May 12, 1964 D. P. RUSSELL 3,132,394

PROTECTIVE DEVICES FOR KNOTS OF SHOE LACES

Filed Nov. 30, 1961

Fig. 1

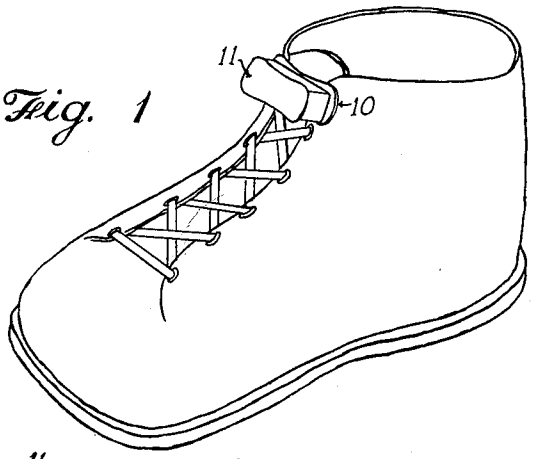


Fig. 2

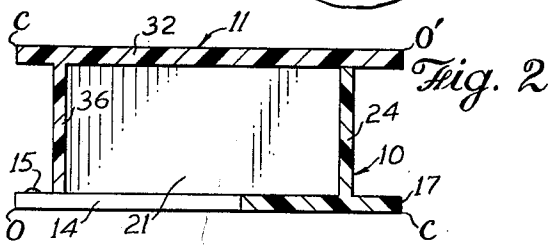
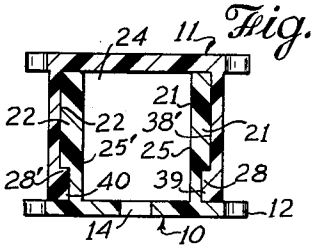
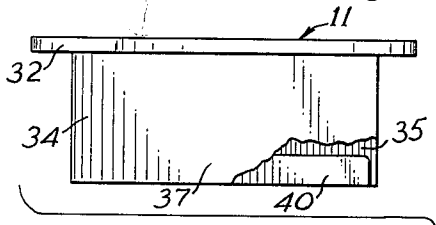


Fig. 3





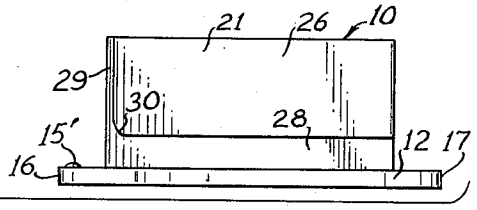
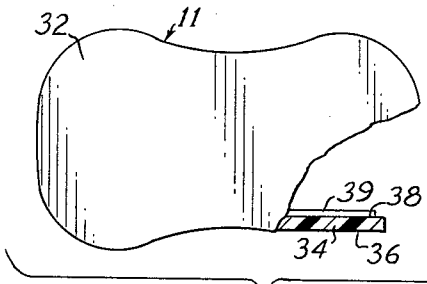


Fig. 4



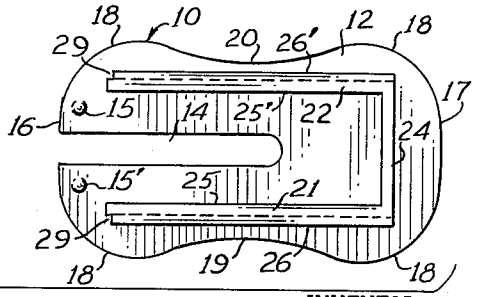


Fig. 5

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PROTECTIVE DEVICES FOR KNOTS OF SHOE LACES

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This invention relates to protective devices for knots of shoe laces, and is more particularly concerned with a device to prevent children from untying their shoes while also acting as a decorative attachment for shoes.

Young children who wear shoes with laces frequently untie their laces, causing a hazard for the child in that he may trip on the laces; therefore, adults spend considerable time re-tying the laces.

The device of the present invention provides a protective encasement for the knot in the laces, rendering the knot inaccessible to the child; also, the device may be made in numerous attractive designs to lend a decorative touch to the shoe. Such designs may also be such that older children may use the devices for decorative purposes; therefore, the device of the present invention is not restricted to use by young children.

Briefly, the device of the present invention includes a base receptacle open at one end and the top and having an open ended slot for receiving shoe laces. The receptacle is so formed as to surround the knot of the laces, and to dispose the knot and bows thereof within walls of the receptacle. A complementary cover receptacle interengages the base receptacle to close the open end and top so that the knot and bows are completely enclosed. Though a small child can not open or close the device, it is a simple matter for an adult to do so.

It is therefore an object of the present invention to provide a device which will prevent young children from untying their shoe laces.

It is another object of the present invention to provide a decorative attachment for shoes, which attachment is very simple to install and remove.

A further object of the present invention is to provide a device to encase the knot in a shoe lace, which device is simple in operation, durable in structure, and well designed to meet the demands of economic manufacture.

Other and further objects, features and advantages of the present invention will become apparent from a consideration of the following specification taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of a shoe with one preferred embodiment of the present invention encasing the bow-knot in the lace of the shoe.

FIG. 2 is a longitudinal cross sectional view of the device shown in FIG. 1.

FIG. 3 is a transverse cross sectional view of the device shown in FIG. 1.

FIG. 4 is a side elevational view, partially broken away, of the device showing the two pieces taken apart.

FIG. 5 is a top plan view, partially broken away, of the device as shown in FIG. 4.

Referring now more particularly to the drawings, and to that embodiment chosen by way of illustration, the device comprises a two-piece closure including a pair of interengaged receptacles **10** and **11**. The base receptacle **10** includes a flat base member **12** which has an open ended medial longitudinal slot **14** extending from one end of the base member **12** and terminating slightly past the transverse center line of the base member **12**. On the upper surface of base member **12**, on each side of the open end of slot **14** and slightly inwardly of the edge of member **12** are a pair of upstanding semi-spherical bosses or protrusions **15** and **15'**. The configuration of the base member **12** itself is generally rectangular having large

radius convex central end portions **16** and **17**, the end portions **16** and **17** merging with smaller radius corners **18**. The opposed side portions **19** and **20** of base member **12** are concaved and merge with the corner radii **18**.

Slightly inwardly of side portions **19** and **20** and parallel to the longitudinal, center line of base member **12** are a pair of opposed upstanding rectangular side walls **21** and **22**, joined at one end by end wall **24**, adjacent end portion **17** of base member **12** and spaced inwardly therefrom. The walls **21**, **22** and **24** thus are normal to base member **12** and form three sides of a rectangle, having the open side facing end portion **16** of base member **12**, while the bosses **15** and **15'** are spaced outwardly from the free ends of walls **21** and **22**.

As best seen in FIGS. 3 and 4, the walls **21** and **22** are formed integrally with the bottom **12** and have spaced flat parallel inner surfaces **25** and **25'**. The outside surfaces **26**, **26'** of walls **21** and **22** are also straight flat and parallel, being provided with longitudinal grooves **28** and **28'** parallel to base member **12**. While grooves **28**, **28'** may be placed at any portion in the outside surfaces **26**, **26'**, I prefer that the grooves **28**, **28'** be formed by undercuts in the walls **21**, **22** at the lowermost portion thereof; therefore, the bottom sides of the grooves **28**, **28'** are defined by the upper surface of base member **12**. At the open end of the walls **21**, **22**, the grooves **28**, **28'** are also open, and extend upwardly along the vertical edge of their walls to provide front grooves **29** and **29'**. The junctions of grooves **28**, **29** and grooves **28'** and **29'**, are rounded as at numeral **30**.

It will be thus seen that the receptacle **10** provides a device which may be installed on a shoe lace with the base member **12** beneath the knot in the lace, the lace being received by slot **14**; and, the walls **21**, **22** and **24** provide three sides to encase the knot and the bows. The cover or other receptacle **11** is complementary to receptacle **10** and completes the encasing of the lace. The cover **11** is formed similarly to the receptacle **10** and is adapted to interengage and lock therewith.

The cover **11** includes a flat top or base member **32** having a shape and size identical to base member **12**. The downwardly extending rectangular side walls **34** and **35** of cover **11** are formed integrally with and depend from top **32**, and are parellel to each other and the longitudinal center line of the cover **11**. The walls **34**, **35** have straight flat exterior surfaces **37**, **37'** and straight flat interior surfaces **38**, **38'**, the walls **34** and **35** being joined at one end by end wall **36** which is formed integrally with side walls **34**, **35** and with top **32**. Along the bottom portions of the inside surfaces **38**, **38'** are a pair of opposed, inwardly extending flanges **39** and **40** parallel to top **32**, the flanges **39** and **40** extending along the outer or bottom edge portions of walls **34** and **35**, and terminating slightly inside of the walls **34** and **35**. The ends of the flanges **39** and **40** are rounded, as at numeral **41**, to provide smooth runner-like surfaces.

It will be observed that grooves **28**, **28'** are parallel to the outer edges of walls **21**, **22**, while the flanges **39** and **40** are parallel to the outer edges of walls **34** and **35**. Also, the distance from the inner edges of grooves **28**, **28'** to the outer edges of walls **21**, **22** is approximately equal to the distance from the inner edges of flanges **39** and **40** to the outer edges of walls **34**, **35**. Thus, when interengaged, the outer edges of walls **21**, **22** rest on base member or top **32** while the outer edges of walls **34**, **35** rest on base member **12**.

The walls **34** and **35** are so spaced apart as to have the inside dimensions between the surfaces **38**, **38'** equal or greater than the distance between surfaces **26**, **26'** of walls **21** and **22**. Thus, when interengaged, walls **34**, **35** overlap walls **21**, **22**, the flanges **39** and **40** being of such shape that they are slidably received within grooves **28**

and 28' with the outer edges of walls 34, 35 resting on base member 12 and top 32 resting on the outer edges of walls 21, 22. The longitudinal outside dimension of the walls 21 and 22 is approximately the longitudinal inside dimension of the walls 34 and 35 of cover 11. The vertical height of all the walls is approximately the same.

It will thus be seen that the above described parts, i.e., the receptacles 10 and 11, provide two interlocking pieces which will form a complete encasement for a knot in a shoe lace. In operation, the receptacles 10 and 11 are first separated. Then, receptacle 10 is placed with the base member 12 against the shoe, and is urged inwardly such that the slot 14 receives the lace beneath the knot of the lace. The receptacle 10 is so inserted that the knot is urged to the inner end of the slot 14, whereby the bows may be tucked within the walls 21, 22 and 24. The cover 11 is then arranged adjacent the corner of the receptacle 10, with the outer edges of walls 34 and 35 aligned with base member 12 such that the flanges 39 and 40 are aligned respectively with the grooves 28 and 28'. Thereafter, the two pieces are urged together, the flanges 39, 40 sliding within the grooves 28, 28'.

At this point, it should be observed that if the receptacles 10 and 11 are not exactly aligned, the flanges 39 and 40 may fit within the vertical grooves 29, 29'; and, the two pieces may slide along until proper registration is achieved, the curved portions 30 and 41 acting to guide the flanges 39 and 40 into exact registration with grooves 28, 28'.

In the present embodiment, the cover 11 will slide easily over receptacle 10 until the end wall 36 of cover 11 contacts the bosses 15, 15' on bottom 12, at which point a greater force must be exerted in order to further the proper registration of the two pieces. Since the bosses are sloped, the bosses 15, 15' will act like wedges. Sufficient force will, therefore, cause the wall 36 to ride up and over the bosses 15, 15', forcing the base member 12 downwardly slightly. When the wall 36 is inside the bosses 15, 15', the bottom will tend to snap back into normal position to preclude displacement of the cover 11 until an opposite force is applied to open the device. Thus, the protective device is closed, the outer edge of end wall 36 being essentially contiguous with the inner surface of base member 12 and serving to close the open end of slot 14.

In actual operation of the device, it is very simple to close the device by exerting pressure on the end 17 of member 12 at C in FIG. 2, and an opposite force at a point C' on the top 32, diagonally of point C. Such forces are conveniently applied by the thumb and forefinger of one hand. To open the device, pressure is similarly exerted on the opposite diagonal of the device, i.e., on end 16 of member 12 at 0, and on the end of top 32 at 0'.

From the foregoing it will be seen that the present invention provides a very simple and effective encasement for the knot in a shoe lace. Though the device is very easy for an adult to open or to close, a young child would not be able to operate the device; therefore, a pair of the devices may be put on a child's shoe laces to preclude his untying his shoe laces; however, the device is not limited to such use. The construction of the device is such that it lends itself to many varied designs; therefore, the device may be made in various designs which appeal to many different age groups for decorative purposes.

It is contemplated that the device will be made of a plastic, such as high impact polystyrene; however, many other plastics and other materials may serve equally well, as long as the material has sufficient elasticity to allow the snap action of the wall over the bosses; therefore, many changes and modifications may be made, and the full use of equivalents resorted to without departing from the spirit or scope of the invention as outlined in the appended claims.

I claim:

1. A protective device for shoe laces comprising a pair of receptacles, one of which has an externally opening slot therein for receiving the laces of shoes such that a knot in said laces is contained within said one receptacle, the other of said receptacles having means for restricting said slot to prevent removal of the laces therefrom, said receptacles respectively having a sidewise protruding slidable element and a groove for receiving said sidewise protruding element, said receptacles being so constructed and arranged that upon alignment of said element and said groove and upon relative movement between the receptacles with said element riding in said groove, said means for restricting said slot is moved from a non-restricting position into a restricting position with respect to said slot.

2. A protective device for shoe laces comprising a pair of receptacles slidable together to form a closure surrounding a knot of a shoe lace, said receptacles being provided with an externally opening slot in one receptacle, there being provided a sidewise opening groove parallel to said slot in one receptacle, and a flange in the other receptacle for riding in said groove.

3. A protective device for shoe lace knots comprising a pair of releasable interengaged receptacles each having a flat base member, a pair of spaced parallel rectangular side walls extending from said base member and an end wall joining said side walls, the side walls of one receptacle being provided with opposed open ended grooves parallel to its base member, and flanges on the walls of the other receptacle parallel to its base member for registering with said grooves and being received therein when said receptacles are interengaged, the walls of one receptacle being wider apart than the walls of the other receptacle so as to overlap the walls of the other receptacle when said receptacles are interengaged, there being provided a slot in the base member of one of said receptacles for receiving the laces of shoes therein.

4. A protective device for shoe lace knots comprising a pair of releasable interengaged receptacles, each having a flat base member, a pair of spaced parallel rectangular walls extending from said base member, the walls of one receptacle being provided with opposed open ended grooves parallel to its base member, flanges on the walls of the other receptacle parallel to the base member of said other receptacle for registering with said grooves and being received therein when said receptacles are interengaged, the walls of one receptacle being wider apart than the walls of the other receptacle so as to overlap the walls of the other receptacle when said receptacles are interengaged, there being provided an open ended slot in the base member of one of said receptacles for receiving the laces of shoes therein, means for limiting the sliding of said receptacles into interengagement, and means movable into a blocking position by movement of said receptacles into their interengaged position for blocking the open end of said slot.

5. A protective device for shoe lace knots comprising a pair of releasable interengaged receptacles each having a flat base member, a pair of spaced parallel rectangular walls spaced inwardly from the edges of said base member and arranged essentially normal thereto from said base member and an end wall joining said side walls, the walls of one receptacle being provided with opposed open ended grooves parallel to its base member, flanges on the walls of the other receptacle parallel to the base member of said other receptacle for registering with said grooves and being received therein when said receptacles are interengaged, the walls of one receptacle being wider apart than the walls of the other receptacle so as to overlap the walls of the other receptacle when said receptacles are interengaged, there being provided an open ended slot in the base member of one of said receptacles for receiving the laces of shoes therein, the slot extending parallel to the walls of its receptacle and terminating adjacent the end

wall thereof, and locking means on said receptacles for yieldably locking said receptacles in their interengaged position, the end wall of one receptacle being terminated adjacent the inner surface of the base member of the slotted receptacle for effectively closing the open end of said slot when said receptacles are interengaged so as to maintain a knot of said shoe laces between said receptacles.

6. A protective device for shoe lace knots comprising a pair of releasable interengaged receptacles each having a flat base member, a pair of spaced parallel rectangular walls extending from said base member and an end wall joining said side walls, the walls of one receptacle being provided with opposed open ended grooves parallel to its base member, flanges on the walls of the other receptacles parallel to the base member of said other receptacle for registering with said grooves and being received therein when said receptacles are interengaged, the walls of one receptacle being wider apart than the walls of the other receptacle so as to overlap the walls of the other receptacle when said receptacles are interengaged, there being provided an open ended slot in the base member of one of said receptacles for receiving the laces of shoes therein, the slot extending parallel to the walls of its receptacle and terminating adjacent the end wall thereof, and protrusions on the base member of one of said receptacles for yieldably engaging the end wall of the other receptacle as it approaches its innermost position, the end wall of one receptacle being terminated adjacent the inner surface of the base member of the slotted receptacle for effectively closing the open end of said slot when said receptacles are interengaged so as to maintain a knot of said shoe laces between said receptacles.

7. A protective device for shoe lace knots comprising a pair of receptacles each having a base and a three sided wall normal to the base, two of the three sides of said wall being parallel to each other, the parallel wall sides of one receptacle overlapping the parallel wall sides of the other receptacle, means for slidably interengaging said

receptacles such that the third wall of one receptacle closes the space between one end of the parallel walls of the other receptacle when the receptacles are interengaged, said base of said other receptacle extending outwardly of its parallel wall sides and being provided with a slot therein opening beyond said third wall of said one receptacle.

8. A protective device for shoe lace knots comprising a pair of receptacles each having a base and a three sided wall normal to the base, two of the three sides of said wall being parallel to each other, the parallel wall sides of one receptacle overlapping the parallel wall sides of the other receptacle, means for slidably interengaging said receptacles such that the third wall of one receptacle closes the space between one end of the parallel walls of the other receptacle when the receptacles are interengaged, said base of said other receptacle extending outwardly of its parallel wall sides and being provided with a slot therein opening beyond said third wall of said one receptacle, and protrusions on the outwardly extending portion of said base of said other receptacle for yieldable engagement with said third wall of said one receptacle.

9. A protective device for shoe laces comprising a pair of receptacles slidable sidewise together to form a closure surrounding a knot of a shoe lace, said receptacles being provided with a slot in one receptacle, there being provided a groove in one receptacle and a cooperating flange in the other receptacle, said flange and groove having curved portions at their ends for cooperating to urge said receptacles together.

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