FOOTWEAR HAVING INSECT REPELLENT

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ABSTRACT
Footwear is disclosed. The footwear includes a sole. A strap is secured to the sole. The strap aids in retaining the footwear on an individual’s foot. The footwear further includes an insect repellent. The insect repellent may be on a strip. The strip is retained on the strap. The strip can be removed from the strap and replaced with a different strip. One of the strap or insect repellent strip has at least one opening for disposition about a post contained on the other of the strap or the insect repellent strip.
Fig. 2

Fig. 3
FOOTWEAR HAVING INSECT REPELLENT

FIELD OF THE INVENTION

[0001] The present invention relates generally to footwear incorporating insect repellent. More particularly, the present invention relates to open footwear including straps which may comprise insect repellent or to which a band or strip having insect repellent can be detachably retained.

BACKGROUND OF THE INVENTION

[0002] Insect repellent is typically used to repel insects from an individual. Many insect repellents are known, such as DEET, Geraniol, geranium, peppermint, lavender, lemon-grass and citronella oil. Certain garments having insect repellent contained therein have been shown in the art. One such example is U.S. Pat. No. 7,487,554 B1.

SUMMARY OF THE INVENTION

[0003] According to an embodiment, there is provided footwear comprising a sole. The footwear comprises a strap secured to the sole. The strap has at least one post extending therefrom. The footwear further comprises a strip containing insect repellent having at least one opening. The opening in the strip is for disposition about the post to detachably retain the strap on the strip.

[0004] According to an embodiment, there is provided footwear comprising a sole. The footwear comprises a strap secured to the sole. The footwear further comprises a strip containing insect repellent. One of the strap or the strip has at least one post extending therefrom. The other of the strap or the strip has at least one opening. The opening is for disposition about the post to detachably retain the strip on the strap.

[0005] According to an embodiment, there is provided footwear comprising a sole. The footwear further comprises a strip retained on the sole, wherein the strip contains insect repellent.

[0006] Further areas of applicability of the present invention will become apparent from the detailed description provided hereinafter. It should be understood that the detailed description and specific examples, while indicating the preferred embodiment of the invention, are intended for purposes of illustration only and are not intended to limit the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The present invention will become more fully understood from the detailed description and the accompanying drawings, wherein:

[0008] FIG. 1 is a top plan view of one embodiment of footwear;

[0009] FIG. 2 is a top view of one embodiment an insect repellent strip;

[0010] FIG. 3 is a side elevation view of one embodiment of a strap of footwear partially broken away;

[0011] FIG. 4 is a top plan view of an embodiment of footwear;

[0012] FIG. 5 is a side elevation view of an embodiment of an insect repellent strip; and

[0013] FIG. 6 is a side elevation view of one embodiment of a strap of footwear partially broken away.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] The following description of the preferred embodiment(s) is merely exemplary in nature and is in no way intended to limit the invention, its application, or its uses.

[0015] An embodiment relates to a dispensing system that can be used to dispense volatile insect repelling materials. The embodiment may relate to footwear that can include a band or strip which may be used to dispense volatile insect repelling material.

[0016] FIG. 1 is a top plan view of footwear according to an embodiment. As shown, the footwear in this embodiment is typically known as a “flip-flop.” While a flip-flop is shown in the illustrated embodiment and discussed below, it will be appreciated that embodiments may include open footwear, for example, footwear incorporating straps that are generally open. Such footwear may comprise slides or sandals or other footwear that are attached to the user’s foot using at least one strap and otherwise contain general open areas exposing at least portions of the user’s foot are footwear within the scope of the present disclosure.

[0017] The flip-flop is generally shown at 10 in FIG. 1. The flip-flop 10 includes a sole 12 having a plurality of openings 14 therethrough. A strap generally indicated at 16 is secured to the sole 12 via being passed through the openings 14 in a well-known manner. It will be appreciated that the strap 16 may comprise a single strap or multiple straps used to allow the flip-flop 10 to be retained on a user’s foot. Further, the strap may take any suitable configuration.

[0018] The strap 16 may comprise any suitable material such as by way of non-limiting example, cloth, rubber, polymeric, composites or combinations thereof. In an embodiment, the strap 16 may include a bottom or foot engaging portion 18. In an embodiment, the bottom foot engaging portion 18 may generally be smooth to engage the user’s foot so as to not irritate the user’s foot. It will be appreciated, however, that the bottom foot engaging portion 18 may take any suitable configuration and need not necessarily be generally smooth.

[0019] The strap 16 further includes an upper portion 20. The upper portion 20 may be on the side of the strap opposite to the foot engaging portion 18. The upper portion 20 of the strap 16 may take any suitable configuration. The strap 16, and particularly the upper portion 20 may also contain any decoration including textures, colors, patterns or the like.

[0020] The upper portion 20 of the strap 16 may include a plurality of posts generally indicated at 22. In an embodiment, the posts 22 extend from the upper portion 20 in a direction generally away from the bottom foot engaging portion 18. The posts 22 may include a body portion 24 and a head 26.

[0021] In one embodiment, the body 24 may comprise a generally cylindrical shape having a generally circular cross-section. It will be appreciated, however, that the body 24 may take any suitable geometric configuration and need not have a circular cross-section. By way of non-limiting example, the body may have a hexagonal or octagonal shaped cross-section.

[0022] In an embodiment, the head 26 may have a diameter that is larger than the diameter of the body 24. That is, at least a portion of the head 26 may extend beyond at least a portion of the outer periphery of the body 24. In an embodiment, the body 24 has a generally circular cross-section having a first diameter and the head 26 has a generally circular cross-
section having a second diameter, which second diameter is greater than the first diameter of the body 24. In this manner, a lip 28 may be formed under the edge of the head 26. The head 26 may also take any suitable geometric configuration. By way of non-limiting example, the head 26 may include a generally hemispherical portion. Alternatively, the head may be disc shape or frustoonical. The specific configuration of the upper portion of the head 26 may therefore be any suitable configuration. In one embodiment, the bottom portion of the head 26 forming the lip 28 may have a generally flat surface.

[0023] The post 22 may comprise any suitable material such as by way of non-limiting example, rubber, polymeric, composites or combinations thereof. In one embodiment, the post 22 may be separately formed and affixed to the strap 16. In another embodiment, the post 22 may be integrally formed with the strap 16. In another embodiment, the post 22 and strap 16 may be molded as a single piece.

[0024] The footware 10 may also include a strip 30. The strip 30 may be detachably secured to the strap 16. In an embodiment, the strip 30 may include a plurality of openings 32. The openings may be configured to be in close proximity about the periphery of the post 22. In such an embodiment, the openings 32 may be generally circular. In another embodiment, the openings 32 may be elongated to form an elongated slot (not shown). The openings 32 may be configured so that at least a portion of the openings 32 is smaller in dimension than a portion of the head 26 of the post 22. In this way, the opening 32 can be placed about the post 22 such that at least a portion of the strip 30 may be disposed under the lip 28 of the post 22 as will be more fully discussed below. The strip may be comprised of a resilient material that may be impregnated with an insect repellent material; such impregnated insect repellent materials are well-known. The impregnated insect repellent may be released from the strip 30 in a well-known manner to repel insects from an individual.

[0025] In an embodiment, the openings 32 of the strip 30 can be snap-fit over the posts 22 to detachably retain the strip 30 on the strap 16. The snap-fit may occur by expanding the opening 32 and placing the expanded opening 32 over the head 26 of the post 22 on strap 16. The strip 30 may then be moved over the posts 22 such that the openings 32 may be placed about the body 24 of the post 22. Once the strip 30 has been placed sufficiently over the head 26 of the post 22 such that the openings are generally adjacent to the body 24 of post 22, the openings 32 may recover to generally their original shape and may be retained under the lip 28 of post 22. Accordingly, in an embodiment, the strip can be made out of any suitable material that allows the openings 32 to be placed on the posts 22 and detachably retained thereon. By way of non-limiting example, such materials or combinations thereof may include rubbers, polymeric, composites, cloth or the like. In another embodiment the snap-fit may occur by deforming the head 26. In this embodiment, the posts 22 may be more resilient and the strip 30 may be less resilient. The head 26 may deform to allow it to pass through the opening 32 in the strip 30. Once the head 26 has been passed through the opening 32, the head 26 may recover to generally its original shape and the strip 30 may be retained under the lip 28 of post 22. The shape of the head 26 may aid in the deformation of either the opening 32 or the head 26 to allow the snap-fit.

[0026] In one embodiment, several of the openings 32 may be placed over multiple posts 22 on the strap 16. It will be appreciated that only one post 22 and one opening 32 may be necessary to retain the strip 30 on the strap 16. In an embodiment, the strip 30 is detachably retained on the upper portion of strap 20 so as to avoid contact of the strip 30 with an individual’s foot. Further, the strip 30 may be sized such that it rests entirely upon the strap 16 so no portion of the strip 30 engages the individual’s foot. It will be appreciated, however, that the strip 30 may be of any size and may contact the individual’s foot. Any number of strips 30 may be used. In the embodiment illustrated, two strips 30 are placed at different locations on the strap 16.

[0027] The strip 30 can be decorated in any suitable manner. By way of non-limiting example, the strip 30 can be colored and multi-colored. The strip 30 further can be textured or incorporate any design or wording thereon. By having strips of different design, the design of the footwear 10 is easily configurable. This allows a user to replace the strips 30 to allow the footwear to have any desired design, the nature of which can be easily changed. Further, the strip 30 can take any geometric configuration. In one embodiment, the strip 30 may be sized such that it covers a majority of the upper portion 20 of the strap 16. It may be desirable in such an embodiment to maximize the surface area of the strip 30 to enhance the bug repellent ability of the strip 30. In another embodiment, it may be desirable to size the strip 30 such that it covers less than a majority of the upper portion of the strap 16.

[0028] As set forth above, the strips 30 may be impregnated with or contain a volatile insect repellent material, such as DEET, Geraniol, citronella or other compound that has insect repellent properties. It may be desirable to replace the strips from time to time to either change the appearance of the flip-flop 10 or to remove and replace a strip 30 that has diminished effectiveness for insect repellent. In order to remove the strip 30 from the strap 16, the user simply unsnaps the strip 30 from the strap 16 by deforming either the openings 32 or the head 26 of post 22 to pull the strip 30 over the head 26 of post 22 of the strap 16. This may be done until each of the openings on the strip 30 is moved over the head 26 of post 22 of the strap 16. Once the strip 30 has been removed, it may be replaced with another strip 30 as set forth above.

[0029] FIGS. 4 and 5 show an alternate embodiment. In general, the embodiment shown in FIGS. 4 and 5 has the posts 24 and openings 32 in reverse orientation from the embodiment shown in FIGS. 1-3. That is, the posts 24 are contained on the strip 30 while the openings 32 are contained on the strap 16. Otherwise the embodiments are substantially similar.

[0030] The flip-flop 10 includes a sole 12 having a plurality of openings 14 therethrough. A strap generally indicated at 16 is secured to the sole 12 via being passed through the openings 14 in a well-known manner. It will be appreciated that the strap 16 may comprise a single strap or multiple straps used to allow the flip-flop 10 to be retained on a user’s foot. Further, the strap may take any suitable configuration. The strap 16 may include a bottom or foot engaging portion 18.

[0031] The strap 16 further includes an upper portion 20. The upper portion 20 may be on the side of the strap opposite to the foot engaging portion 18. The upper portion 20 of the strap 16 may take any suitable configuration. The strap 16, and particularly the upper portion 20 may also contain any decoration including textures, colors, patterns or the like.

[0032] The strap 16 may include a plurality of openings 32 therethrough. The flip-flop 10 may further include a strap 30. The strip 30 includes a plurality of posts generally indicated
The posts 22' may include a head 26'. In one embodiment, the head 26' may have a diameter that is larger than the diameter of the body 24'. That is, at least a portion of the head 26' may extend beyond at least a portion of the outer periphery of the body 24'. The head 26', or wider section of the post 22', may in fact be located at any position along the body 24' of the post 22'. In an embodiment, the body 24' has a generally circular cross-section having a first diameter and the head 26' has a generally circular cross-section having a second diameter, which second diameter is greater than the first diameter of the body 24'. In this manner, a lip 28' may be formed under the edges of the head 26'. The head 26' may also take any suitable geometric configuration. In an embodiment, the openings 32' of the strap 16' can be snap-fit over the posts 22' on the strap 30', in similar fashion as described above, to detachably retain the strap 30' on the strap 16'. In this embodiment, the strap 30' may comprise an insect repellent material.

In alternate embodiments, the strap 16' may have a width that may be greater than the diameter of the body 24' of post 22'. Similarly, the strap 30' may have a width that may be greater than the diameter of the body 24' of post 22'. It will be appreciated that any number of posts 22', 22' may be placed on the strap 16' or strap 30'. Similarly, the posts 22', 22' may be located on the strap 16' or strap 30' in any configuration. In an embodiment, the posts 22', 22' are generally shown in the middle of a strap 16' and strap 30', respectively and generally in line with the other posts 22', 22'. However, it will be appreciated that the posts 22', 22' need not be in the middle of the strap 16' or strap 30' and may extend from any portion of the strap 16' or strap 30'. Similarly, the strips 30' and strips 16' are shown to have the openings 32', 32' in the middle of the strap 30' and strap 16', respectively. It will be appreciated that the openings 32', 32' can be in any configuration. In an embodiment, each of the openings 32', 32' aligns with each post 22', 22'. Further, there may be more openings 32', 32' than posts 22', 22'. In such a case, not every opening 32', 32' need be placed around a post 22', 22' in order to secure the strap 30', 30' to the strap 16', 16'.

Also, the embodiments shown are for a flip-flop having the straps 16', 16' connected to the sole 12 via passing through the openings 14, 14. It will be appreciated that other forms of attaching the strap 16', 16' or multiple straps 16', 16' to the sole are contemplated. By way of non-limiting example, the straps 16' may be connected directly to the outside surface of the side or top of the sole 12, 12 such as in the case of footwear referred to as slide. In such a case, the strap 16', 16' may often take a wider geometric configuration than the strap 16', 16' for a flip-flop. Nonetheless, any manner of securing the strap 16', 16' to the sole 12, 12 is contemplated. Further, any configuration and number of strips 30', 30' may be used. It will also be appreciated that the strap 16', 16' may comprise multiple components. Straps 16', 16' may be adjustable with respect to one another or to the sole 12, 12. By way of non-limiting example the strap 16', 16' may comprise two components each of which is connected to the sole 12, 12, respectively. The two strap 16', 16' components may be secured together such as by the use of hook and loop fasteners, buckles or any other suitable mechanism for securing the strap components. In this way, the strap components may be adjusted to allow overall adjustment of the strap 16', 16' to fit a particular user's foot.

Further, an embodiment illustrated has the posts 22' extending from the upper portion 20'. It will be appreciated that other embodiments may have the posts 22' extending from other portions of the strap 16', including the foot engaging portion. Such embodiments may additionally include the posts 22' extending from the upper portion. Thus, the strips 30' may be detachably secured to any portion of the strap 16'.

In other embodiments, the strip 30', 30' may be secured to the strap 16', 16' in other manners. By way of non-limiting example, the strip 30', 30' may be secured to the strap 16', 16' using adhesive, two sided tape, hook and loop fasteners, such as VELCRO®, snaps, buttons or by sewing. Further combinations of such fastening methods may be used. In such embodiments, the posts 22', 22' and openings 32', 32' may or may not be present. Accordingly in some embodiments the strip 30', 30' may be releasably secured to the strap 16', 16'. In other embodiments, the strip 30', 30' may be more fixed to the strap 16', 16'. Further, the strip 30', 30' may be secured directly to the sole of the footwear 10 in another embodiment. In such an embodiment, it may be preferable to secure the strip to the edge or side of the sole.

In another embodiment, the strap 16', 16' may comprise the volatile insect repellent material. In such an embodiment, if a strip 30', 30' is secured to the strap 16', 16', the strip 30', 30' may include but does not necessarily include an insect repellent. In such an embodiment, the strip 30', 30' may merely be decorative. Further in an embodiment, the strap 16', 16' need not include posts 22' or openings 32' to secure a strip 30', 30' and a strip 30', 30' may not be included. In this embodiment, only a portion of the strap 16', 16' may contain insect repellent. By way of non-limiting example, the strap 16', 16' may contain ornamentation 34' thereon that includes the insect repellent or only segments of the strap 16', 16' may contain the insect repellent. Thus, in an embodiment, the footwear 10, 10' may not include any strip 30', 30' and the strap 16', 16', a portion thereof or ornamentation thereon may comprise the insect repellent material.

While embodiments of footwear of the type of flip-flops, sandals and slides are described, it will be appreciated that all types of footwear, including but not limited to shoes and boots, whether or not having open areas exposing a part of an individual's foot, are contemplated within the scope of the disclosure. In such embodiments, any portion of the shoe or boot that is adjacent an individual's foot, ankle or leg may be considered the strap for such embodiments.

Further, it is appreciated that while the embodiments disclose insect repellant, it will be appreciated that as used herein, insect repellents, including types not specifically disclosed herein may be used to repel insects, fleas, ticks or the like.

The description of the invention is merely exemplary in nature and, thus, variations that do not depart from the gist of the invention are intended to be within the scope of the invention. Such variations are not to be regarded as a departure from the spirit and scope of the invention.

What is claimed is:
1. Footwear comprising:
a sole;
a strap secured to the sole, the strap having at least one post extending therefrom; and
a strip containing insect repellent and having at least one opening, the opening for disposition about the post to detachably retain the strip on the strap.

2. Footwear according to claim 1 wherein the post has a body and a head extending from the body wherein a lip is formed between the body and the head.

3. Footwear according to claim 2 wherein the body has a first diameter and the head has a second diameter that is greater than the first diameter of the body.

4. Footwear according to claim 3 wherein the head has a generally hemispherical portion.

5. Footwear according to claim 2 wherein the opening of the strip is positioned adjacent to the body of the post and under the head, in order to detachably retain the strip on the strap.

6. Footwear according to claim 1 wherein the strip has ornamentation thereon.

7. Footwear according to claim 1 wherein the footwear includes at least one opening to expose a portion of a user’s foot.

8. Footwear according to claim 7 wherein the open footwear comprises a flip-flop, a slide or a sandal.

9. Footwear according to claim 1 wherein the insect repellent comprises DEET, Geraniol, citronella or combinations thereof.

10. Footwear comprising:
    a sole;
    a strip secured to the sole; and
    a strip containing insect repellent secured to the strap.

11. Footwear according to claim 10 wherein one of the strap or the strip has at least one post extending therefrom, the other of the strap or the strip has at least one opening, the opening for disposition about the post to detachably retain the strip on the strap.

12. Footwear as set forth in claim 10 wherein at least one of the strap or the strip has an adhesive thereon to detachably retain the strip on the strap.

13. Footwear as set forth in claim 10 wherein at least one of the strap or the strip has hook and loop fasteners thereon to detachably retain the strip on the strap.

14. Footwear as set forth in claim 10 wherein the strip is retained on the strap by sewing.

15. Footwear according to claim 11 wherein the post has a body and a head extending from the body wherein a lip is formed between the body and the head.

16. Footwear according to claim 15 wherein the body has a first diameter and the head has a second diameter that is greater than the first diameter of the body.

17. Footwear according to claim 16 wherein the head has a generally hemispherical portion.

18. Footwear according to claim 15 wherein the opening of the strip is positioned adjacent the body of the post and between the head and the strap, to detachably retain the strip on the strap.

19. Footwear according to claim 10 wherein the strip has ornamentation thereon.

20. Footwear according to claim 10 wherein the footwear includes at least one opening to expose a portion of a user’s foot.

21. Footwear according to claim 20 wherein the open footwear comprises a flip-flop, a slide or a sandal.

22. Footwear according to claim 10 wherein the insect repellent comprises DEET, Geraniol, citronella or combinations thereof.

23. Footwear comprising:
    a sole;
    a strip retained on the sole, wherein the strip contains insect repellent.

24. Footwear as set forth in claim 23 wherein the strip has ornamentation thereon, the ornamentation containing the insect repellent.