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EUROPEAN PATENT APPLICATION

21 Application number: **85300990.0**

51 Int. Cl.⁴: **A 43 C 11/20**

22 Date of filing: **14.02.85**

43 Date of publication of application: **20.08.86**
Bulletin 86/34

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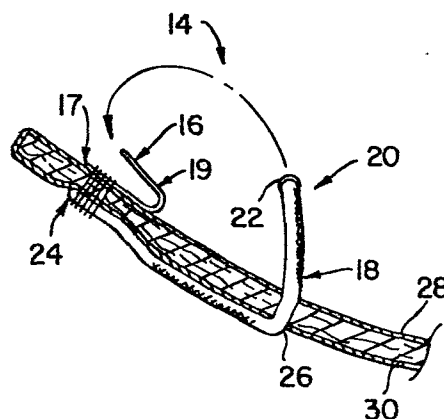
64 Designated Contracting States: **AT BE CH DE FR GB IT LI LU NL SE**

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64 **Improved reusable tying device.**

67 The invention relates to a shoe (10) with a tongue (12) and laces comprising:

- (a) retainer means (16; 46);
- (b) said tongue (12) having a front face (28) and a rear face (30);
- (c) said retainer means (16; 46) being affixed to the front face (28) of said tongue (12);
- (d) a slot (26) extending entirely through the front face (28) and the rear face (30) of said tongue (12), said slot (26) being displaced from said retainer means (16; 46) sufficiently to permit a knot to be tied therebetween;
- (e) an elastic band (18) having a fixed end (24) and a distal end (20), said fixed end (24) being fixed to the rear face (30) of said tongue (12) and said distal end (20) being arranged for extending through said slot (26) for engagement with said retainer means (16; 46); and
- (f) said elastic band (18) being configured to extend over a tied knot of the laces, to interengage with said retainer means (16; 46), and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied. In one embodiment the retainer means comprises a hook member (16). Alternatively the retainer means can be one part of a separable fastener, the complementary part of which is carried by the distal end of the elastic band.



IMPROVED REUSABLE TYING DEVICE

A well known problem with shoe laces, other types of laces and similar items which are tied together is that they may often become untied requiring the wearer to stop whatever activity he or she is pursuing and to re-tie the shoe laces to a satisfactory position. Particularly with respect to children and their play activities, this places a burden on their parents and other adults around them. Sports activities can virtually stop play altogether or require a player to be removed from a game until his laces are properly tied. In other sports loose or untied shoe laces may cause an athlete to lose his concentration and adversely affect performance.

The form of attachment to the shoe laces should make the tying device relatively easy to secure to the shoe while exposing the knot in a manner which is acceptable to the purchasing public. Although tying devices have been used before, these typically involve devices which are actually removable from the shoe. Although these tying devices are advantageous, for some purchasers it is more desirable to have a tying device which is permanently secured to the shoe and is reasonably unobtrusive. The invention described herein overcomes some of the deficiencies discussed above and fills a need in the marketplace.

According to the invention there is provided a shoe with a tongue and laces comprising:

- (a) retainer means;
- (b) said tongue having a front face and a rear face;
- (c) said retainer means being affixed to the front face of said tongue;
- (d) a slot extending entirely through the front face and the rear face of said tongue,

said slot being displaced from said retainer means sufficiently to permit a knot to be tied therebetween;

(e) an elastic band having a fixed end and a distal end, said fixed end being fixed to the rear face of said tongue and said distal end being arranged for extending through said slot for engagement with said retainer means; and

(f) said elastic band being configured to extend over a tied knot of the laces, to interengage with said retainer means, and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied.

In one embodiment said retainer means comprises a hook member affixed to the front face of said tongue and said elastic band is configured to extend over a tied knot of the laces and said hook member, to retract within the hook member, and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied.

The fixed end of said elastic band is preferably fixed to the rear surface of said tongue at a position substantially opposed to said hook member fixed to the front face of said tongue. Said distal end of said elastic band may further comprise a metal sleeve circumscribing the band, said metal sleeve configured and located to engage the hook member. Conveniently said hook member and said elastic band are affixed to said tongue by being sewn thereto.

In another embodiment said retainer means comprises one part of a separable fastener affixed to the front face of said tongue, and said elastic band carries on its distal end a complementary part of said separable fastener for engagement with said one part, said elastic band being configured to extend over a tied knot of the

laces, to permit interengagement of said separable fastener parts, and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied. In this case the fixed end of said elastic band may be fixed to the rear surface of said tongue at a position substantially opposed to said one part of said separable fastener fixed to the front face of said tongue.

Preferably said distal end of said elastic band further comprises a metal sleeve circumscribing the band, said metal sleeve carrying said complementary part of said separable fastener. Conveniently said one part of said separable fastener and said elastic band are affixed to said tongue by being sewn thereto. Said one part of said separable fastener may be a loop member and said complementary part may be a hook member for interengagement with said loop member.

In order that the invention may be clearly understood and readily carried into effect, some preferred embodiments thereof will now be described, by way of example only, with reference to the accompanying drawings, wherein:-

Figure 1 is a perspective view of a preferred embodiment of a shoe employing a tying device of the invention;

Figure 2 is a partial cross-section view taken along line 2-2 of Figure 1;

Figure 3 is a large perspective view showing the tying device in a closed position secured about the knot formed by tied shoe laces;

Figure 4 is a perspective view of another embodiment of a shoe employing a tying device of the invention;

Figure 5 is a partial cross-section view taken along line 5-5 of Figure 4; and

Figure 6 is a large perspective view showing the

tying device in a closed position secured about the knot formed by tied shoe laces.

Referring to the drawings, and to Figures 1 to 3 thereof in particular, the device or tying mechanism 14 in a first embodiment of the invention is actually secured to tongue 12 of shoe 10. The tying device includes a hook member 16 having a shank end 17 and a distal hook end 19 for receiving a portion of an elastic band. Shank end 17 is secured to tongue 12 just above the area of where the shoe laces are normally tied. Hook 16 in the preferred embodiment is simply sewn to the tongue at the position shown; however, other securing means may be employed so long as it does not interfere with the operation of the hook end 19.

Displaced from beneath hook 16 is a slot 26 cut into the tongue 12 at a position where the laces can be tied into a knot between slot 26 and hook 16. Extending through slot 12 is an elastic band 18 having a distal end 20 for cooperating with hook 16 and a fixed end 24 which is fixed to the rear surface 30 of tongue 12. As shown in the preferred embodiment of Figure 2 the fixed end 24 is sewn through the tongue 12 opposite shank 17 of hook 16. The distal end 20 of elastic band 18 carries a metal sleeve 22 for cooperating with hook end 19. The elastic band has dimensions such that it can be stretched sufficiently to engage both sides of a shoe lace knot from either side thereof when hooked into the hook 16 as shown in Figure 3. At this position the knot will be retained in place until the laces are untied by the user.

In operation the shoe laces are tied in a knot as they normally would be with the user insuring that the knot as tied falls between the hook 16 and the slot 26 such that the distal end or exposed portion of the elastic band 18 falls beneath the knot. Once the knot is tied, the elastic band is pulled over the knot into a position

where the sleeve falls between the hook end 19 and the shank 17.

The force of the elastic band then retracts the sleeve in place to maintain the elastic band within hook 16 and secured about the knot of the shoe laces. In this position the knot will remain tied until the user removes the elastic band from hook 16. The elastic band members are maintained in a tension about the knot and grasp the knot from opposed sides to hold the knot in place. The knot with this configuration for the most part is exposed for view and has an appearance which is acceptable to the purchasing public.

Another embodiment is shown in Figures 4 to 6 where it can be seen that a device similar to that shown in Figures 1 to 3 is employed utilizing a hook and loop type separable fastener in lieu of the hook and sleeve mechanism. As many elements are substantially identical in both embodiments, only those elements which are different will be discussed in detail with respect to the second embodiment.

The device of Figures 4 to 6 includes a separable fastener of the hook and loop type where one part includes loop material and a complementary part includes hook material. These parts interengage and are prevented from becoming disengaged until they are peeled apart by the user. As shown, a loop member pad 46 is secured to the front face 28 of tongue 12. A complementary hook portion 40 is secured to sleeve 42 at the distal end of elastic band 18. In this manner, once elastic band 18 is pulled over the lace knot as shown in Figure 6, the hook members 44 interengage with the pile 48 to secure elastic band 18 in place about the knot with portions of the band engaging the knot from either side to prevent it from becoming untied. To disengage elastic band 18, sleeve 42 is simply peeled away from the loop

member pad 46.

The operation of this second embodiment is substantially identical to that described in the first except, of course, to secure the elastic band over the knot, the complementary hook portion is simply pressed in the loop member pad 46.

CLAIMS:

1. A shoe (10) with a tongue (12) and laces comprising:
 - (a) retainer means (16; 46);
 - (b) said tongue (12) having a front face (28) and a rear face (30);
 - (c) said retainer means (16; 46) being affixed to the front face (28) of said tongue (12);
 - (d) a slot (26) extending entirely through the front face (28) and the rear face (30) of said tongue (12), said slot (26) being displaced from said retainer means (16; 46) sufficiently to permit a knot to be tied therebetween;
 - (e) an elastic band (18) having a fixed end (24) and a distal end (20), said fixed end (24) being fixed to the rear face (30) of said tongue (12) and said distal end (20) being arranged for extending through said slot (26) for engagement with said retainer means (16; 46); and
 - (f) said elastic band (18) being configured to extend over a tied knot of the laces, to interengage with said retainer means (16; 46), and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied.
2. A shoe according to claim 1, in which said retainer means comprises a hook member (16) affixed to the front face (28) of said tongue (12) and in which said elastic band (18) is configured to extend over a tied knot of the laces and said hook member (16), to retract within the hook member (16), and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied.
3. A shoe according to claim 2, in which the fixed

end (24) of said elastic band (18) is fixed to the rear surface (30) of said tongue (12) at a position substantially opposed to said hook member (16) fixed to the front face (28) of said tongue (12).

4. A shoe according to claim 2 or claim 3, in which said distal end (20) of said elastic band (18) further comprises a metal sleeve (22) circumscribing the band (18), said metal sleeve (22) configured and located to engage the hook member (16).

5. A shoe according to any one of claims 2 to 4, in which said hook member (16) and said elastic band (18) are affixed to said tongue (12) by being sewn thereto.

6. A shoe according to claim 1, in which said retainer means comprises one part (46) of a separable fastener affixed to the front face (28) of said tongue (12), in which said elastic band (18) carries on its distal end (20) a complementary part (40) of said separable fastener for engagement with said one part (46), and in which said elastic band (18) is configured to extend over a tied knot of the laces, to permit interengagement of said separable fastener parts (46, 40), and to grasp the knot from opposed sides with sufficient tension to impede the knot from becoming untied.

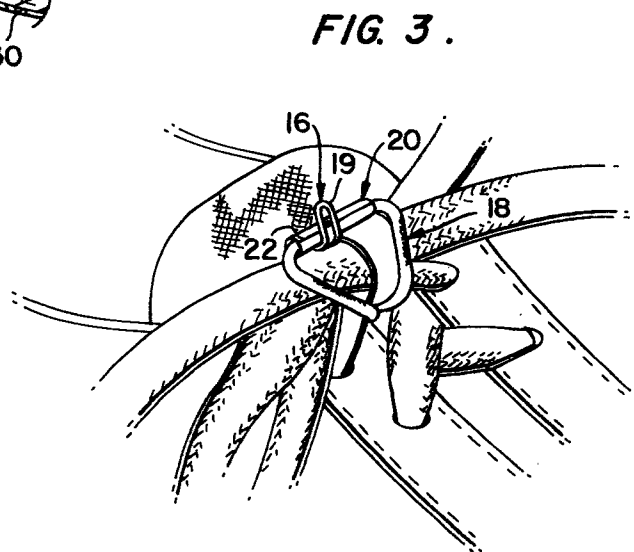
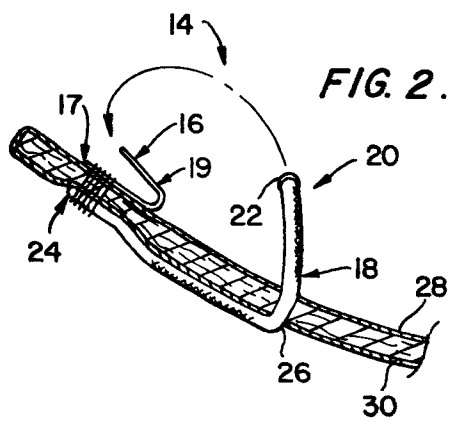
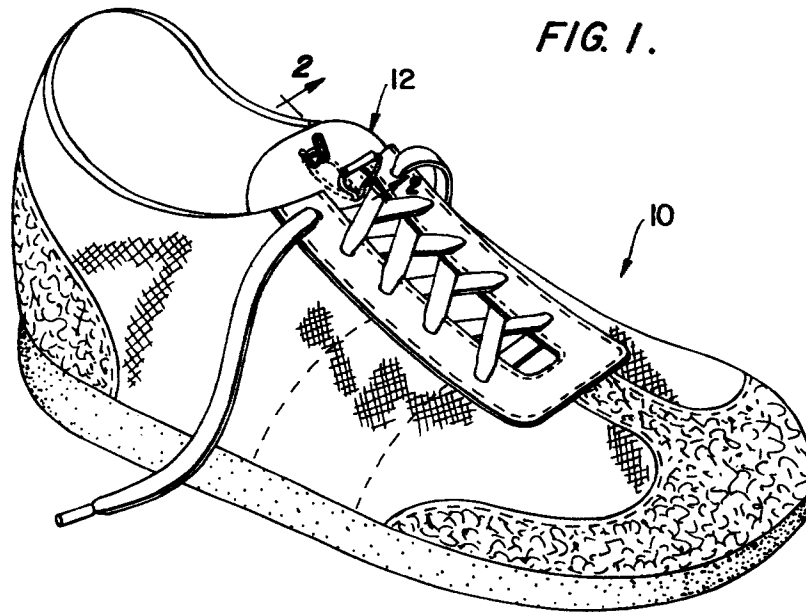
7. A shoe according to claim 6, in which the fixed end (24) of said elastic band (18) is fixed to the rear surface (30) of said tongue (12) at a position substantially opposed to said one part (46) of said separable fastener fixed to the front face (28) of said tongue (12).

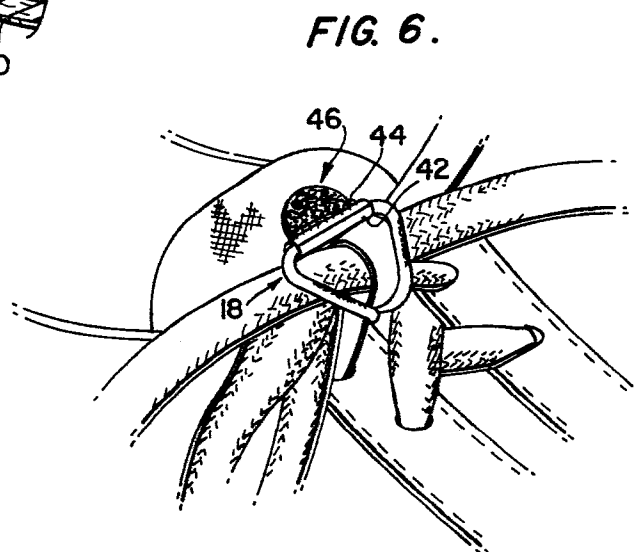
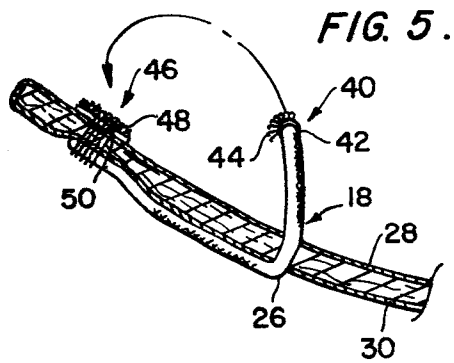
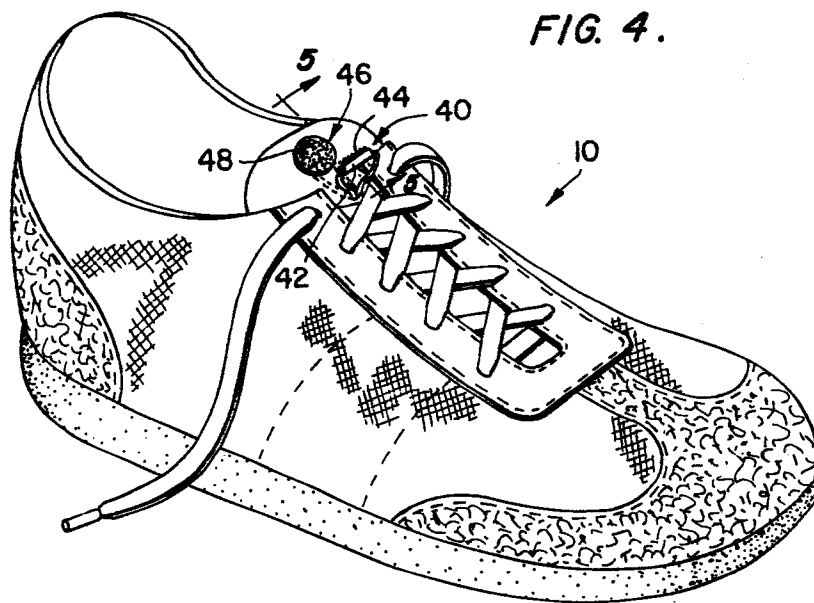
8. A shoe according to claim 6 or claim 7, in which

said distal end (20) of said elastic band (18) further comprises a metal sleeve (42) circumscribing the band, said metal sleeve (42) carrying said complementary part (40) of said separable fastener.

9. A shoe according to any one of claims 5 to 8, in which said one part (46) of said separable fastener and said elastic band (18) are affixed to said tongue (12) by being sewn thereto.

10. A shoe according to any one of claims 6 to 9, in which said one part (46) of said separable fastener is a loop member and said complementary part (40) is a hook member for interengagement with said loop member.







European Patent
Office

EUROPEAN SEARCH REPORT

0191211

Application number

EP 85 30 0990

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.4)
A	US-A- 879 272 (C.J. KEY) * Abstract; figures *	1	A 43 C 11/20
A	--- US-A- 647 824 (A.M. GIRTANNER) * Abstract; figures *	1	
A	--- US-A-1 386 985 (G.L. BOWERS) * Claims 1-3; figures 1-4 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			A 43 C A 43 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15-05-1986	Examiner MALIC K.
CATEGORY OF CITED DOCUMENTS 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 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			