



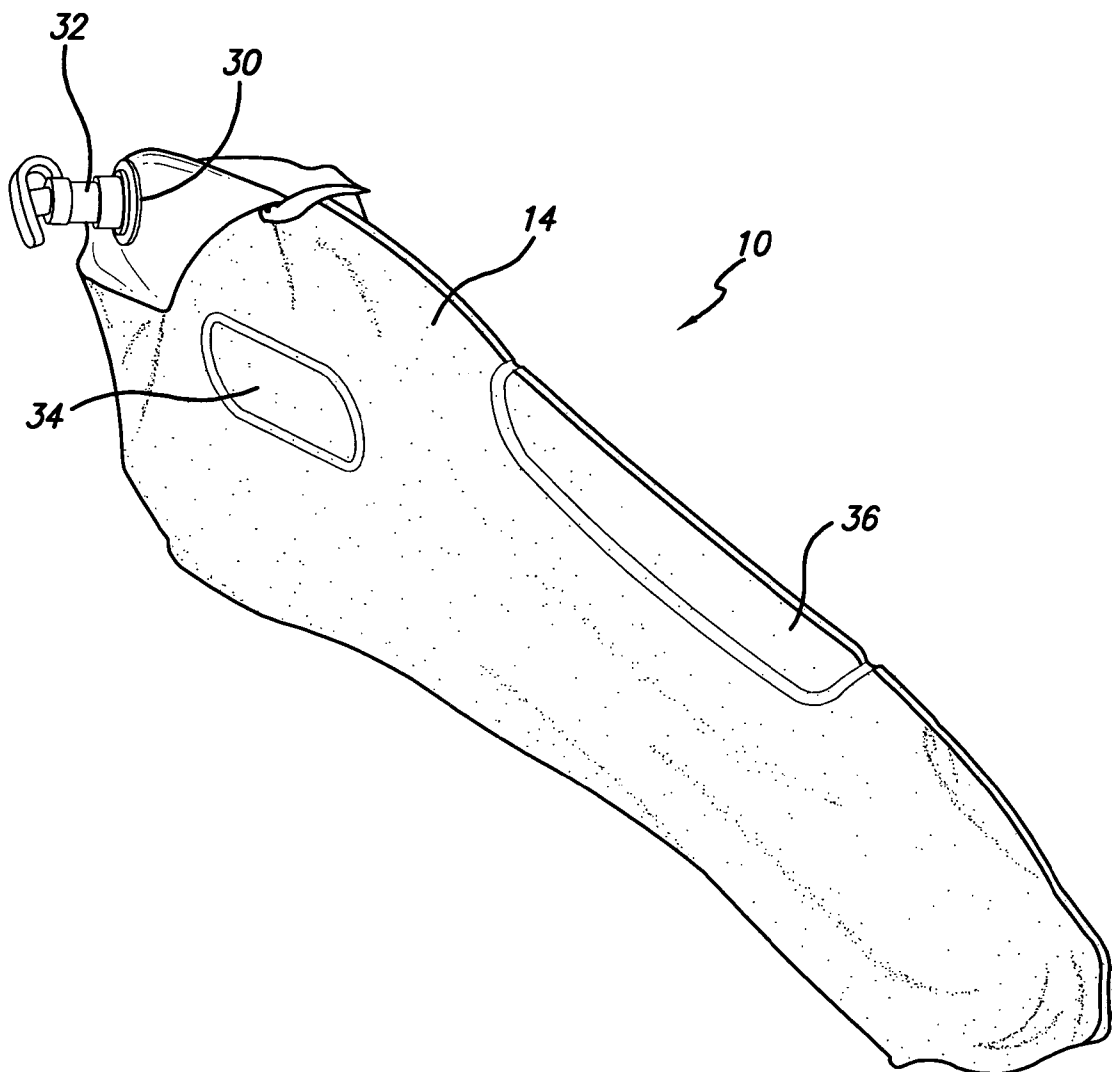
US 20060005328A1

(19) **United States**(12) **Patent Application Publication**
Johnson(10) **Pub. No.: US 2006/0005328 A1**(43) **Pub. Date: Jan. 12, 2006**(54) **INFLATABLE SHOE TREE**(52) **U.S. Cl. 12/128 R; 12/114.4**(76) **Inventor: Rodney Van Johnson**, Sherman Oaks,
CA (US)(57) **ABSTRACT**

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(21) **Appl. No.: 10/888,305**(22) **Filed: Jul. 9, 2004****Publication Classification**(51) **Int. Cl.****A43D 3/00 (2006.01)****A43D 15/00 (2006.01)**

The invention is directed to a inflatable shoe tree that is easy to inflate and that is highly suitable for use both at home and for travel. A version of the present invention provides an inflatable shoe tree comprising: a unitary body having, (a) an interior gas tight chamber, (b) a toe portion, (c) a heel portion, (d) a central portion between the toe portion and the heel portion, (e) a bottom portion, (f) a top portion, and (g) an inflation portion that allows for a volume of gas to enter and exit the gas tight chamber. The body is capable of being in an inflated position and a deflated position, and when in an inflated position it forms a preformed three-dimensional structure substantially in the shape of a human foot, and when the shoe tree is in a fully deflated position, it is substantially flat in shape. The inflatable shoe tree may also include a fragrance, a deodorant, or a combination thereof.



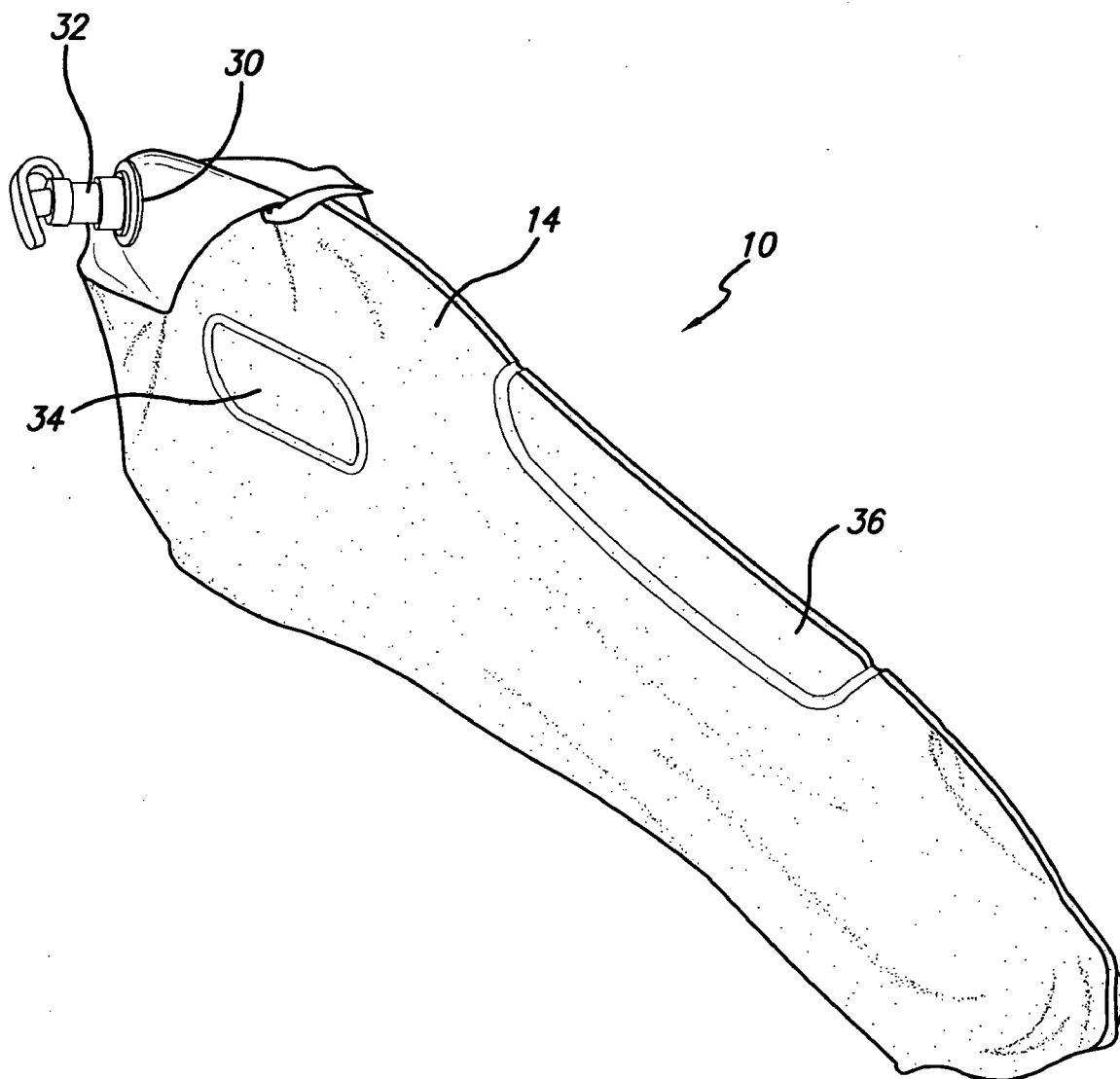


FIG. 1

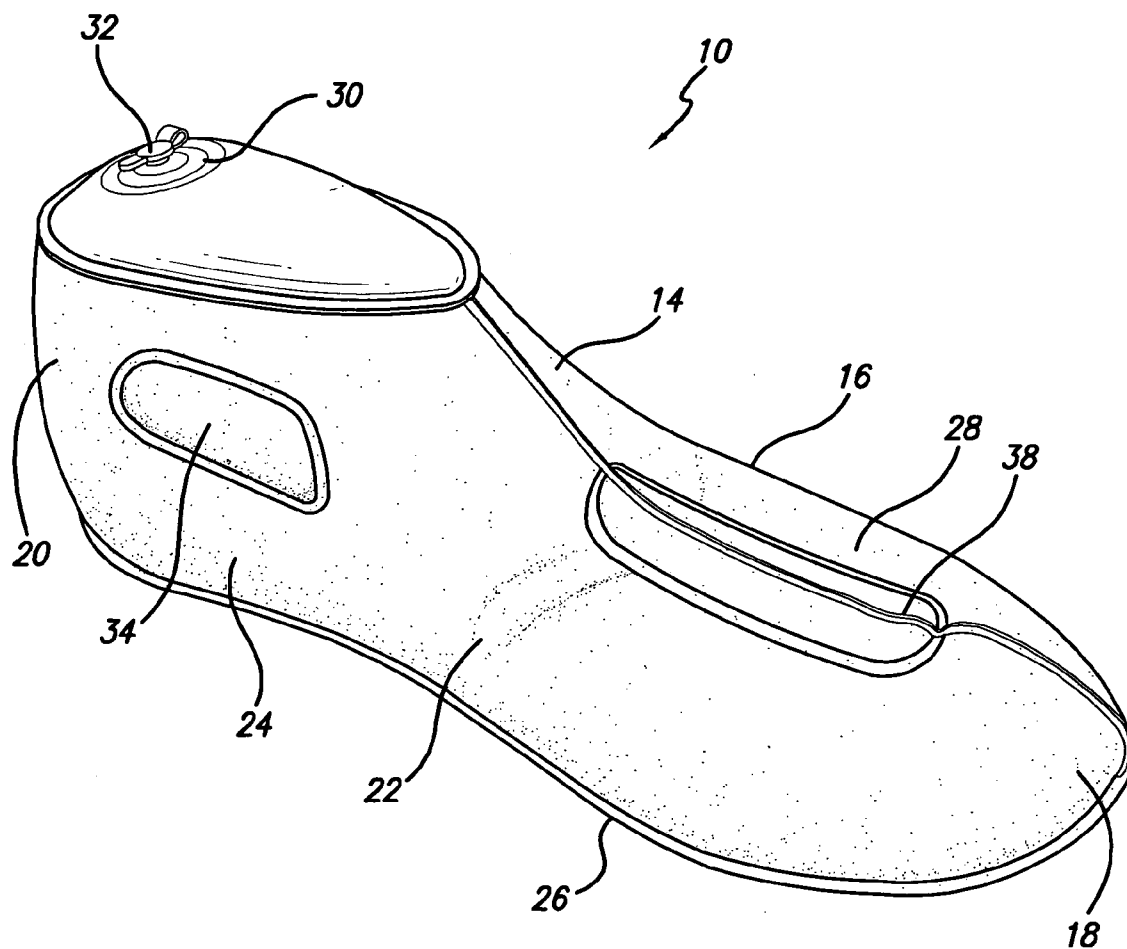
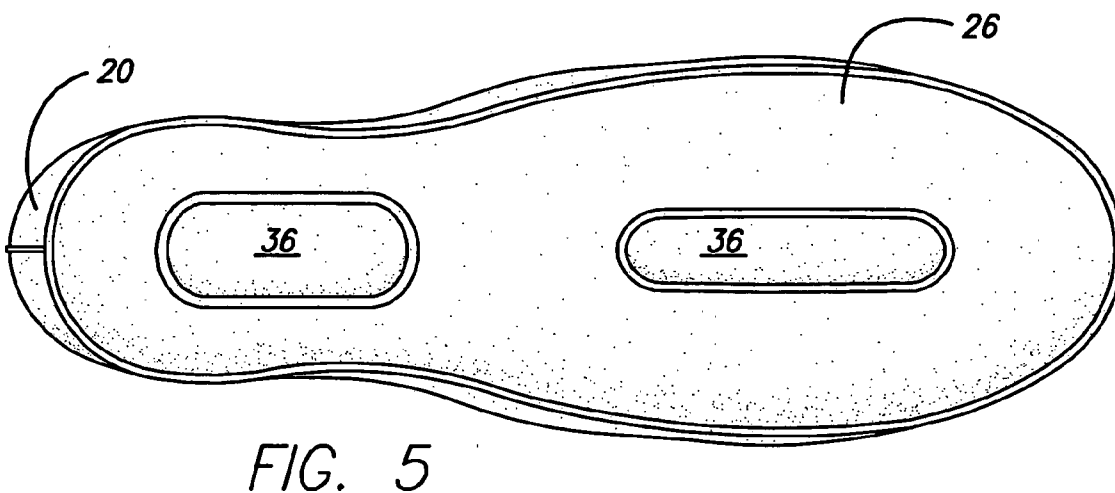
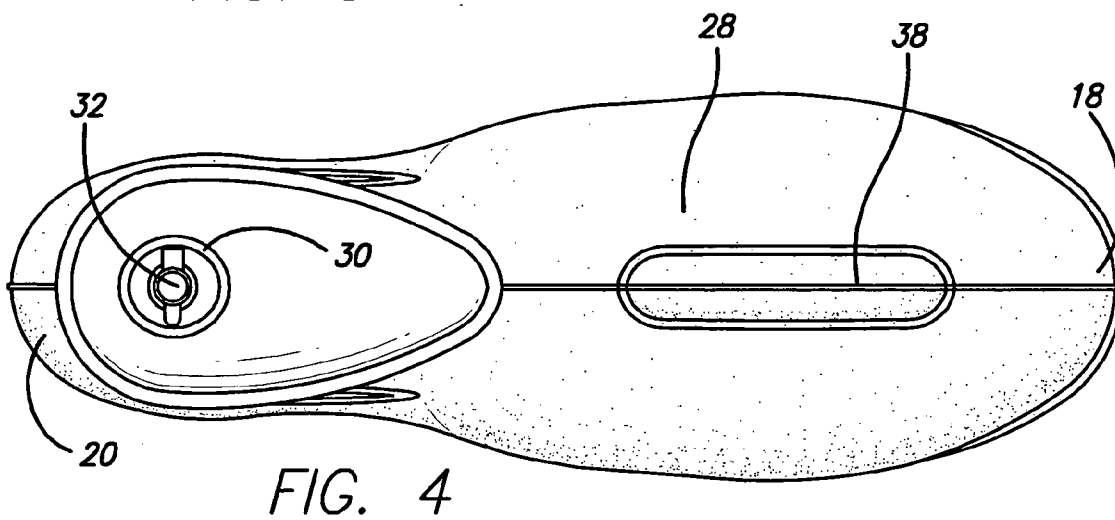
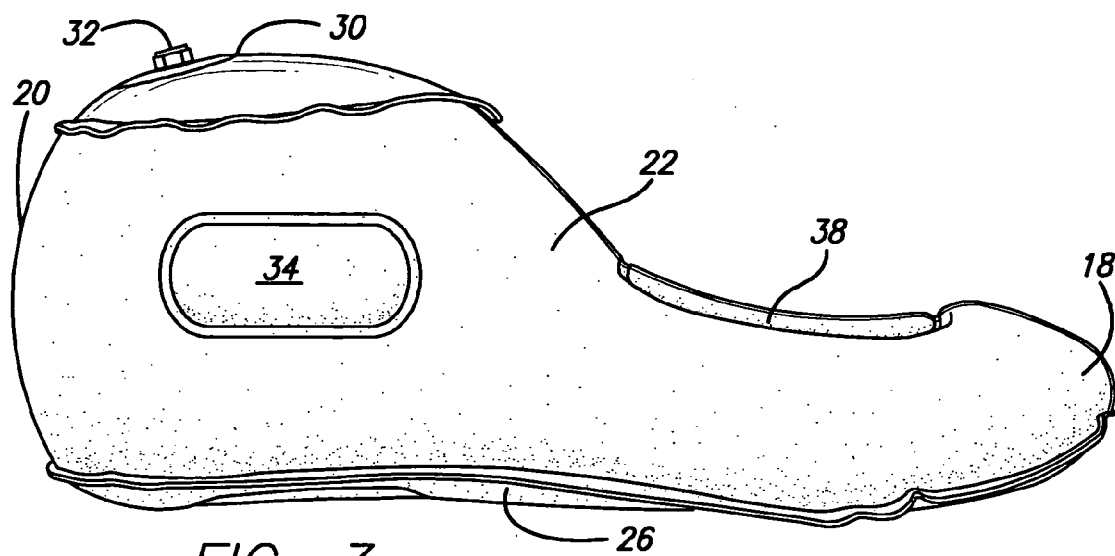


FIG. 2



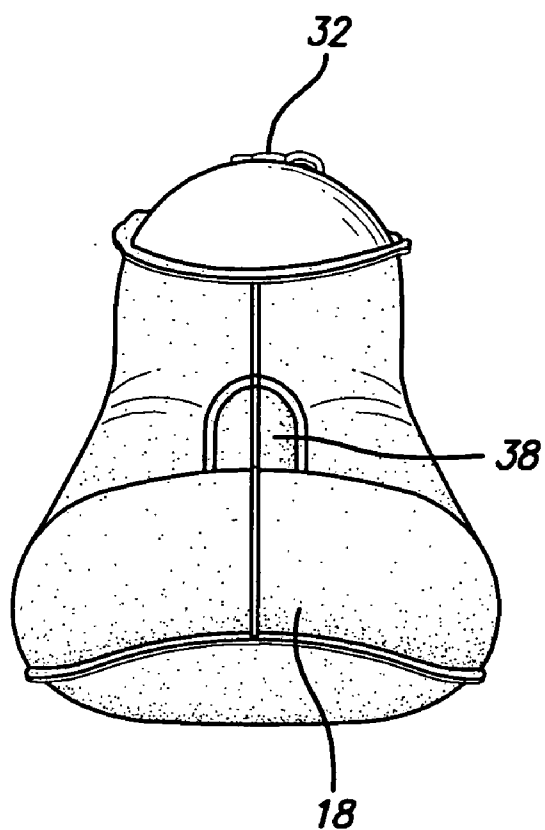
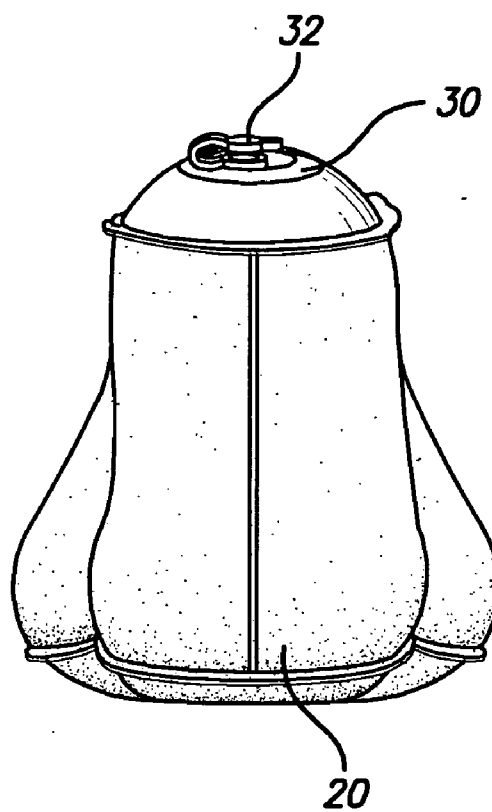


FIG. 6

FIG. 7



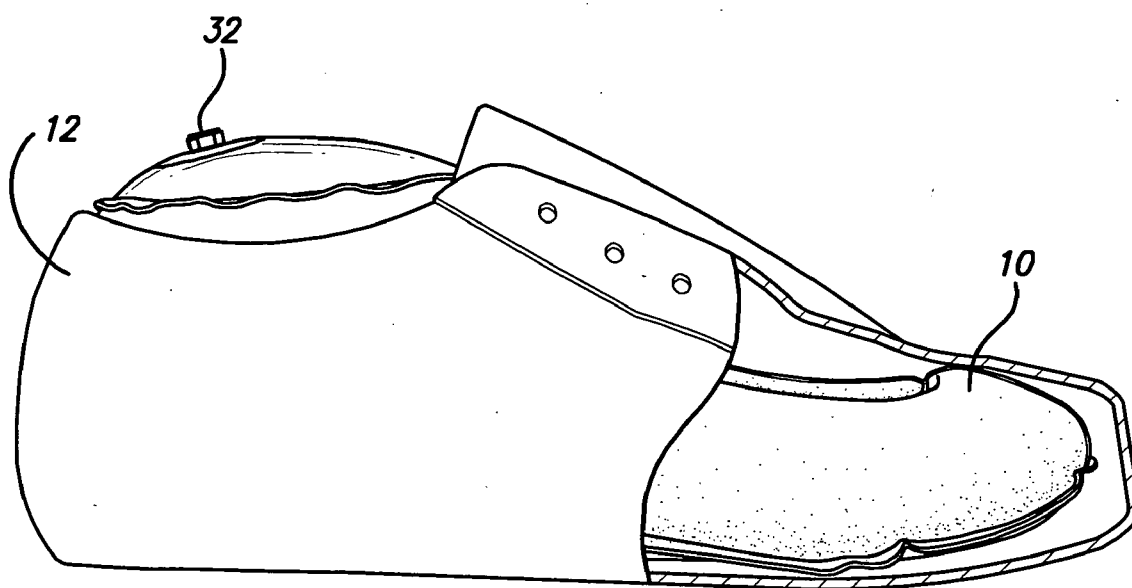


FIG. 8

INFLATABLE SHOE TREE

BACKGROUND OF THE INVENTION

[0001] The present invention is directed to a novel and nonobvious inflatable shoe tree. More particularly, the present invention is directed to a unique inflatable shoe tree that is easy to inflate and deflate and that is highly suitable for use both at home and for travel.

[0002] Known shoe trees are typically made of solid blocks of wood, a combination of wood and metal, or metal alone, all of which can be heavy, expensive to manufacture, complex to use, and bulky to pack when traveling. Moreover, when known shoe trees made of wood are washed, they take considerable time to dry and must be completely dry before they can be reused to prevent deterioration of such shoe tree. In addition, many known shoe trees are adjustable and require the use of metal springs to give the shoe tree flexibility, or require the use of some type of compression component or spacer bar to facilitate the insertion and removal of the shoe tree from a shoe. Such springs, compression components, and spacer bars increase the manufacturing costs of such shoe trees, increase the complexity of manufacture, and increase the possibility of breakage or malfunctioning of the shoe trees.

[0003] Accordingly, there is a need for a unique inflatable shoe tree that overcomes the problems associated with known shoe trees.

SUMMARY OF THE INVENTION

[0004] The present invention satisfies these needs as well as provides a unique and advantageous inflatable shoe tree. None of the known shoe trees provides all of the numerous advantages of the present invention. The inflatable shoe tree of the present invention has the following advantages over known shoe trees: it is made of a lightweight, flexible material that is durable, reliable and capable of lasting a long period of time; it deflates to an easily manageable size that is easy to pack and carry, that takes up minimal space, and that is convenient for travel; it is easy to use and can be quickly inflated and deflated; it is designed to retain and preserve a shoe in its original shape and form; it has an exterior made of a soft material to minimize wear and tear on the interior of a shoe; it is less expensive to manufacture than known wood and metal shoe trees; it can be coated with a fragrance to make the inside of a shoe smell good when the inflatable shoe tree is inserted into the shoe and thus minimizes foot odor within the shoe; it is sanitary and can be easily washed and dried without danger of deterioration of the material; it comes in a variety of sizes and is particularly suitable for tennis shoes, high-top tennis shoes, sandals and closed toe shoes; it can be used by retailers for use in displaying shoes in an attractive and easy to use manner; and, it can be quickly inflated by a user's exhaled air, a standard inflation pump, or other suitable inflation means.

[0005] In one version, the present invention provides an inflatable shoe tree comprising: a unitary body having, (a) an interior gas tight chamber, (b) a toe portion, (c) a heel portion, (d) a central portion between the toe portion and the heel portion, (e) a bottom portion, (f) a top portion, and (g) an inflation portion that allows for a volume of gas to enter and exit the gas tight chamber. The body is capable of being in an inflated position and a deflated position, and when in

an inflated position it forms a preformed three-dimensional structure substantially in the shape of a human foot, and when the shoe tree is in a fully deflated position, it is substantially flat in shape. The interior chamber is substantially hollow and is adapted for receiving a volume of gas such as air for inflation. The bottom portion of the body comprises a plurality of recessed segments. The top portion of the body comprises at least one recessed segment. The central portion of the body comprises a plurality of recessed segments that allow a user to more easily grip the shoe tree when in use. The inflation portion includes an inflation port that may be opened to allow a volume of gas to enter the gas tight chamber and exit the gas tight chamber, or the inflation port may be closed to prevent the escape of the gas from the gas tight chamber. The inflatable shoe tree can be inflated by exhaled air from a user, by use with a manual inflation pump, or by other suitable inflation means.

[0006] The inflatable shoe tree is preferably made of a flexible plastic material such as polyvinylchloride (PVC), polyethylene, thermoplastic, elastomeric plastic, or a combination of these materials. However, the inflatable shoe tree may also be made of another suitable flexible plastic material. The inflatable shoe tree may be partially coated on an exterior surface with a flock material such as cotton, rayon, nylon, polyester, or a combination of these materials.

[0007] In another version of the present invention, the inflatable shoe tree is coated or treated with a fragrance, a deodorizer, or a combination thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] These and other features, aspects and advantages of the present invention will become better understood from the following description, appended claims and accompanying drawings, where:

[0009] FIG. 1 is a perspective view of a version of the inflatable shoe tree of the present invention in a deflated position;

[0010] FIG. 2 is a perspective view of the version of the inflatable shoe tree of the present invention shown in FIG. 1 in a fully inflated position;

[0011] FIG. 3 is a right side view of the inflatable shoe tree shown in FIG. 2;

[0012] FIG. 4 is a top view of the inflatable shoe tree shown in FIG. 2;

[0013] FIG. 5 is a bottom view of the inflatable shoe tree shown in FIG. 2;

[0014] FIG. 6 is a front view of the inflatable shoe tree shown in FIG. 2;

[0015] FIG. 7 is a back view of the inflatable shoe tree shown in FIG. 2; and,

[0016] FIG. 8 shows the inflated position of the inflatable shoe tree of the present invention in use with a shoe.

DETAILED DESCRIPTION

[0017] The present invention is directed to a unique and nonobvious inflatable shoe tree. Referring to FIG. 1, a perspective view of an inflatable shoe tree 10 of the present invention in a deflated position is shown. Referring to FIG.

2, a perspective view of the shoe tree 10 in FIG. 1 is shown in a fully inflated position. Referring to FIG. 8, the inflatable shoe tree 10 is shown in use with a shoe 12. FIG. 3 is a right side view of the inflatable shoe tree shown in FIG. 2. FIG. 4 is a top view of the inflatable shoe tree shown in FIG. 2. FIG. 5 is a bottom view of the inflatable shoe tree shown in FIG. 2. FIG. 6 is a front view of the inflatable shoe tree shown in FIG. 2. FIG. 7 is a back view of the inflatable shoe tree shown in FIG. 2.

[0018] As shown in FIG. 2, the inflatable shoe tree 10 comprises a unitary body 14. The body is elongated, and when the shoe tree 10 is in a fully inflated position, it forms a preformed three-dimensional structure that is substantially in the shape of a human foot. When the shoe tree 10 is in a fully deflated position, it is substantially flat in shape as shown in FIG. 1. Preferably, the body of the shoe tree has a thickness of at least 0.3 millimeters. However, the body of the shoe tree may be of other thicknesses. The body 14 comprises an interior gas tight inflatable chamber (not shown) within the body. The body 14 further comprises an exterior surface 16 that forms and comprises a toe portion 18; a heel portion 20; a central portion 22 between the toe portion 18 and the heel portion 20 wherein the central portion has sides 24 (right side and left side); a bottom portion 26; a top portion 28; and an inflation portion 30 that allows for a volume of gas to enter and exit the gas tight inflatable chamber. The interior chamber is substantially hollow and is adapted for receiving a volume of gas, such as air, for inflation from an inflation port 32 on the inflation portion 30. The interior chamber is capable of holding a volume of gas and can be sealed so that it is capable of maintaining an inflated state for an extended period of time. Various portions of the body 14 may be joined together at various seams by heat sealing. Preferably, all portions are molded in a single operation into a single integrated plastic body. Preferably, the body is made from a mold.

[0019] The toe portion 18 is adapted to fit into a toe portion of a shoe (see FIG. 8), while the heel portion 20 is adapted to fit into a rear or heel portion of a shoe. The toe portion 18 is insertable into a toe portion of a respective shoe and formed to support the toe portion of the shoe. The heel portion 20 is insertable into a heel portion of a respective shoe and formed to support the heel portion of the shoe. The heel portion 20 has a generally vertical yet slightly rounded back surface 34 (see FIG. 3) that abuts the inside of the generally vertical back of a respective shoe.

[0020] The central portion 22 of the body 14 may have a plurality of recessed segments 34 (see FIGS. 2-4) on each side 24 of the body that allow a user to more easily grip the shoe tree when in use and assist the user in inserting and removing the shoe tree into and out of the shoe. The recessed segments 34 are dimensioned and positioned to give the central portion 22 a predetermined amount of flexibility. The bottom portion 26 of the body 14 may have a plurality of recessed segments 36 (see FIG. 5). These recessed segments 36 facilitate in making the bottom of the shoe tree sit within a shoe in a substantially flat position rather than a rounded position. The recessed segments help to make the bottom of the shoe tree have a more flattened position rather than a rounded position and thus increase the surface contact between the bottom of the shoe tree and the interior bottom of the respective shoe. The top portion 28 of the body 14 may have at least one recessed segment 38 (see FIGS. 2-4).

This recessed segment 38 helps to make the top of the shoe tree have a more flattened position rather than a rounded position and thus increases the surface contact between the top portion of the shoe tree and the interior top portion of the respective shoe.

[0021] The inflatable shoe tree 10 is preferably made of a flexible, resilient, and pliable plastic material. More preferably, the plastic material comprises a high density polyvinylchloride (PVC), polyethylene, thermoplastic, elastomeric plastic, or a combination of these materials. However, the inflatable shoe tree may also be made of other suitable flexible plastic materials known to one of ordinary skill in the art. The preferred plastic material preferably has a sufficient rigidity to provide stable support to the shoe tree when placed inside a shoe.

[0022] Preferably, a portion of the exterior surface 16 of the body 14 is textured so as to enhance the frictional characteristics thereof, thereby permitting the shoe tree to engage the interior of a shoe with a frictional grip. The friction enhancing texture is preferably derived by flocking the exterior surface. Preferably, the exterior surface 16 of the shoe tree 10 is partially coated or laminated with a flock material. More preferably, the flock material comprises cotton, rayon, nylon, polyester, or a combination thereof, or another suitable flock material. The flock material provides the look and feel of cloth and assists in preventing or minimizing movement of the inflatable shoe tree 10 inside the shoe. This soft exterior flock material preserves the interior of a shoe and retains the shoe in its desired shape.

[0023] The inflatable shoe tree 10 may preferably be inflated by exhaled air from a user or by use with a standard manual inflation pump. The inflatable shoe tree may also be inflated by other suitable inflation means. As shown in FIGS. 1-4 and 6-7, the inflatable portion 30 preferably comprises at least one inflation port 32 that may be opened to allow a volume of gas such as air to enter the gas tight chamber and exit the gas tight chamber, or that may be closed to prevent the escape of the gas from the gas tight chamber. The inflation port 32 or air inlet may be used to permit the shoe tree to be manually inflated by a user blowing into the inflation port 32. The inflation port 32 enables air to enter and exit the shoe tree. The inflation port 32 preferably comprises a push-pull valve having a body capable of at least being partially disposed within the interior chamber and a stem that is movable between an open and a closed position. Pulling the stem away from the body 14 opens the inflation port 32 and pushing the stem toward the body 14 closes the inflation port 32. Other types of inflation means or valves, such as a flat valve and other variations of the push-pull valve come within the scope of this invention. The inflation port 32 is preferably made from a pliable, sealable material, such as linear, high density polyethylene, rubber, or other suitable plastic material. The inflation port may also be made of other suitable materials known to those skilled in the art.

[0024] As an alternative to a user blowing into the inflation port 32 to inflate the inflatable shoe tree of the present invention, a user may use a standard manual inflation pump or air pump (not shown) which may be used to manually inflate the shoe tree. The inflation or air pump is operable to inflate the interior chamber of the shoe tree with a pressurized gas such as air so that inflation of the chamber causes

the shoe tree to inflate. A standard pump is preferably formed from a material, such as a plastic polymer, which is relatively soft and has a flexible quality to permit it to resume its original shape. The amount of compressed air pumped into the interior chamber of the shoe tree by the user determines the degree of firmness desired. It should also be appreciated that, although less desirable, liquids or other fluids other than air may be utilized to pressurize the chamber.

[0025] When using the shoe tree of the present invention, the shoe tree **10** may be inserted and removed from a shoe in several ways. Preferably, a user first partially inflates the shoe tree. The user then inserts the partially inflated shoe tree into the interior of a desired shoe. The user then further inflates the shoe tree to the desired firmness within the shoe. The user closes the inflation port **32** and pushes it down inside the interior chamber of the shoe tree. Alternatively, a user can fully inflate the shoe tree, grip the recessed segments **34** on each side, and insert the inflated shoe tree into the shoe. To remove the shoe tree **10** from a shoe, a user pulls up on the inflation port **32** to open the port and squeezes the port to deflate the shoe tree. Once the shoe tree is partially or fully deflated, the user can easily remove the shoe tree from the shoe. Alternatively, a user can reach inside the shoe, grip the recessed segments **34** of the fully inflated shoe tree, and pull the inflated shoe tree out of the shoe. As shown in **FIG. 8**, the shoe tree of the present invention is shown in an inflated state within shoe **12**.

[0026] The inflatable shoe tree of the present invention can be made in a variety of different shoe sizes and can accommodate men's, women's and children's size shoes. The shoe tree of the present invention can be easily made in a large variety of colors to suit the particular needs and tastes of a corresponding variety of users. Moreover, the shoe tree of the present invention may be adorned with decorative designs, identifications, and/or advertising materials.

[0027] In another version of the present invention, the shoe tree, as described above, may be coated or treated with a variety of different pleasant fragrances, deodorizers, or a combination thereof. Thus, the fragrant shoe tree can maintain the freshness of a shoe when placed inside the shoe. Such fragrance may be applied during the manufacturing process or may be included in a separate container with the shoe tree, preferably in the form of a spray can aerosol type gaseous deodorant or a pump bottle containing a gaseous deodorant to which a user can apply directly to the shoe tree as desired.

[0028] It is a simple matter to keep the shoe tree of the present invention clean by simply removing it from the shoe and hand washing it with soap and water. It can dry relatively quickly.

[0029] Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions of the invention are possible. In compliance with the statute, the invention described herein has been described in language more or less specific as to structural features. It should be understood, however, that the invention is not limited to the embodiments described herein or to specific features shown, since the means and constriction shown, is comprised only of the preferred embodiments for putting the invention into effect. It is also understood that the phraseology and terminology

employed herein are for the purpose of description and should not be regarded as limiting. Therefore, the scope of the appended claims should not be limited to the description of the preferred versions contained herein.

1. An inflatable shoe tree comprising:

a unitary body having, (a) an interior gas tight chamber, (b) a toe portion, (c) a heel portion, (d) a central portion between the toe portion and the heel portion, (e) a bottom portion, (f) a top portion, and (g) an inflation portion that allows for a volume of gas to enter and exit the gas tight chamber.

2. The inflatable shoe tree of claim 1 wherein the shoe tree is made of a flexible plastic material selected from the group comprising polyvinylchloride (PVC), polyethylene, thermoplastic, elastomeric plastic, or a combination thereof.

3. The inflatable shoe tree of claim 2 wherein the shoe tree is partially coated on an exterior surface with a flock material selected from the group comprising cotton, rayon, nylon, polyester, or a combination thereof.

4. The inflatable shoe tree of claim 1 wherein the shoe tree is coated with a chemical material selected from the group comprising a fragrance, a deodorant, or a combination thereof.

5. The inflatable shoe tree of claim 1 wherein the shoe tree can be inflated by exhaled air from a user or by use with a manual inflation pump.

6. The inflatable shoe tree of claim 1 wherein the inflation portion includes an inflation port that may be opened to allow a volume of gas to enter the gas tight chamber and exit the gas tight chamber, or that may be closed to prevent the escape of the gas from the gas tight chamber.

7. The inflatable shoe tree of claim 1 wherein the central portion of the body has sides that include a plurality of recessed segments that allow a user to more easily grip the shoe tree when in use.

8. The inflatable shoe tree of claim 1 wherein when the shoe tree is in a fully inflated position, it is substantially in the shape of a human foot, and when the shoe tree is in a fully deflated position, it is substantially flat in shape.

9. The inflatable shoe tree of claim 1 wherein the interior chamber is substantially hollow.

10. The inflatable shoe tree of claim 1 wherein the bottom portion of the body comprises a plurality of recessed segments.

11. The inflatable shoe tree of claim 1 wherein the top portion of the body comprises at least one recessed segment.

12. The inflatable shoe tree of claim 1 wherein the gas is air.

13. An inflatable shoe tree comprising:

a body capable of being in an inflated position and a deflated position, and when in an inflated position forming a preformed three-dimensional structure substantially in the shape of a human foot, wherein the body has an interior hollow chamber adapted for receiving a volume of gas for inflation; the body has an exterior surface having a top portion, a bottom portion, and side portions; and, the body has an inflation port that may be opened and closed to allow for the volume of gas to enter and exit the gas tight chamber and to remain in the gas tight chamber.

14. The inflatable shoe tree of claim 13 wherein the shoe tree is made of a flexible plastic material selected from the group comprising polyvinylchloride (PVC), polyethylene, thermoplastic, elastomeric plastic, or a combination thereof.

15. The inflatable shoe tree of claim 14 wherein the exterior surface of the shoe tree is partially coated with a flock material selected from the group comprising cotton, rayon, nylon, polyester, or a combination thereof.

16. The inflatable shoe tree of claim 13 wherein the shoe tree is coated with a chemical material selected from the group comprising a fragrance, a deodorant, or a combination thereof.

17. The inflatable shoe tree of claim 13 wherein the shoe tree can be inflated by exhaled air from a user or by use with a manual inflation pump.

18. An inflatable shoe tree comprising a body capable of being in an inflated position and a deflated position, and when in an inflated position forming a preformed three-dimensional structure substantially in the shape of a human foot, wherein the body has an inflation port that may be opened and closed to allow for a volume of gas to enter and exit the gas tight chamber and to remain in the gas tight chamber.

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