This invention relates generally to articles of footwear, and has particular reference to shoes (sometimes called "thong sandals") in which the sole is provided with an upwardly extending element adapted to lie between the toes of the wearer.

A general object of the invention is to provide a toe thong of improved structure character, and thereby provide a "thong sandal" or equivalent article of footwear having enhanced attractiveness, comfort and usefulness.

The term "toe thong" as used herein and in the appended claims is intended to include within its scope any element or thong which extends upwardly between a pair of toes, whether it terminates at a level above the toes or whether it is bent back to form a loop which overlies one or more of the toes.

Toe thongs heretofore proposed have numerous shortcomings. When they are thin enough to fit comfortably between the toes they are often insufficiently sturdy to withstand the stresses to which they are subjected in use. When they are made staunch and wear-resistant they are often too bulky for comfort and unattractive in appearance. Similarly, some toe thongs are insufficiently yieldable in dimensions, others yield too much. If a thong does not stretch or give to an adequate extent, there is a problem of fit, since the thong may be so short as to be uncomfortably tight or so long as to be too loose for proper toe engagement. On the other hand, if a thong yields too readily, the shoe may not properly cling to the foot. Moreover, most thongs heretofore proposed are so limp that they cannot stand by themselves, especially under the weight of ornaments carried thereby. This presents a problem in displaying the shoes to best advantage, since relatively expensive and unattractive forms must be employed to afford adequate support for the thongs; and limp thongs are also disadvantageous in that special fingering is required each time the toes of the wearer are to be brought into engagement.

It is an object of this invention to obviate these and other problems heretofore encountered, and to achieve new benefits. A toe thong constructed in the improved manner is soft and comfortable, attractive in appearance, easy to "step into" by feel and without specific fingering, and adjustable to the normal movements of the foot. It is sufficiently narrow to fit easily between the toes, yet sturdy enough to resist stress; and it is yieldably elastic to assure proper fit for a large range of foot and toe sizes, yet limited in a controllable manner to a predetermined degree of stretch so that undesired looseness can be avoided. Moreover, the improved thong is readily flexible yet self-supporting, whereby shoes may be displayed without recourse to dummy supporting forms or other thong props.

A particular feature of the improved thong construction lies in the assembly of its constituent elements in such a way that the degree of stretchability can be controlled with considerable accuracy during manufacture. This contributes to uniformity of products and reliability in designating shoes in terms of thong size and fit.

The construction is also of such a nature that the basic assembly of parts may be selectively employed to form a simple upstanding thong, or a turned-back toe-enveloping loop; and the association of the toe thong in either case with the sole of the shoe can be carried out inexpensively and without requiring any special skill.

One of the more specific objects of the invention is to provide an improved unitary toe thong which serves not only to loop around a toe but also to display an ornament adjacent to the toe, thereby fulfilling a dual purpose heretofore achieved only by a separate toe loop and a separate adjacent ornament-bearing thong.

In its simplest form, the improved thong consists of a length of woven fabric tubing, and a coil spring coaxially within it. The tube has a limited stretchability that can be carefully regulated during manufacture of the thong, and the interior spring is freely extensible and resilient, and imparts the desired self-supporting characteristics to the thong. The woven tube is preferably of opaque material, so that the spring is entirely invisible at all times. In associating the thong with the sole of the shoe, a hole is formed in the sole, and one end of the thong extends downwardly through this hole, there being an anchoring means on the under side of the sole for engagement with the end of the spring.

Several ways of achieving the foregoing general objectives and advantages, and such other objects and benefits as may hereinafter be pointed out, are illustrated in the accompanying drawings in which:

Fig. 1 is a perspective view of a sandal with which an upstanding to thong of the improved character is associated;

Fig. 2 is an enlarged fragmentary cross-sectional view substantially along the line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 showing the limited elastic stretchability of the thong;

Fig. 4 is an exploded view of the parts entering into the assembly shown in Figs. 1-3;

Fig. 5 is a fragmentary enlarged perspective view, partly in section, illustrating a modification;

Fig. 6 is a fragmentary perspective view of the front end of a sandal with which a toe thong of modified nature is associated;

Fig. 7 is a fragmentary enlarged cross-sectional view taken substantially along the line 7—7 of Fig. 6;

Fig. 8 is a view similar to Fig. 7 showing the relationship of the parts when the toe thong is in engagement with the foot of the wearer;

Fig. 9 is a partially exploded view illustrating the manner of assembling the parts shown in Figs. 6—8; and

Fig. 10 is a view similar to Fig. 1, illustrating a further modification.

The shoe chosen for illustration in Fig. 1 is provided with an inner sole 20, an outer sole 31, a heel 22, a simple strap 23 adapted to extend around the foot, and an upstanding toe thong 24.

The elements of which the thong are composed, and by means of which it is attached to the sole, are best indicated in Fig. 4. A length 25 of woven fabric tubing is enveloped around a coil spring 26 which is caused to extend coaxially through it. At its upper end, the hooked end 27 of the spring is engaged with the attachment loop 28 formed on the under side of the ornamental disc-like button 29. The upper end of the tube 25 is pushed over this connection, to conceal it, and the upper margin of the tube is somewhat flared out as shown in Figs. 2 and 3, and adhesively bonded to the under surface of the ornament 29. At its lower end, the thong assembly is passed downwardly through an opening 30 formed in the inner sole 20, and on the under side of the latter an anchoring means in the form of a rigid pin or similar element 31 is caused to penetrate through the tube 25 and to engage
with the hook or loop 32 at the lower end of the spring 26. When the outer sole 21 is adhesively secured in position, it conceals the anchoring means 31 and flattens out the lower loose end of the fabric tube 25. The thong normally assumes the upstanding position shown in Figs. 1 and 2, even without any external support, since the spring 26 imparts sufficient rigidity to make it self-supporting. This is of great advantage, since the shoe may be displayed in a store window or on a counter without any extraneous support for the thong. This shows off the shoe and the ornament on the thong to maximum advantage.

The self-sustained upstanding nature of the thong has the added advantage that the toes can be engaged with it by feel, and it is therefore not necessary for the user to bend over and perform any special fingering to bring the shoe into proper engagement with the foot.

The fabric tubing 25 is a well-known product, readily available on the market. Because of the diagonal interweaving of the threads of which it is composed, the tube is stretchable in a longitudinal direction for a limited extent. This stretchability is taken advantage of in the present thong construction, and it can be carefully regulated during the manufacture of the shoe. For example, if the length of tubing 25 is stroked upwardly toward the ornamental button prior to its engagement by the anchoring pin 31, it will have a minute inherent "wrinkle" which will permit it to stretch to a slightly greater degree than would otherwise be the case. Similarly, if the tube 25 is stroked in a downward direction prior to the engagement of the thong end by the anchoring means 31, the degree of stretchability will be correspondingly reduced. With a tubing length of a given size, it is possible, therefore, to form thongs having a normal stretchability, a less-than-normal stretchability, and a greater-than-normal stretchability.

The manner in which the thong extends itself, resiliently, is indicated in Fig. 3, in which the dotted lines represent the normal position of the thong ornament, and the full lines represent the position it assumes when the toes 33 are engaged with the stem of the thong.

In Fig. 5 I have shown a modified shoe assembly in which an upstanding thong of the character described is indicated at 34, and in which a length of the basic thong material (i.e., woven fabric tubing and enclosed coil spring) is turned back into the form of an inverted-U loop 35. One end of this toe-enclosing loop is anchored by means of a pin or equivalent anchoring element 36 which engages the end of the spring at that end of the loop; the opposite end of the spring 37 may be anchored by the same pin 36 which engages the lower end of the spring within the stem of the thong 34. The anchoring means 36 and 38 are located on the underside of the inner sole 39, as hereinbefore described, and the application of the outer sole 40 serves to conceal these anchors and also to compress and secure the loose ends of the fabric tubing.

It will be understood that the thong 35 of Fig. 5 is stretchable to a limited degree, as a result of the inherent nature of the outer woven fabric, and that the degree of stretchability may be regulated during the course of manufacture, as hereinbefore described. The coaxial spring imparts a desirable degree of support to the loop, which enhances its appearance, simplifies the display of the shoe, and facilitates the art of "stepping into" the shoe or sandal by feel.

In Figs. 6-9 I have shown a unitary toe thong assembly in which the ornamental effect of the double-thong arrangement of Fig. 5 can be achieved. In this case an elastic cord 41 is extended coaxially through the coil spring 42, to serve as a special anchoring means for the ornamental button 43. On its under face, this button is provided with an attachment hook 44, and in assembling the parts this hook is inserted through the fabric tube 45, then between a pair of adjacent coils of the spring 42, into engagement with the elastic cord 41. The penetration of the attachment part 44 through the woven tube 45 can be readily achieved by forcing adjacent threads aside, but if desired a special perforation 46 may be preliminarily formed for this purpose.

The thong unit, consisting of the outer woven fabric tube 45, the coaxially arranged coil spring 42, the coaxially arranged elastic cord 41, and the engageable ornament 43, is secured to the sole of the shoe in the manner hereinbefore described. That is to say, each end of the loop is passed downwardly through openings in the inner sole 47, and the opposite ends of the spring 42 are engaged on the under side of the sole by means of anchoring pins 48 and 49. The application of the outer sole 50 conceals these anchors, and also engages and holds in locked condition the loose end of the fabric tube and the loose ends of the elastic cord 41.

When the device is in use, the toes 51 of the wearer press upwardly against the ornamental 43, causing the attachment hook 44 to move out of the enveloping tube 45, as indicated in Fig. 8. The elasticity of the cord 41 allows this adjustability to occur, and greatly enhances the comfort and attractive appearance of the thong when the shoe is worn.

The shoe depicted in Fig. 10 has an upper 52 with a forward portion 53 through which the thong 45 extends, the button or ornament 55 lying on the upper surface of the part 53. This is a conventional mode of associating a toe thong with an upper, and this arrangement may be resorted to with a thong constructed in accordance with this invention. The self-supporting upstanding nature of the thong 54 keeps the upper 52 in an elevated position, and maintains the ornament 55 in position, thereby enhancing the attractive appearance of the shoe even during periods when it is off the foot.

It will be readily apparent that the improved thong construction may be utilized to advantage in various ways other than those shown in the accompanying drawings. Also, the construction may be modified in a number of respects to suit different requirements. For example, the upper end of the tubing (Fig. 3) need not necessarily be flared outwardly as shown, and under certain circumstances it may be turned in to lie within the tube; the bottom end of the tube may be similarly finished off, if desired, by turning its edge inward. Also, the attachment hook on the ornament of Fig. 8 need not under all circumstances pull the cord 41 out of the tube; the cord may remain within the tube if the upward pressure upon the ornament is of a moderate degree. Sometimes it may be desirable merely to cement the ornament in position on the tubing, and of course in such a case the inner cord 41 may be omitted.

The depiction of toes in Figs. 3 and 8 is intended to be explanatory in nature, and somewhat exaggerated.

In general, it will be understood that the details herein described and illustrated may be modified in numerous respects without necessarily departing from the spirit and scope of the invention as expressed in the appended claims.

What is claimed is:

1. An ornament-bearing toe thong comprising a woven fabric tube, a coil spring coaxially within said tube, a longitudinally elastic cord coaxially within said spring, an ornament extending laterally beyond said tube for covering engagement with a wearer's toe, and an attaching means on said ornament extending into the woven tube and coil spring and into engagement with said cord, said ornament thus being resiliently yieldable away from said tube.

2. An ornament-bearing toe thong comprising a woven fabric tube, a coil spring coaxially within said tube, a longitudinally elastic cord coaxially within said spring, an ornament extending laterally beyond said tube for covering engagement with a wearer's toe, an attaching means on said ornament extending into the woven tube and coil spring, and said cord extending through said loop where-
by said ornament is held in a resiliently yieldable manner.

3. In a shoe, a sole having an opening through it, a toe thong comprising a tube of woven fabric and a coil spring coaxially within it, one end of the thong extending downwardly through said opening, and a thong anchoring means engaging the end of said spring on the under side of said sole.

4. In a shoe, a sole having an opening through it, a toe thong comprising a tube of woven fabric and a coil spring coaxially within it, one end of the thong extending downwardly through said opening, thong-anchoring means engaging the end of said spring on the under side of said sole, and an ornament secured to the upper end of said thong and including means on the lower face of said ornament in engagement with the upper end of said spring, the upper end of said fabric tube being flared outwardly to lie against said face and being adhesively secured thereto.

5. In a shoe, a toe thong and an ornament carried thereby, said thong comprising a tube of woven fabric and a coil spring coaxially within it, an elastic cord coaxially within said spring, and an attachment loop on the ornament extending into the woven tube and between adjacent coils of the spring into encircling engagement with said cord.

6. In a shoe, a sole, a toe thong carried by said sole and projecting upwardly therefrom in the form of an inverted U, said thong comprising a tube of woven fabric and a coil spring coaxially within said tube, an elastic cord coaxially within said spring, and an ornament carried by said thong and provided with an attachment loop that extends into the woven tube and between adjacent coils of the spring into encircling engagement with said cord.

7. In a shoe, a sole having a pair of openings through it, a toe thong comprising a tube of woven fabric and a coil spring coaxially within it, said thong being bent into inverted-U-shape to define a loop, the ends of the thong extending downwardly through said openings, and anchoring means engaging the ends of said spring on the under side of said sole.

8. In a shoe, a sole having a pair of openings through it, a toe thong comprising a tube of woven fabric and a coil spring coaxially within it, said thong being bent into inverted-U-shape to define a loop, the ends of the thong extending downwardly through said openings, an elastic cord coaxially within said spring, anchoring means on the under side of said sole and engaging the ends of said spring, an outer sole concealing said anchoring means, the ends of said woven tube and the ends of said cord being held in sandwichehd relation between said first-named sole and said outer sole, and an ornament carried by said thong and provided with an attachment loop that extends into the woven tube and between adjacent coils of the spring into encircling engagement with said cord.

References Cited in the file of this patent

UNITED STATES PATENTS

149,727 Curtis Apr. 14, 1874
242,790 Phelps June 14, 1881
1,195,357 Hoot Aug. 22, 1916
1,206,308 Maynier May 2, 1919
2,511,101 Clarke June 13, 1950
2,740,207 Starensier Apr. 3, 1956

FOREIGN PATENTS

1,059,901 France Nov. 18, 1953