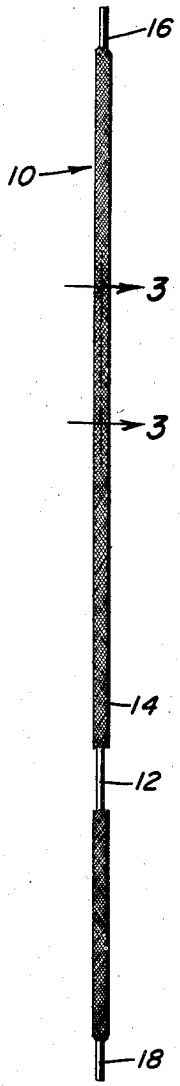
Jan. 20, 1959 R. KACOWSKI 2,869,205

EXTENSIBLE SHOE LACE

Filed Nov. 19, 1956

Fig. 1



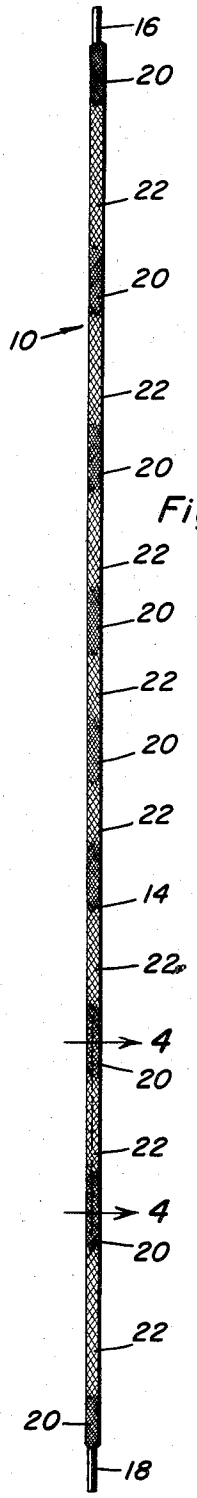




Fig. 2

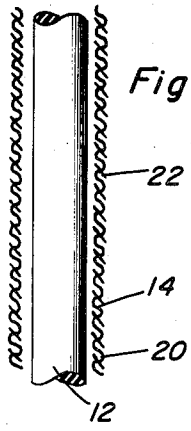



Fig. 3

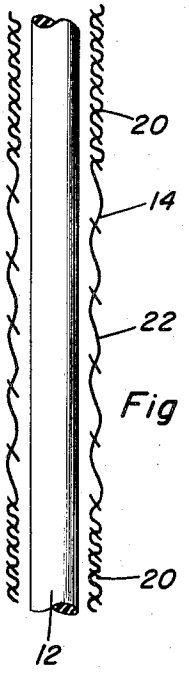



Fig. 4

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# EXTENSIBLE SHOE LACE

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4 Claims. (Cl. 24—143)

This invention relates to shoe laces and more particularly to an extensible shoe lace.

An object of the present invention is to provide an extensible shoe lace which has the extensibility controlled in accordance with positions of the length of the shoe lace so that when utilizing the same, the parts of the shoe lace which should be more extensible than others are so arranged.

In connection with the nature and substance of the invention, the shoe lace consists of an outer hollow textile covering woven densely and loosely at intermittent regular spaces, for example, from approximately one-half to one inch, increasing gradually in length away from the center of the shoe lace in both directions. An elastic cord filler made of any elastic material, as rubber, extends through the center of the hollow covering and is attached only at its ends to the cover. Therefore the cord filler is free and independent in its movement inside the hollow lace cover, except for its attachment at the ends of the hollow lace cover in the customary manner, as by metal or plastic tips.

By virtue of the construction described above the woven, textile, hollow cover and cord filler, the lace stretches and extends when tension is applied in such manner that the loosely woven sections of the lace disclose the degree of elasticity afforded by the elastic cord within the lace, while the more tightly woven portions of the lace retain their resistance and stability, with the result that when the lace is threaded through the eyelets of the shoe, the resisting portions of the lace have the effect of firmness and checking the stretch coefficient of the elastic portions of the lace. In other words, the shoe lace forming the invention is elastic in intermittent parts and firm in others.

One of the features of the invention is that the elastic cord moving freely and independently within its cover, is constantly exercising its full stretching and elastic abilities, without, at the same time, impeding the same quality of the left elastic portions of the lace.

Accordingly, it is a further object of the invention to provide an improved shoe lace capable of performance as described above so as to have a firm, tight and yet yielding, when necessary, lace for shoes.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an elevational view of the shoe lace constructed in accordance with the invention, showing the same in the non-extended position;

Figure 2 is a view similar to Figure 1 but showing the shoe lace in the extended position;

Figure 3 is an enlarged fragmentary sectional detail view taken on the line 3—3 of Figure 1 showing principally the construction of the hollow cover in the non-extended position; and



Figure 4 is an enlarged sectional view taken on the line 4—4 of Figure 2 showing the extensible cover in the extended position.

In the accompanying drawing there is a shoe lace **10** which is constructed to demonstrate the principles of the invention. The shoe lace consists of an elastic cord **12** which is constructed of rubber or other elastic material. Woven textile hollow covering **14** or an equivalent, is attached only at its ends to the elastic cord **12** by means of metal or plastic tips **16** and **18** respectively.

The principal feature of the invention is in the hollow cover **14**. It is made of alternate groups of tightly woven portions **20** and loosely woven portions **22** in order to achieve the end of having alternate substantially non-extensible and substantially easily extended portions throughout the length of the shoe lace. Starting from the center it is preferred that the easily extended portions be smaller and increasing in size (Figure 2) so that the ends of the shoe lace are more extensible than the center part thereof. This is of material importance in making it easy to tie the shoe and to have stretch when the mid-portion of the lace is disposed at the top part of the shoe with little or no stretch at the opposite part of the eyelet groups or hole groups in the shoe.

Although having loosely woven portions **22** of increasing size will achieve the result desired, it is understood that the covering need not necessarily be woven textile but may be of other materials having portions formed therein in one way or another which are more easily extended than other portions.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A shoe lace comprising an elastic center cord, a covering on said cord, means securing the ends of said covering to said cord with the intermediate part of said covering freely movable with respect to said cord, portions of said covering being more easily extensible than other portions thereof, said more easily extensible portions being shorter at the center of the covering and gradually increasing in length towards the ends thereof, said other portions being of an equal length along the covering.

2. The combination of claim 1 wherein said cover is made of a woven textile.

3. The combination of claim 1 wherein said cover is of a woven textile, with said more easily extensible portions being of a relatively loose weave while said other portions are of a relatively tight weave.

4. The combination of claim 1 wherein said cover has said more easily extensible portions composed of a woven textile of sufficient looseness of weave to effect resiliency thereof.

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