textile guide ring showing a thread as it would appear in the process of insertion in the ring.

Fig. 2 is a side view of the same, in which the dotted lines show the operating position of the thread T—1.

Fig. 3 is a longitudinal sectional view, taken on the broken line 3—3 of Fig. 2.

Fig. 4 is a top view of the same.

Fig. 5 is a side view of a second form of the improved guide ring.

Fig. 6 is a front view of the same, partly broken away, looking from the line 6—6 of Fig. 5.

Fig. 7 is a top view of the same.

Referring now to the drawings in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 indicates a tubular steel stem which has a threaded lower end 11 adapted to be received in any suitable tapped base 12.

The upper end of the stem 10 has a vertical ring 13 and an inclined retaining loop of smaller diameter secured to said stem as by means of solder 15. The ring 13 may be formed of cemented tungsten carbide, or any other suitable abrasive resistant material, and is slotted to provide an inner end 16 which is disposed directly above the

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end of the stem 10, and an outer end 17 which is forwardly spaced from said inner end so as to define an opening having a width which is somewhat less than the inner diameter of the ring 13.

The retaining loop 14 is formed of stiff wire and extends in spaced relation around the outer end 17 of the ring 13, so as to permit a slack thread T to be easily passed between the retaining loop 14 and the outer ring end 17, and then into the ring 13. The wire loop 14 has downwardly bent ends 18, 19, which converge inwardly past the ring 13, and pass into the upper end of the tubular stem 10.

It will be seen from Fig. 3 that the loop ends 18, 19 are firmly secured by the solder 15 within the stem 10, the upper rear portion 20 of said stem being pressed inwardly so as to slightly spread the sides of said stem apart, and thus more readily accommodate the loop ends 18, 19 therein.

Second form

In the second form of the invention shown in Figs. 5 and 6, provision is made of a solid rod section or stem 21 which is threaded at its lower end 22, and carries a ring 23 which is slotted to provide an outer end 24 and an inner end 25 spaced therefrom and secured to the upper end of the stem 21 by means of solder 26. The slotted ring 23 may be formed of cemented tungsten carbide or other suitable hard abrasion-resistant material, and is secured to the stem 21 with its inner end 25 approximately in alignment with the front side of said stem, as in the first form of the invention.

In order to retain a thread T' in the slotted ring 23, provision is made of a U-shaped, downwardly-curved, retaining loop 27 of spring wire of small diameter, having parallel vertical ends 28 secured to opposite outer faces of the upper end portion of the stem 21, as by means of solder 29.

As shown in Fig. 7, the retaining loop 27 extends in slightly spaced relation around the lower slotted portion of the ring 23. In this form of the invention, however, a thread T may be inserted into the ring 23 by engaging said thread over the retaining loop 27 outwardly of said ring, and then depressing said loop by pulling the thread downwardly and inwardly, as shown in broken lines in Fig. 5.

When the thread T is released by the operator, the resilient retaining loop 27 will return to its normal position, as shown in full lines, thereby confining said thread within the ring 23.

Operation

In operation, the improved textile guide ring may be mounted in any suitable supporting member, such as the tapped base 12 (Fig. 1), so as to serve as a guide for an endwise moving thread T' as shown in broken lines in Figs. 2 and 5.

While the guide ring is shown in vertical position for purposes of description, it will be understood that it may be mounted at any desired inclination, and preferably will be so disposed that the normal pull of the moving thread will tend to hold said thread away from the retaining loop 14 or 27, as the case may be.

Whenever it becomes necessary to insert a new thread in the guide ring, this may be done merely by passing a loop of the thread under the outer end 17 of the ring, as shown in Figs. 1 and 2, or by depressing the retaining loop 27, as shown in Fig. 5.

One advantage of the invention herein disclosed is that it will provide a guide ring which is extremely resistant to wear.

While there have been disclosed in this specification two forms in which the invention may be embodied, it will be understood that these forms are shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosures, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

1. In a guide for a longitudinally moving thread, a ring having a pair of end portions defining a transverse slot for the admission of said thread thereto, and a thread-retaining element in the form of a loop extending across said slot inwardly of the line of the outer periphery of said ring and spaced from one of said end portions, a tubular stem, said ring being rigidly secured to said stem adjacent the other of said end portions, said thread-retaining element having its ends rigidly secured to opposite sides of said stem adjacent said other of said end portions, whereby a thread may be passed laterally between said ring and said retaining element adjacent the first end portion, and into said ring.

2. The invention as defined in claim 1, in which said loop extends around said first-mentioned end portion of said ring.

3. The invention as defined in claim 1, in which the material of said ring is cemented tungsten carbide.

4. In a guide for a longitudinally moving thread, a ring having a pair of end portions defining a transverse slot for the admission of said thread thereto, and a thread-retaining element

extending across said slot inwardly of the line of the outer periphery of said ring and spaced from one of said end portions, said retaining element comprising a loop extending around said first-mentioned end portion of said ring, a tubular stem, said loop having ends secured to said stem below said ring, said ring and said thread-retaining element being rigidly secured to said stem adjacent the other of said end portions, whereby a thread may be passed laterally between said ring and said retaining element adjacent the first end portion and into said ring.

5. In a guide for a thread moving in the direction of its length, a tubular stem, a guide ring secured to the upper end of said stem, said ring having a transverse slot for the admission of a thread thereto, and a thread-retaining element secured in said stem and extending across said slot inwardly of the line of the outer periphery of said ring in laterally spaced relation to said ring, said thread-retaining element comprising a loop having its ends disposed at opposite sides of said ring.

6. In a guide for thread moving in the direction of its length, a stem, a guide ring secured to the upper end of said stem and having a transverse slot for the admission of a thread thereto, and a thread-retaining element having a portion rigidly secured to said stem and extending across said slot, said thread-retaining element comprising a loop having ends secured to said stem below said ring.

7. In a guide for thread moving in the direction of its length, a stem, a guide ring secured to the upper end of said stem and having a transverse slot for the admission of a thread thereto, and a thread-retaining element having a portion rigidly secured to said stem and extending across said slot, said thread-retaining element comprising a loop having ends secured to said stem at opposite sides of said ring.

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