Aug. 28, 1956 W. J. LOWNEY 2,760,330

METHOD OF MAKING A RESILIENT TWISTED BAND

Filed June 11, 1952

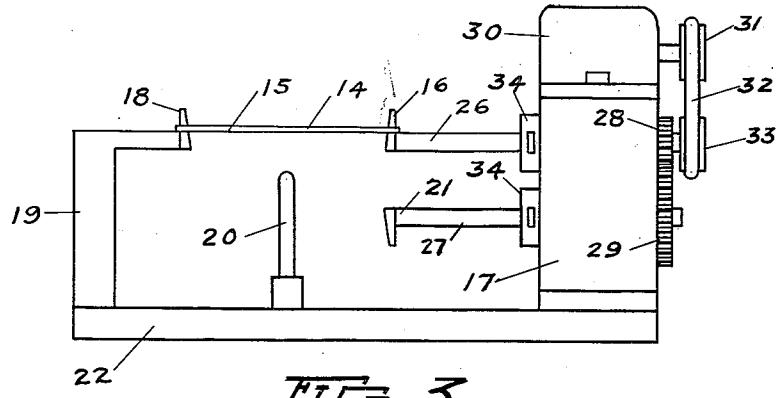


FIG. 3

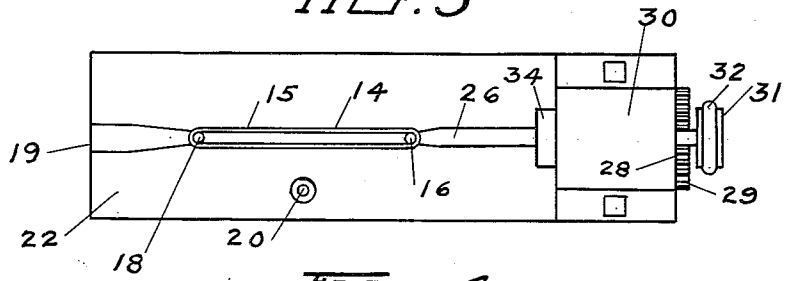


FIG. 4

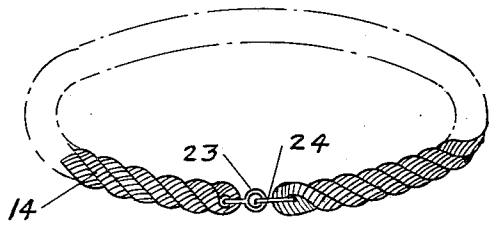


FIG. 1

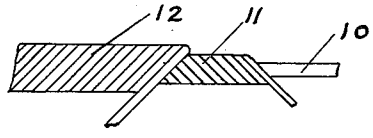


FIG. 2

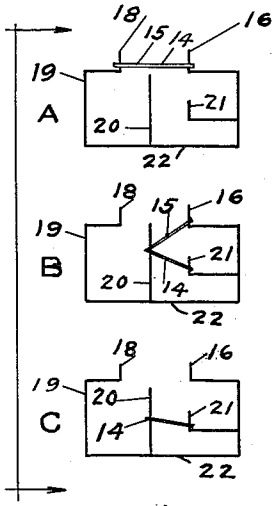


FIG. 5

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United States Patent Office 2,760,330 Patented Aug. 28, 1956

2,760,330

METHOD OF MAKING A RESILIENT TWISTED BAND

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Application June 11, 1952, Serial No. 292,846

2 Claims. (Cl. 57—158)

This invention relates to certain novel improvements in garment supporters of the twisted covered rubber thread type used to encircle the limb of the wearer.

It is among the objects of this invention to provide a resilient twisted rope band made from twisted covered rubber or elastic thread which will be extremely flexible and yieldable and which will be particularly adapted for use with hook-on boot bands.

Another object of the invention is to provide a new article of manufacture of the above described character which may be made from twisted covered rubber or elastic covered thread.

Another object of the invention is to provide a new article of manufacture consisting in the stretching of a length of bare elastic thread to a predetermined tension, and maintaining this tension while the elastic thread is covered with two coverings of either cotton, rayon or nylon, or both. The undercovering is wrapped on the bare elastic thread in one direction, while the outer covering is wrapped on the first wrapping in a reverse direction.

It is a further object of this invention to provide a new article of manufacture comprising a balanced covered elastic thread, which will lay straight without twists or kinks, and possess maximum strength.

Other objects will become apparent as the invention is more fully set forth.

For a clearer understanding of the invention and the objects thereof, reference is made to the accompanying drawings, wherein a particular form of the invention is indicated. These drawings when used in conjunction with the following description serve to illustrate the invention, its principles and the operation thereof, while the claims indicate the scope thereof.

In the drawings:

Figure 1 is a perspective view of the boot-band embodying this invention;

Figure 2 is an enlarged section of the elastic thread showing its reverse wrappings;

Figure 3 is a side elevation of the machine used for twisting the elastic covered threads after they have been formed into a loop, the loop being shown in full lines on the hooks, ready for the first operation;

Figure 4 is a plan view of Figure 3; and

Figure 5 is a diagrammatic view of the twisting operations used to produce the boot-band.

Similar reference numerals indicate the same parts throughout the drawings.

In the construction of the hook-on boot-bands, a length of bare elastic thread **10** is stretched to a specified tension, and the tension is maintained while the elastic thread **10** is covered with a covering **11** preferably of cotton thread termed the "under covering" and wrapped on the elastic thread in one direction, while the outer covering **12** preferably of nylon or rayon yarn or thread is wrapped on the "under covering" in an opposite direction. This produces a balanced covered elastic thread, which will lay straight without kinks or twist and which will have maximum strength. The amount of stretch in the finished covered thread can be regulated by the amount of tension placed on the bare rubber or elastic thread while it is being covered, and this is controlled by a feeding device, and a pull up device on a conventional thread covering machine (not shown).

The covered elastic thread **14** is formed into a loop **15** by winding on a conventional reel (not shown) to give the length of loop desired. The loop of covered elastic thread **14** (see diagram A) is stretched between a rotatable hook **16** mounted in a head stock **17** and the other end is attached to a stationary hook **18** mounted in a tail stock **19**. The hook **16** is then rotated one revolution in a clockwise direction for the first twist. The end of the loop is then removed from the hook **18**, and without releasing the twist is then brought over and around the center rod **20**, and placed on the hook **21** (see diagram B). The other end of the loop is then removed from the hook **16** and placed on the hook **21** (see diagram C). The net effect of these steps is to fold the twisted loop about its middle around the center rod as clearly shown in diagrams B and C of Figure 5. A second twist consisting of one-half revolution is then applied in a counterclockwise direction, by rotating the hook **21**. The result of this action is to twist both halves of the band together. The last mentioned twist is applied in a direction counterclockwise to that imparted originally in order to create a substantial state of balance in the finished article, since after folding the tendency to unwind in both halves of the band is exerted in opposite directions. By applying a twist in the folded band only half that of the original twist and in an opposite direction, the aforesaid state of balance is substantially obtained. The closed hook **23** is placed through the ends of the band at one end on the hook **21**, sealing the twist. An open hook **24** is placed in the opening in the loop in the opposite end. The band **14** is then impregnated with a rubber latex, which protects it against moisture and improves the wearing qualities of the band. The machine used for twisting the loop into the boot band preferably comprises rotary shafts **26** and **27** attached to the rotatable hooks **16** and **21** respectively, and mounted in a head stock **17**. Gears **28** and **29** drive the hooks **16** and **21** in opposite directions with a ratio of 2 to 1, by a motor **30** through the operation of its pulley **31**, belt **32** and pulley **33** attached to the shaft **26**. The revolutions of the hooks are recorded on a counter **34** to control the amount of twist in each band. The head and tail stock are mounted on a base plate **22**.

While but one general form of the invention is shown in the drawings and described in the specification, it is not desired to limit this application for patent to this particularly form as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. The method of preparing a hook-on boot band comprising selecting an elastic thread and tensioning same, wrapping a covering on the elastic thread, while so tensioned, in one direction, wrapping a top covering on the first covering and in an opposite direction, forming a loop with said covered thread, twisting said loop in one direction while under tension, folding the twisted loop about its center to form two equal parts while the tension is maintained, twisting the folded loop in a direction opposite to the original twist and, said twisting being also of a lesser amount than the original twist, then sealing the two adjoining ends together and sealing the opposite end, to form a band.

2. In the method set forth in claim 1, the added step of impregnating the band with rubber latex.

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