April 7, 1936. P. R. S. LARSON 2,036,482

ELASTIC SHOE LACE

Filed Nov. 17, 1934

Fig. 1.

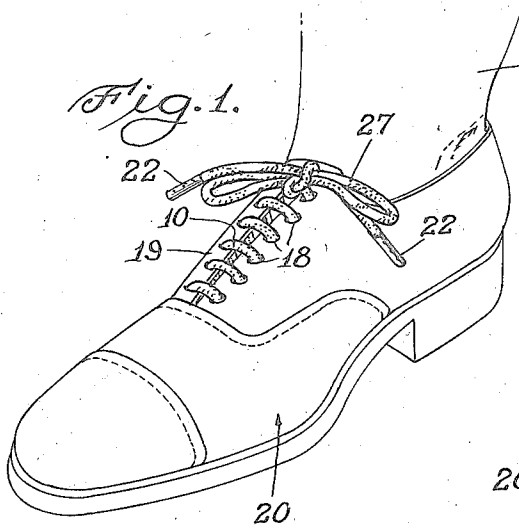


Fig. 2.

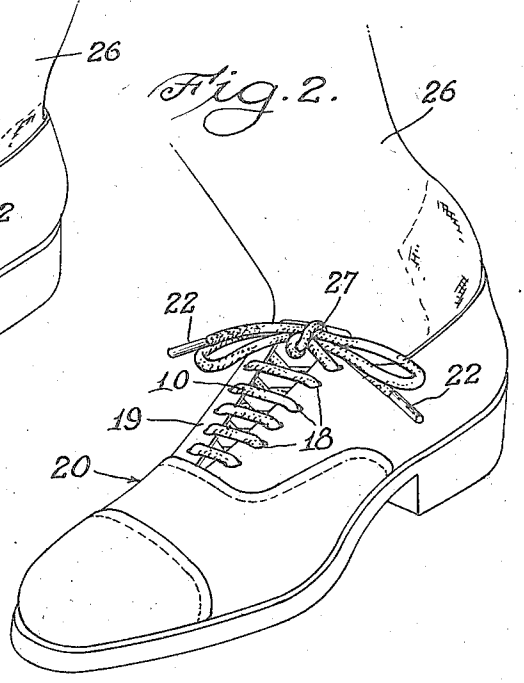


Fig. 3.

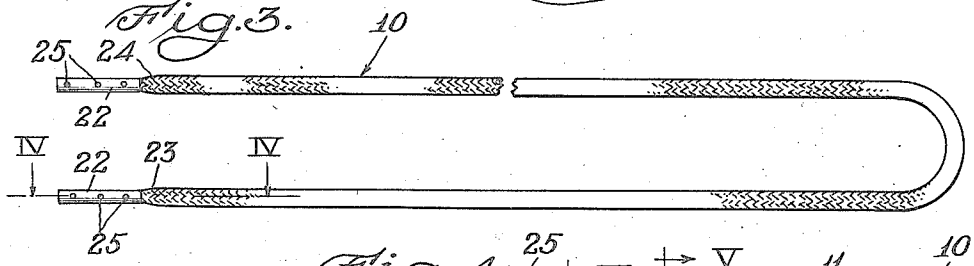


Fig. 4.

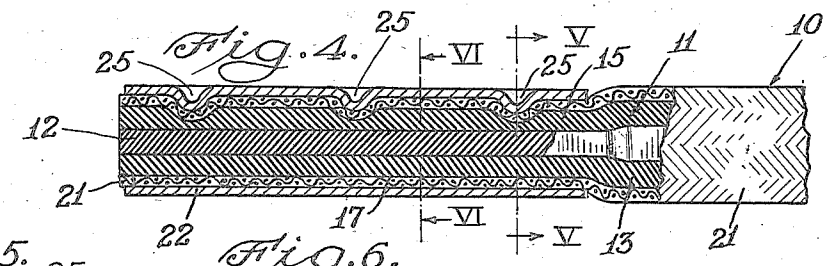


Fig. 5.

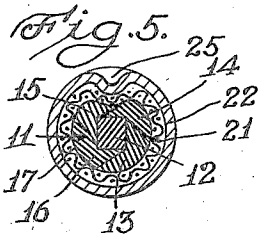
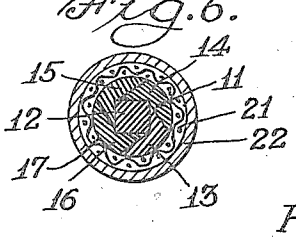


Fig. 6.



Inventor;
Philip R. S. Larson
BY
Harry C. Acuff
Attorney

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ELASTIC SHOE LACE

Philip R. S. Larson, Chicago, Ill.

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6 Claims. (Cl. 24—143)

This invention relates to shoe laces and more particularly to an elastic shoe lace, although certain features thereof may be employed with equal advantage for other purposes.

It contemplates more especially the provision of an elastic shoe lace of such construction that affords the desired characteristics utilizable to a great advantage in connection with lacing shoes for more lasting and comfortable wear.

Numerous types of shoe laces have heretofore been proposed and to some extent efforts have been directed toward an elastic tying member for lacing shoes, but these have not proven entirely satisfactory in view of certain disadvantages that accompany the use thereof in lacing shoes.

An elastic lace should be of sufficient diameter to substantially correspond in size with the eyelets or apertures provided in the upper of shoes for lacing purposes, and yet the elastic tension should not be so great so as to provide discomfort and retain the shoe laced against possible yielding during the different movements of walking locomotion. Consequently, an elastic lace must be capable of yielding to slight variations or tensions to afford maximum advantage and as such serve a fruitful purpose over the ordinary shoe lace that is essentially non-elastic.

One object of the present invention is to provide an elastic shoe lace that responds to slight variations in tension accompanying walking locomotion.

Another object is to provide an elastic shoe lace comprising a plurality of elastic strands that are complemental to each other into a unitary tying member that has the desired polygonal configuration and size without creating undue tension.

Still another object is to provide an elastic shoe lace that comprises a plurality of complemental rubber strands defining a unitary core having a fabric cover therearound to maintain the strands in assembled relation.

A further object is to provide an elastic shoe lace that is of sufficient cross-sectional size to substantially correspond with the eyelets or apertures in the uppers of shoes and yet provide sufficient elasticity to yield with the necessary movements of walking locomotion.

A still further object is to provide an elastic shoe lace having a plurality of rubber strands defining a sectional core having a fabric cover to maintain the strands in assembled relation.

Still a further object is to provide an elastic shoe lace having a plurality of rubber strands defining a sectional core having a fabric cover with rigid tips to maintain the strands in assembled relation.

Other objects and advantages will appear from the following description of an illustrative embodiment of the present invention.

In the drawing:

Figure 1 is a perspective view of a wearer's foot and shoe provided with an elastic lace embodying features of the present invention.

Figure 2 is another perspective view showing the wearer's foot being removed from the shoe without untying the lace, this requiring yielding action of the shoe lace that remains tied at all times and also exemplifies the yielding action during walking movement.

Figure 3 is a fragmentary view of a shoe lace embodying features of the present invention.

Figure 4 is a sectional view taken substantially along line IV—IV of Figure 3.

Figure 5 is a sectional view taken substantially along line V—V of Figure 4.

Figure 6 is a sectional view taken substantially along line VI—VI of Figure 4.

The structure selected for illustration comprises an elongated elastic tying member 10 which has a sectional core prepared from a plurality of elastic strands 11, in this instance five, which are complemental to each other to provide a tying member of any predetermined or selected configuration. The strands 11 have a central member 12 that is preferably though not essentially of square cross-section to extend axially through the tying member 10. A plurality of strands 13, 14, 15 and 16, in this instance four, are shaped to serve as complements of the axial strand 12 and define, in this instance, a circular periphery 17 in their complemental association.

To this end, the strands 13, 14, 15 and 16 are of irregular configuration so as to bound two adjacent surfaces of the axial strand 12 that are intersecting at its corners so as to completely enclose the axial strand 12 and provide a sectional elastic core of any desired exterior configuration to correspond in size and shape with the apertures 18 provided in the uppers 19 of shoes 20. In order to hold the strands 12 to 16 in their desired assembled relation and to render such unitary action for convenient lacing through the apertures 18 provided in shoes 20, a fabric cover 21 confines the last mentioned strands and serves to protect such against frictional wear during the lacing of shoes or while operative for retaining the latter on the foot of the wearer.

The fabric 21 may be of any desired construc-

tion and is preferably woven around the complemental strands 12 to 16, inclusive, that comprise the elastic core. It is desirable, therefore, that the fabric cover 21 be flexible so as to permit yielding of the elastic strands and yet confine the same to maintain their assembled relation that facilitates the lacing of shoes and provides the necessary resistance to wear. It is worthy of note that substantially rigid lace tips 22 may be provided on the extremities 23 and 24 of the elastic lace 10 so as to facilitate entry and passage through the apertures 18 and further to preclude fraying of the fabric cover 21.

The lace tips 22 may be of any desired metallic construction or for that matter may take the form of a fiber, special wax, glue, rubber or other composition that renders the fabric 21 rigid in the region of the extremities 23 and 24 of the shoe lace 10. With the use of metallic tips 22, these are preferably dented at uniformly spaced intervals as at 25 to provide attachment and preclude the removal thereof. The elastic strands and fabric cover 21 will be deformed in the regions of the indentations 25 to correspond therewith, thereby holding the sectional core and fabric cover 21 in assembled relation against any possible fraying or displacement.

With the use of an elastic shoe lace of the type described hereinabove, maximum elasticity is obtained with sufficient durability and diametrical size so as to correspond with the apertures 18 and yet afford yielding without undue wear incident to walking locomotion or the removal of the shoe from the foot 26. Consequently, the lace 10 remains tied at all times and the wearer can remove the shoe 26 or place such on the foot without untying the lace 10 or having such obstruct this accomplishment. The shoe will always conform with the walking movement of the foot 26 and still be comfortably associated therewith so as to provide maximum comfort and more lasting shoe lace performance.

The shoe 26 is laced in the customary manner so as to snugly embrace the foot of the wearer, and thereupon a bow 27 is made so that the elastic effect of the lace 10 will effect self-locking knot in view of the fact that the tying thereof stretches the lace, thereby precluding the accidental disappearance of the bow 27 or the untying thereof. This will afford uniform comfort to the wearer who may resort to high or low shoes whereon the elastic lace 10 may be utilized. It will eliminate unnecessary binding as well as friction of the shoe in conjunction with the wearer's foot during the various movements that flex the lace 10 in consequence of walking locomotion.

The shoe 20 will wear more uniformly and be serviceable for a longer period when an elastic shoe lace 10 of the type described above is utilized in conjunction therewith. Due to the elastic lace 10, the shoe will give with the movements of the foot so as to afford freedom to the muscles and obviate undue strain thereon. Various changes may be made in the embodiment of the invention herein specifically described without departing from or sacrificing any of the advantages of the invention as defined in the appended claims.

I claim:

1. A shoe lace comprising a plurality of elongated bare elastic strands that are complemental to each other to form a tying member of circular configuration, a textile thread woven around the assembled group of said elastic strands, and rigid tips on the extremities of said textile covered strands to maintain the latter in assembled relation to define a tying member.

2. A shoe lace comprising a plurality of elastic strands that are complemental to each other to form a single tying member of circular cross-section, and a flexible cover around said tying member to maintain said strands in assembled complemental relation.

3. A shoe lace comprising a plurality of bare elastic strands that are complemental to each other to form a single tying member of circular cross-section, a flexible cover around said tying member, and rigid tips on the extremities of said tying member to maintain said strands in assembled complemental relation.

4. A shoe lace comprising a plurality of bare elastic strands that are complemental to each other to form a single tying member of circular cross-section, and a fabric woven around said tying member to maintain said strands in assembled complemental relation.

5. A shoe lace comprising a central elastic strand, a plurality of elastic strands complemental to each other to encircle said central elastic strand to form a single tying member, a flexible cover around said tying member to maintain said strands in assembled complemental relation.

6. A shoe lace comprising a central elastic strand, of square cross-section, a plurality of elastic strands complemental to each other and said central strand to encircle said central elastic strand to form a single tying member, a flexible cover around said tying member to maintain said strands in assembled complemental relation.

PHILIP R. S. LARSON.