June 12, 1928. 1,673,327

P. HAHN

LACING FOR APPAREL

Filed March 18, 1927

Fig. 1.

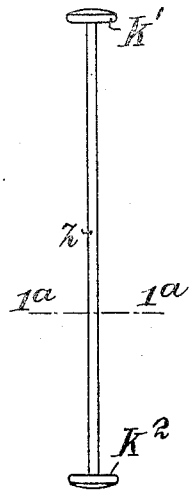


Fig. 2.

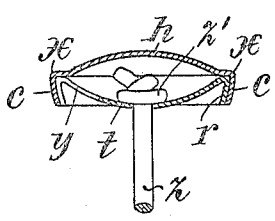


Fig. 3.

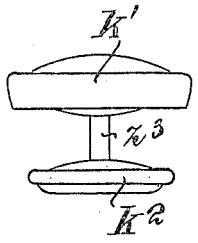


Fig. 4.

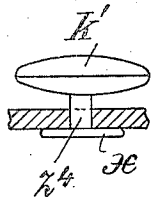


Fig. 1a



Fig. 5.

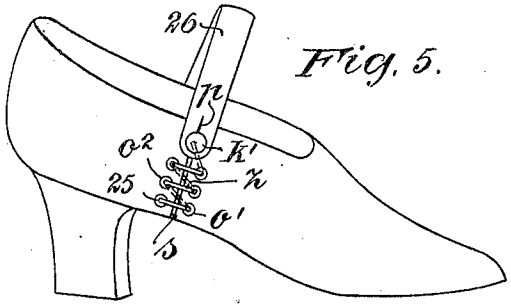


Fig. 6.

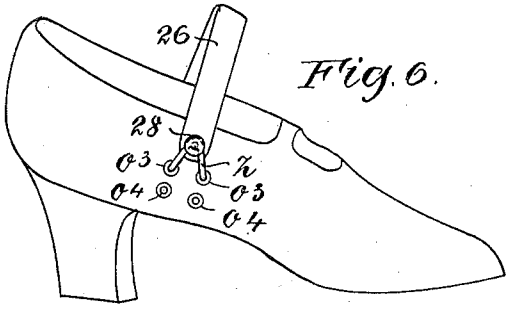


Fig. 8.

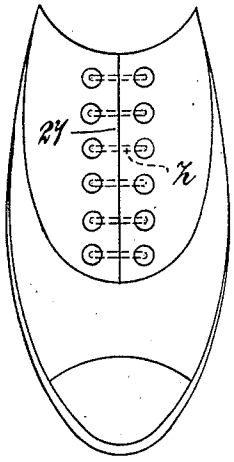
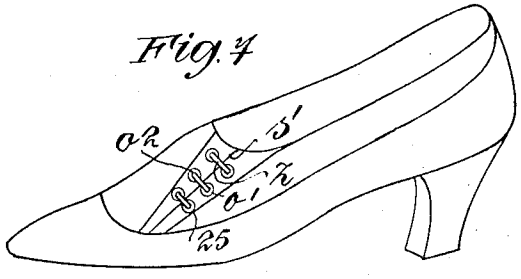


Fig. 7



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UNITED STATES PATENT OFFICE.

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LACING FOR APPAREL.

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My invention relates to improvements in lacings for apparel, and more particularly for shoes, and the object of the improvements is to provide a lacing which is comfortable in use, and which is capable of many uses and is not subject to wear for a considerable length of time. An important feature of my improved lacing is that when using the same in connection with shoes it has exactly the tension comfortable for the wearer, and it is not made so tight as to press the foot, nor is it so loose that it does not securely hold the shoe in position. With the said object in view my invention consists in manufacturing the lacing in the form of a solid rubber band or string preferably of circular cross-section and provided at both ends with suitable fastening means such as buttons, loops, hooks, and the like, the said fastening means being fixed to the string so that they can be readily adjusted thereon for varying the length of the lacing. As distinguished from lacings composed of individual spun rubber bands, my improved string is preferable because it is subject in a less degree to wear, the life of the composed rubber bands being comparatively short, because the individual threads are easily torn. Further, the appearance of my improved lacing is better for the reason that there are no projecting thread portions which in lacings now in use are produced by the tearing of one or the other of the individual threads. Further, the lacing made from a solid rubber string or band can readily be fixed to the fastening members provided at the ends thereof, and the knot or the like for fixing the string to the fastening member requires little space, so that small and tiny fastening members may be used and the lacing can be readily adapted to all the parts of the apparel such as linen, outer apparel, suspenders and the like. A very important field of the use of my improved lacing relates to shoes, and as a matter of fact the novel form of the lacing permits novel designs of shoes to be used.

For the purpose of explaining the invention several examples embodying the same have been shown in the accompanying drawings in which the same reference characters have been used in all the views to indicate corresponding parts. In said drawings,

Fig. 1, is an elevation showing my improved lacing,

Fig. 1ª, is a section on an enlarged scale taken on the line 1ª—1ª of Fig. 1,

Fig 2, is a detail sectional elevation showing one of the buttons of the lacing and the end of the string attached thereto,

Fig. 3, is an elevation similar to the one shown in Fig. 1 and illustrating a modification, the lacing having a comparatively short string thus providing a button,

Fig. 4, is an elevation showing another modification of the lacing, and

Figs. 5 to 8 are elevations showing shoes and illustrating different uses of my improved lacing.

As appears from Figs. 1 and 1ª, my improved lacing consists of a solid string z preferably circular in cross-section and made from a suitable elastic material such as rubber. In the example illustrated in the figures, a non-spun string z is used, and ordinarily I prefer to use such strings, though I do not wish to limit myself to this feature. The use of non-spun strings is preferable for the reason that the joint with the fastening means is comparatively small. In the example shown in the figures buttons k^1 and k^2 are fixed to the end of the string, and in the example illustrated in Fig. 2, the said buttons consist of a concave disk t and a cap h united so as to provide a hollow chamber adapted to enclose a knot provided at the end of the string. Referring more in detail to Fig. 2, the button comprises an outer hollow cap h formed with a flat annular portion x and a flange c, and the inner hollow portion t formed with a flange r corresponding to and embraced by the flange c. As shown both flanges are slightly bent inwardly, so that the cap h and the disk t are securely held together. The disk t is formed with a central bore of a diameter equal to the outer diameter of the string z, which therefore can be passed through the said bore. Further, the disk is formed with

a radial slit y imparting a certain elasticity to the disk and permitting a suitable tool such as a nail to be inserted for removing the disk t from the cap, as may be necessary for rearranging the connection between the string z and the button h, t. As shown the said connection is made by means of a knot z^1 made at the end of the string z. Thus, for fixing the button to the string, the string is first passed with its end through the bore of the disk t, the knot z^1 is made at a part of the string corresponding to the desired length of the lacing, and finally, the cap h is pressed on the disk t, the inwardly bent flange c thereof securely engaging the flange r of the said disk. The string z being made from solid rubber, the knot is very small, so that also the button h, t can be very neat. The knot is entirely confined within the button, the projecting end of the string having first been cut short before placing the cap h on the disk t. If in the use of the lacing it is found that the string z is too long a suitable tool such as a nail is inserted through the slit y, whereupon the disk t can be readily removed from the cap c. Now the knot z^1 is unmade, the string z is pulled farther through the bore of the said disk, and the knot z^1 is remade at the desired place, whereupon the cap h is again placed on the disk t.

It will be understood that lacings of any desired length may be made. In Fig. 3 I have shown a modification in which the length of the string z^3 is substantially equal to the length of the shank of a button, and as a matter of fact the lacing shown in the said figure is intended to be used as a button.

In Fig. 4 I have shown a modification, in which one of the buttons k^1 has substantially the form of the button shown in Figs. 2 and 3, while the other button x is exceedingly small and flat, the small dimensions of the said button being possible because the space required for the knot of the string z^4 is very small. The lacing shown in Fig. 4 is designed for use in connection with shoes, the flat button x being placed on the inner face of the said shoe.

In shoe-lacings such as are now in use, it is inconvenient to dispose of the ends of the lace, and further, the tension of the lace depends on the quality of the lacing, and the ability of the person wearing the shoe. When using my improved lacing in connection with shoes the said objections are obviated, and it is not necessary, when putting on or off the shoe to make the lacing.

In Fig. 5 I have shown a shoe provided with a strap 26 and having at each side a slit s, the margins of the said slits being provided with eyelets o^1 and o^2. For closing the said slits lacings such as have been described with reference to Fig. 1 are provided, the said lacings comprising a solid rubber string z provided at one end with a flat button such as x shown in Fig. 4 and at its opposite end with a larger button k^1, the flat button being disposed within the shoe at the rear of the eyelet 25. From the said flat button the string is passed first to the opposite eyelet o^1 and thereafter, within the shoe, to the next eyelet o^2, and back again on the outside of the shoe to the opposite eyelet o^1, etc., until finally the large button k^1 is located at the outside of the shoe. The said large button is engaged by a slit p made in the strap 26. A shoe made in the manner described and shown in Fig. 5 is comfortable in use, because, by being connected to the elastic string z, the strap 26 yields to a certain extent. Further, the shoe itself is yielding to some extent, and it follows the movements of the foot of the wearer, because the slits s are jointed by the elastic string z. It will be understood, that a similar slit and lacing are provided at the opposite side of the shoe. Of course, the use of the lacing is not limited to the manner of applying the same to the shoe, and in some cases the lacing is passed from one eyelet o^1 perpendicularly to the slit to the opposite eyelet o^2, passed from o^2 on the inner side of the shoe to the next eyelet o^2, through the latter to the outside of the shoe and perpendicularly to the slit and to the corresponding eyelet o^1, from the latter on the inner side of the shoe and on the same side of the slit to the next eyelet o^2, etc.

In the modification shown in Fig. 6, the lacing z is provided with two flat buttons such as x shown in Fig. 4, which buttons are located within the shoe, and the string z is located at the outside of the shoe to provide a loop adapted to be engaged by a button 28 fixed to the strap 26. As shown two pairs of eyelets o^3, o^3, and o^4, o^4 are provided, so that the lacing z may also be fixed to the eyelets o^4, o^4.

In Fig. 7 I have shown a shoe having a slit s^1 located near the front part of the outer side of the upper, the margins of the said slit being likewise provided with eyelets o^1 and o^2. As shown, a single lacing z is passed through the said eyelets in the manner shown in the figure, one of the flat buttons of the string being located at 25 and within the shoe. From the point 25 the string is passed across the slit s^1 and to the opposite eyelet o^2, from whence it is passed below the shoe and upwardly to the next eyelet o^1. From the eyelet o^1 it crosses again the slit s^1, whereupon it is passed inwardly through the corresponding eyelet o^2 etc. Finally it ends into a flat button which is located within the shoe. In some cases I make use of three short lacings each provided with two flat buttons and connecting corresponding eyelets o^1 and o^2.

In Fig. 8 I have shown the lacing s as

used for jointing a shoe having the usual median slit 27.

I claim:

A lacing for apparel comprising a component made of solid rubber and a disk-like or flat component connected with the first named component by knotting, the disk-like component consisting of two parts held together by frictional contact of cooperating inclined rims, one of the parts being formed with a radial slot permitting an opening tool to be passed therethrough.

In testimony whereof I hereunto affix my signature.

PAUL HAHN.