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(54) **Lace tightening article**

(57) An article for tightening together the ends of a lace (12) includes a lace end receiving device (17) having a pair of flexible, tubular members (18, 19) joined together lengthwise, each member (18, 19) including a lengthwise retaining passage therein. The end of the lace is received within, looped through and held within the tubular members (18, 19) of the lace end receiving device (17). By employing two lace end receiving devices (17), one at each end of the lace, the devices (17) may be tied together, whereby the lace (12) is tightened without the lace (12) itself touching. The ends of the flexible tubular members (18, 19) are flared outwardly. The lengthwise retaining passages (20, 21) are lubricated. An applicator tube is placed on the ends of the shoe lace (12) for pushing the shoe lace (12) through the retaining passages (20, 21).

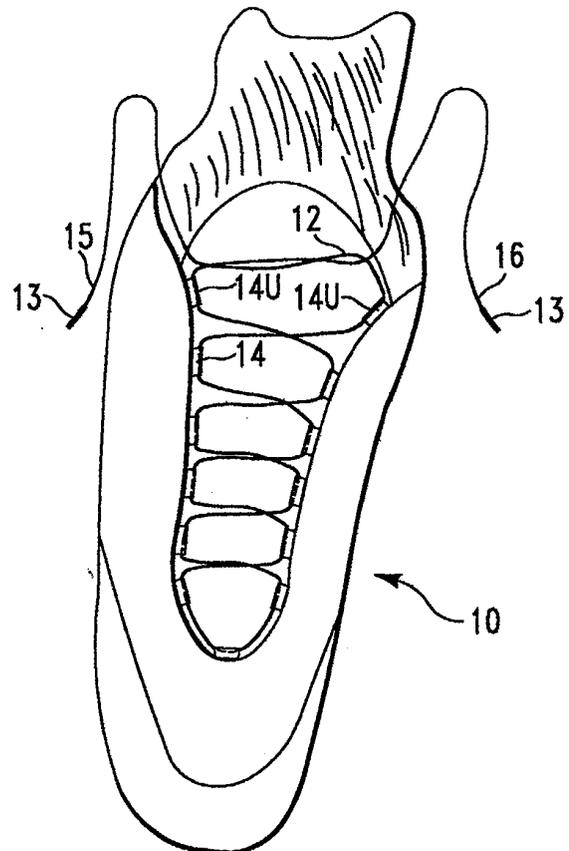


FIG. 1

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] This invention relates to an article for tightening together the ends of laces. While not so limited, the article is useful in tightening together the ends of shoe laces on a shoe.

2. Description of the Prior Art

[0002] In my prior U.S. Patent Application Serial No. 10/090,032, filed March 5, 2002, entitled "Lace Tightening Article", now U.S. Patent 6,622,358, issued September 23, 2003, there is described a lace tightening article. The description in that patent is incorporated herein by reference. Briefly, the lace tightening article in that patent includes a pair of elongated body portions, one for each end of a lace, each of the elongated body portions including a pair of flexible tubular members with lengthwise retaining passages therein through which the ends of the lace pass.

SUMMARY OF THE INVENTION

[0003] A primary object of this invention is an article for simplifying the tying of laces for children or others who may suffer from a disability. Another object is simplifying the installation of the article on the laces. These and other objects are accomplished in accordance with the teachings of the present invention, one illustrative embodiment of which comprises an improved article for tightening together opposite end portions of a shoe lace on a shoe including: a first lace end portion receiving device having; a first elongated tubular body portion of flexible material, a pair of first elongated, flexible tubular members forming the first elongated body portion, each of the first elongated tubular members including a lengthwise retaining passage therein, the first elongated tubular members receiving a loop end portion of one end portion of the shoe lace, the one end portion of the shoe lace extending in one direction through the passage in one of the first tubular members and in the opposite direction through the passage in the other first elongated tubular member, thereby holding the one end portion of the shoe lace; a second lace end portion receiving device having; a second elongated tubular body portion of flexible material, a pair of second elongated, flexible tubular members forming the second elongated body portion, each of the second elongated tubular members including a lengthwise retaining passage therein, the second elongated tubular members receiving a loop end portion of one end portion of the other end of the shoe lace, the other end portion of the shoe lace extending in one direction through the passage in one of the second tubular members and in the opposite direction through

the passage in the other second elongated tubular member, thereby holding the other end portion of the shoe lace. In accordance with one aspect of the present invention, a lubricant is disposed within the retaining passages of the first and second pairs of elongated tubular members to facilitate movement of the lace through the retaining passages when the lace tightening article is being applied to the lace. In accordance with a second aspect of the present invention, an applicator tube is placed on the ends of the shoe lace for pushing the shoe lace through the retaining passages in the first and second elongated tubular members, whereby the laces are easily fed through the first and second elongated tubular members.

[0004] In accordance with a third aspect of the invention, the ends of each of the elongated tubular members are flared outwardly to facilitate installation of the articles onto the laces.

BRIEF DESCRIPTION OF THE DRAWING

[0005] Other objects, features and advantages of the invention will be apparent from the following detailed description and accompanying drawing, wherein:

Fig. 1 is a perspective view of a shoe with lace inserted therein;

Fig. 2 is a side view illustrating the step of inserting one end of a lace in a lace receiving device;

Fig. 2A is an enlarged, cross sectional view taken along the line 2A-2A in Fig. 2;

Fig. 2B is a top view of a lace tightening device;

Fig. 3 is a perspective view, partially schematic, illustrating the placement of an applicator of the present invention on one end of a lace;

Fig. 4 is a top view of the applicator of the present invention, partially cut away;

Fig. 5 is a perspective view and partly schematic in which the applicator is being used to push a lace through a lace receiving device;

Fig. 6 is a fragmentary, perspective view illustrating the step of tying together lace receiving devices on the opposite ends of a lace; and,

Fig. 7 is a perspective view of a shoe illustrating the completely installed article of the present invention with lace tightening articles tied together for tightening the shoe lace on the shoe.

DETAILED DESCRIPTION

[0006] A shoe 11 is shown in Fig. 1 with a lace 12 having tips 13, threaded through a series of holes or loops 14. The lace 12 is typically of cloth, leather or plastic. First 15 and second 16 ends of the shoe lace 12 extend through the top holes or loops 14U.

[0007] In Fig. 2, the first end 15 of the shoe lace 12 is shown looped through a first lace end receiving device 17. Referring to Figs. 2, 2A and 2B, the device 17 is seen

as having a pair of tubular members 18,19 joined together lengthwise, each member including a lengthwise passage 20,21 extending therethrough.

[0008] The lace 12 is looped through the device 17 by pushing it up through the first passage 20 and down the second passage 21 and in the manner to be described in more detail hereafter.

[0009] It should be noted that the ends of the tubular members are flared outwardly to make it easier to install the device on the lace.

[0010] The same procedure of looping a lace through a device is followed with the opposite end 16 of the lace 14.

[0011] Each device is typically 2 3/4 inches long with passages of 1/4 inch diameter and made as a single piece from non-toxic, flexible plastic. The plastic is such as to retain the lace within the passages without slippage and when tied together, to be described hereafter, to remain tied. The device 17 can be made available in a variety of colors. The tubular members flare out between one eighth and one quarter inch.

[0012] In accordance with one aspect of the present invention, a lubricant 22 is provided within the passages 20,21. Typically, when the device 17 is being formed, there is a simultaneous, dual extrusion, with the outside surface being tacky, and the inside passage forming a slippery liner. The lubricant, as, for example, powdered talc, is introduced into the material forming the slippery interior liner. Although talc is mentioned specifically, any common lubricant may be introduced which serves to facilitate movement of the lace through the interior passages 20,21.

[0013] Referring to Figs. 3 and 4, and in accordance with another aspect of the present invention, an applicator 23 is mounted on the tip 13 of one end of the lace 12. The applicator may be, for example, a tube of plastic material that fits snugly about the tip 13.

[0014] Then, as illustrated in Fig. 5, the applicator 23 and lace 12 are pushed through the lace end receiving devices 17. The applicator 23 makes it easier to install devices on the lace and helps to feed the lace through the passages 20,21.

[0015] In Fig. 6, with the ends of the lace looped through the devices, and the proximal ends of the devices preferably close to or against the top holes 14U in the shoe 11, the devices 17 are twisted, pulled and tied.

[0016] Fig. 7 shows the devices 17 tied together, thereby tightening the shoe laces on the shoe.

[0017] There is no requirement to attach anything to the shoes or modifying the shoes themselves in any way.

[0018] It is not necessary for the lace to touch itself. Fraying of the lace is minimal since there is no knotting of the lace or rubbing between parts of a lace. The laces can not go back into the lace holes.

[0019] The laces do not come loose thus avoiding tripping from a loose lace.

[0020] It is easier for a child to tie this than tying a lace

and is a teaching tool for when a child is able to tie a lace alone.

[0021] Older persons will find it easier to use than lacing one's shoes.

[0022] The invention may also be used with laces for other types of footwear, clothing, packaging and containers.

[0023] It should be obvious that changes, additions and omissions may be made in the details and arrangement of parts without departing from the spirit and scope of the invention as hereinafter claimed.

Claims

1. An improved article for tightening together opposite end portions of a shoe lace on a shoe comprising:

a first lace end portion receiving device including;

a first elongated tubular body portion of flexible material,

a pair of first elongated, flexible tubular members forming the first elongated body portion,

each of said first elongated tubular member including a lengthwise retaining passage therein,

the first elongated tubular members receiving a loop end portion of one end portion of the shoe lace,

the one end portion of the shoe lace extending in one direction through the said passage in one of said first tubular members and in the opposite direction through the said passage in the other first elongated tubular member, thereby holding the one end portion of the shoe lace;

a second lace end portion receiving device including;

a second elongated tubular body portion of flexible material,

a pair of second elongated, flexible tubular members forming the second elongated body portion,

each of said second elongated tubular members including a lengthwise retaining passage therein,

the second elongated tubular members receiving a loop end portion of one end portion of the other end of the shoe lace,

the other end portion of the shoe lace extending in one direction through the said passage in one of said second tubular members and in the opposite direction through the said passage in the other second elongated tubular member, thereby holding the other end portion of the shoe lace; and,

means for facilitating movement of a lace into and through the retaining passages of said first and second elongated tubular members.

- 2. The article of claim 1 wherein the retaining passages of said first and second pairs of elongated tubular members are lubricated. 5
- 3. The article of claim 1 including an applicator tube to be placed on the end of the shoe lace for pushing the shoe lace through the retaining passages in said first and second elongated tubular members. 10
- 4. The article of claim 1 wherein the ends of the elongated members are flared outwardly. 15

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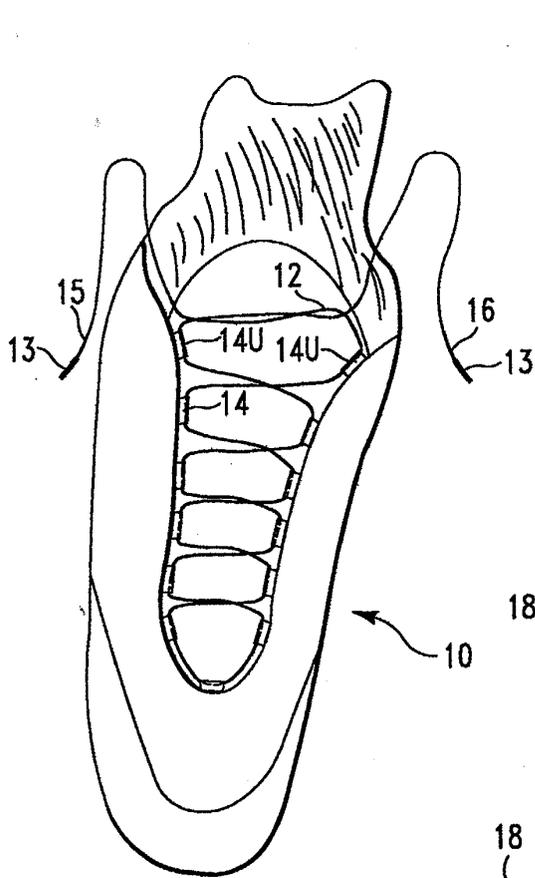


FIG. 1

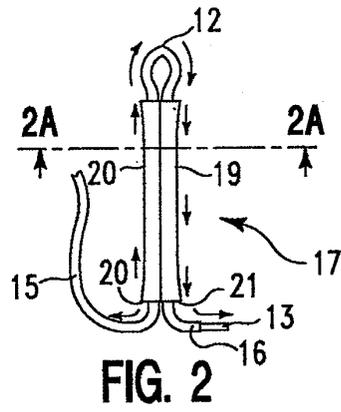


FIG. 2

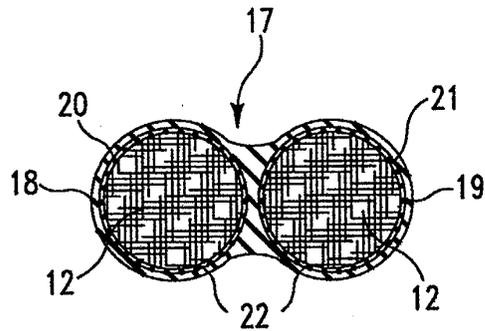


FIG. 2A

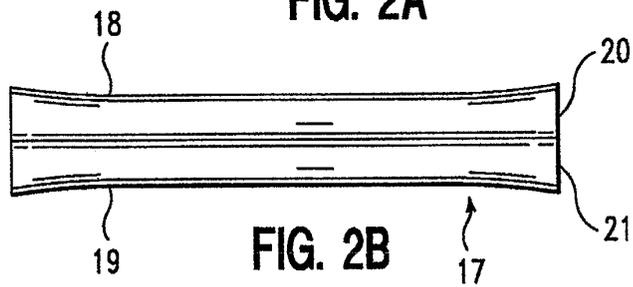


FIG. 2B

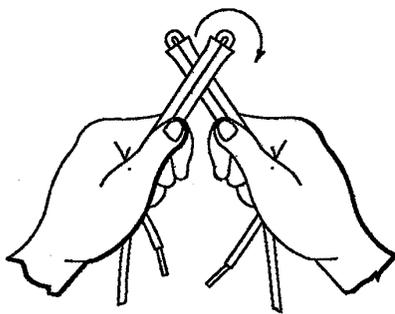


FIG. 6

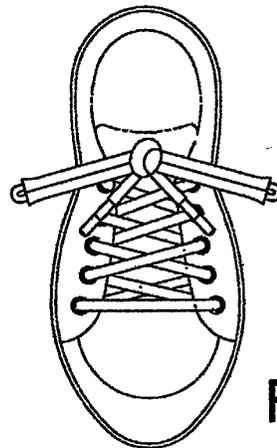
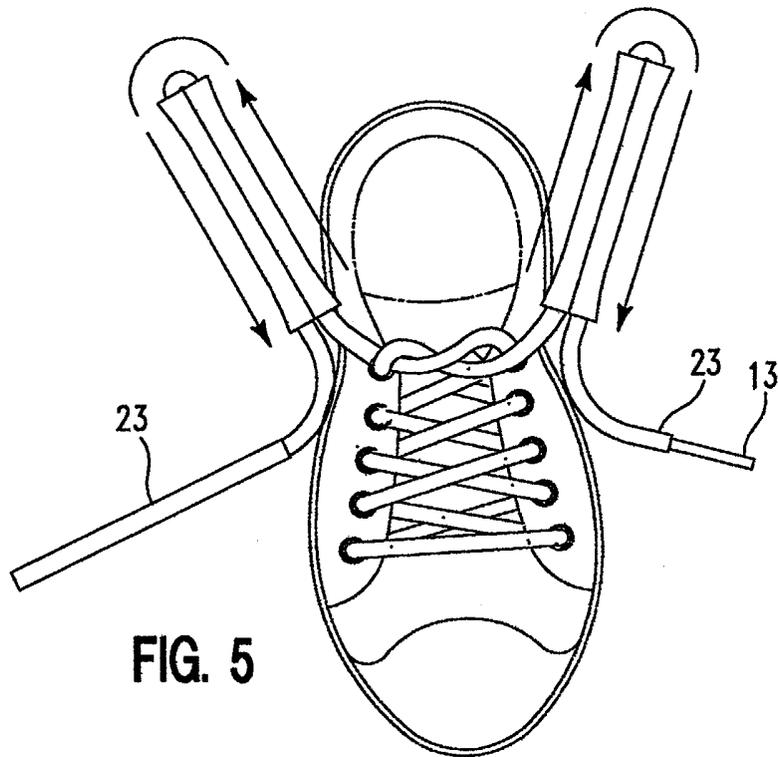
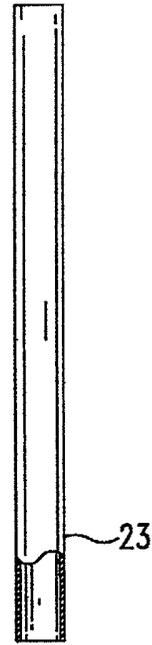
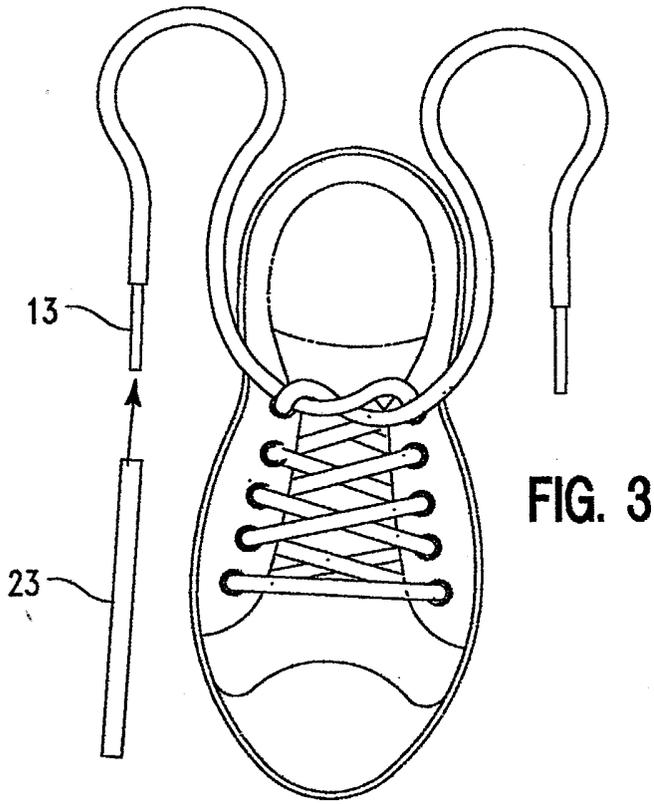


FIG. 7





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	GB 2 261 013 A (CHRIS * PIPONIDES) 5 May 1993 (1993-05-05) * figure 6 *	1	A43C7/00 A43C9/04
X	----- US 6 105 218 A (REEKIE ET AL) 22 August 2000 (2000-08-22) * column 1, lines 39,40 - column 2, lines 28-38; claims; figures *	1	
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 September 2005	Examiner Herry, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 25 5607

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on the European Patent Application. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82