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(54) **SHOE INSERT PAD**

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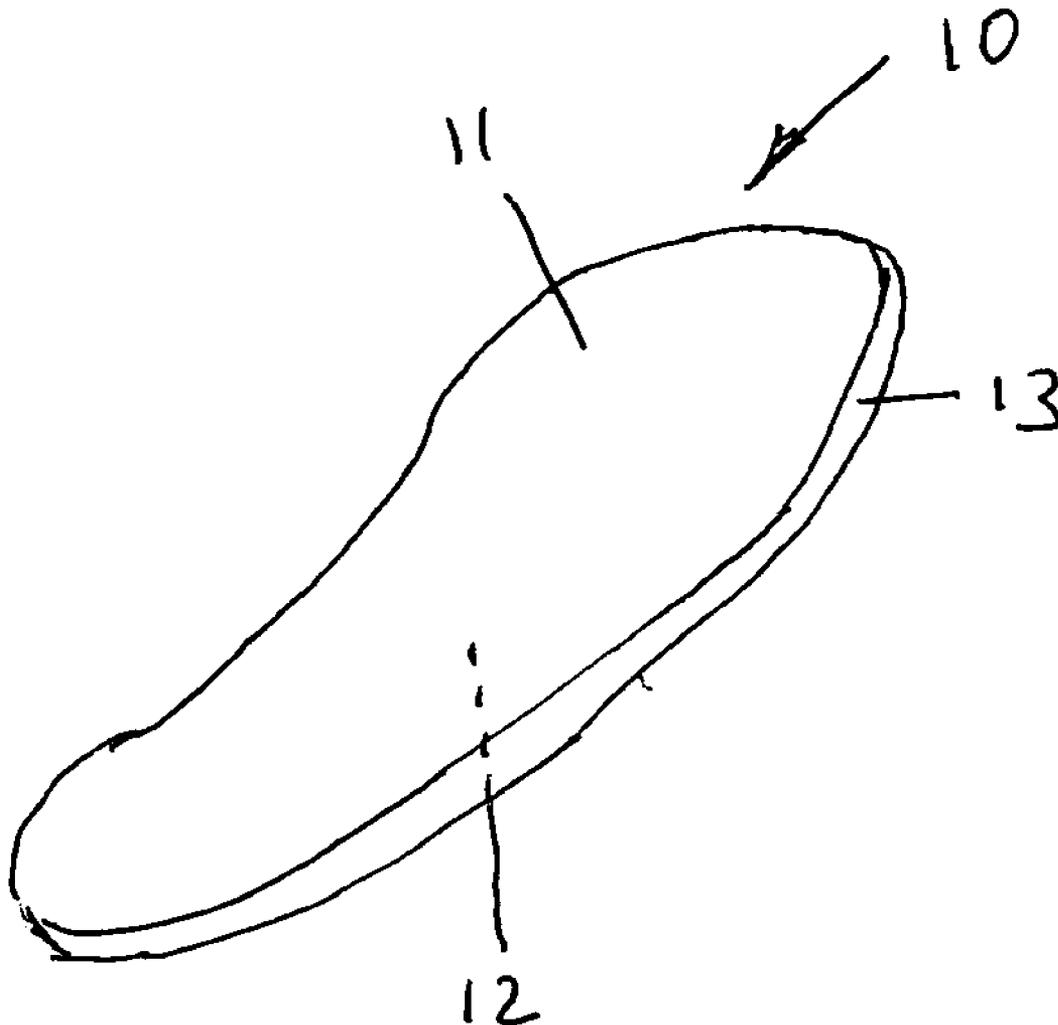
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(57) **ABSTRACT**

A shoe insert pad is disclosed. The shoe insert pad includes a first planar surface and a second planar surface, wherein the first and second planar surfaces are defined by a shoe insert pad, comprising: a first planar surface; a second planar surface; and an edge defining the first planar surface and second planar surface substantially in the shape of a human foot; wherein the shoe insert pad is formed of a polyethylene vinyl acetate material having a density between 8 and 9 pounds per cubic foot.

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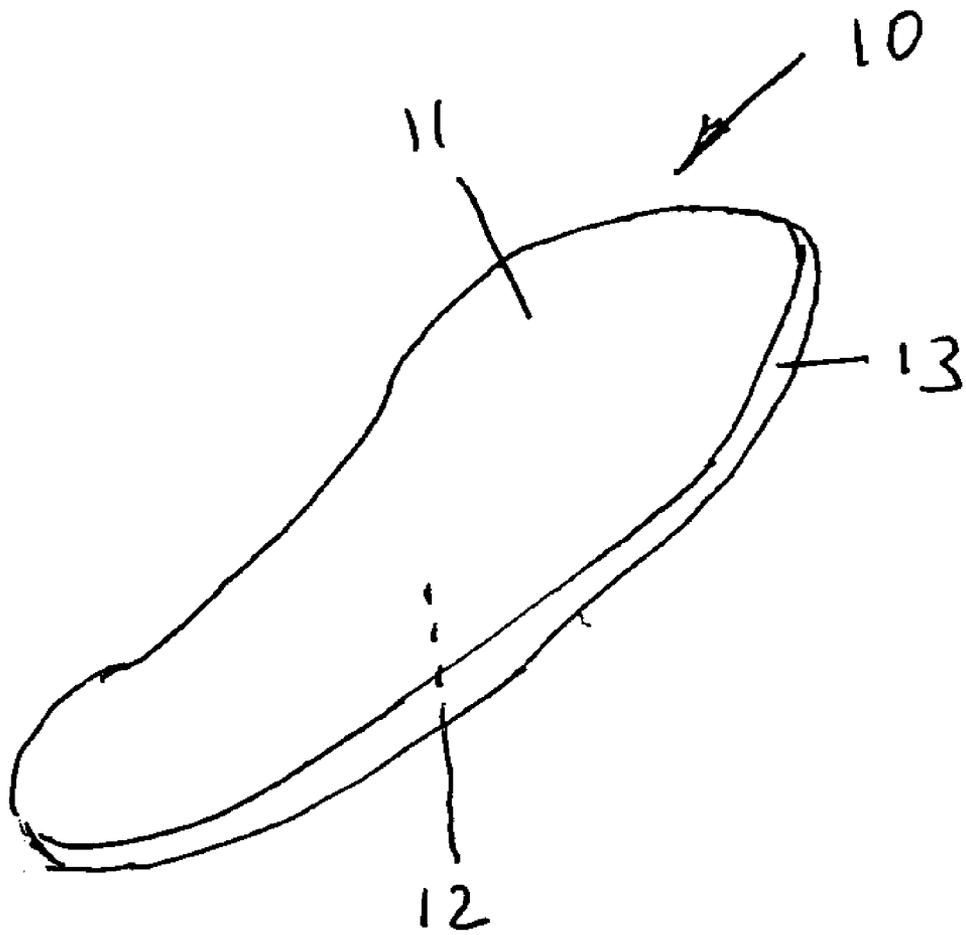


FIGURE 1

## SHOE INSERT PAD

### FIELD OF THE INVENTION

[0001] The present invention relates to insert pads for shoes, and in particular to a foam shoe insert that is long lasting and provides increased comfort.

### BACKGROUND OF THE INVENTION

[0002] Over time, the kinetic force of daily walking plus just standing and shifting one's weight from one foot to the other places the human frame into a compromising position. The human frame is referred to here as the "carriage system" The carriage system is comprised of the soft pads of the heels and soles of the feet, hips, lower back, spine, knee joints, arches, toes, small bones and ankles. As a result without any kind of long term protection the carriage system must go through a constant ritual of collapse and repair. This quite naturally contributes to the aging process of this system and to the early break down of weak points within the system due to personal genetics. Also persons who must work while constantly on their feet can suffer possible random long term injuries to parts of the carriage system. when the spine itself is the affected part the end results can be far reaching. In answer to these undesirable conditions, a number of products have been introduced into the market.

[0003] U.S. Pat. No. 6,519,874 discloses a footwear assembly having a footbed and an insole, which is removably secured to the footbed. The footbed includes a substantially flexible front portion and a rear portion connected to the front portion. The rear portion has a substantially rigid unit with at least one cavity. The cavity is adapted to receive a layer of cushioning material therein.

[0004] U.S. Pat. No. 6,050,001 is directed to a shock absorbent shoe including an outsole having a toe, a heel, and a cavity in the heel. An elastomeric shock absorbing plug is disposed within the heel cavity and includes a planar lower surface and an upper surface. The upper surface of the plug includes a raised central portion, an outer boundary, and an annular depression separating the raised central portions from the outer boundary. The shoe is divided into a number of shock absorbing zones, with each of zones including one or more shock absorbing layers or components.

[0005] U.S. Pat. No. 4,805,319 discloses the encapsulation of a cellular insert, formed of various woven cellular components, or fabricated to a grooved design formed of a series of linearly woven strands, each of which presents various voids or cavities within their formed structure, and then foamed in place within a polymer formed sock liner or insole for use within footwear, and particularly an athletic shoe, including the sole of a walking or other shoe. The cellular insert may be formed of a series of woven or wound cellular shaped components, having their voids therein, and which may be arranged intermediate a pair of liners, which form the upper and lower liners for the formed insert, or arranged upon a singular liner, or having the liner woven through its midpoint, in order to provide for its rather proper location within the structure of the polymer formed sole or insole. In addition, the cellular insert, as previously explained, may be formed of a series of longitudinally and crosswise interwoven strands of linear material, which form various symmetrically shaped channels or grooves, this cellular insert also being embedded within a foam formed sock liner, for use

internally within an athletic or other shoe for comforting the wearer of the shoe and its incorporated liner as in usage during participation within a variety of sporting events, such as football, basketball, jogging, court playing, or even walking, or other such endeavors.

[0006] U.S. Pat. No. 4,910,886 discloses a shock-absorbing innersole for use in footwear, which innersole comprises an innersole body composed of a substantially nondeformable elastomeric-type urethane cellular polymer, having a contoured molded heel and arch section and a substantially flat sheet containing a ball and toe section, the innersole having one or more shock-absorbing inserts in the innersole positioned in the heel, ball or both areas of the innersole, the insert composed of a solid elastomeric polymer which has greater shock-absorbing properties and greater surface tack than the elastomeric urethane of the innersole body.

[0007] U.S. Pat. No. 6,195,917 discloses an insole insert for application into a shoe, and which is formed as a laminar material of various layers of paper, polymer, stranded thermoplastic or thermosetting material, foams of select consistencies and texture, in addition to a felt or microfiber type of upper layer, to add to the cushioning and softness of the insert, when applied. The insert, when subjected to heat and pressure, particularly pressure applied by the foot, conforms to the contours of the foot, and sustains such, even after prolonged usage after application into a shoe.

[0008] U.S. Pat. No. 5,718,064 is directed to a conforming sole construction for a walking shoe is characterized by a flexible PVC outsole containing in its upper surface a low density polyurethane insert for shock absorption. Mounted on the upper surface of the outsole and insert is a combined footbed and multilayered socklining. The footbed is formed of EVA and includes integral heel and arch support portions. The socklining has a lower layer of shock absorbing closed cell foam material, a layer of latex material containing humidity and odor absorbing carbon particles, an upper layer of open cell ergonomic foam material, and a cover layer of woven water absorbing and polyester fiber materials for wicking moisture from the foot of the wearer. The sole construction provides increased support for the heel and arch of the wearer's foot and improved cushioning over the length of the foot.

[0009] U.S. Pat. No. 4,346,525 discloses a cushion pad for sport shoes and the like and a method for manufacturing such a pad and the combination of such a pad with a sport shoe and the like. The pad of the present invention is fabricated from a flat web of closed pore foam of cross-linked ethylene vinyl acetate-low density polyethylene copolymer. The pad is formed between two opposing molds to present a shape having a cup-like depression adapted and constructed to accept essentially the heel portion of a human being. The so-formed pad is then cut out of the remainder of the formed web in a manner whereby the pad provides support from just in back of the first metatarsal joint to the sides and back of the calcaneus. It has been found that the resultant pad made within the purview of the invention requires only a few sizes to fit most of the feet of possible users.

[0010] U.S. Pat. No. 5,435,078 is directed to a suspension system for shoe soles includes an insole mounted on the upper surface of an outsole and containing shock absorbing inserts in forepart and heel areas thereof. The forepart insole

insert comprises a shock foam and the heel insole insert comprises polyurethane. Above the forepart area of the insole is provided a midsole containing a polyurethane shock absorbing insert which abuts against the foam insert in the insole to increase the cushioning effect on the forepart area of the foot. A two-layer socklining completes the suspension system. It includes a lower layer of shock absorbing foam and an upper cover of coagulated urethane. The socklining completely covers the footbed. The suspension system provides greater comfort, shock absorption, and cushioning to the wearer and is particularly suitable for women's dress and casual shoes.

[0011] Additionally, U.S. Pat. No. 4,656,760 discloses the encapsulation of a cellular insert, in the form of cellular components, formed of woven material fabricating such cellular components that present voids or cavities therein, or which may be formed from spirally or helically wound strands of a polymer having a hardness exceeding that of the foamed or other polymer composition in which the insert locates, as within the structure of a sole for an athletic shoe. The cellular insert may be formed of a series of woven or wound cellular shaped components, having the voids therein, and which may be arranged intermediate a pair of liners, which also may be of woven material, in order to provide for its rather proper location within the structure of the polymer foamed shoe sole, be totally embedded therein, but yet very effectively function as a means for cushioning or absorbing the forces of impact exerted upon the shoe sole during application of the athletic shoes during participation within a variety of sporting events, such as football, basketball, jogging, court playing, or the like.

[0012] The problem with many of these products is that they lose their resilience early on and cease to offer effective resistance to impact providing only limited support to the carriage system in the long term. Additionally, some products can be very expensive. There is therefore a need for a fairly inexpensive shoe insert pad that has a long useful life, that can both reduce the expense of replacing worn shoes and frequent shoe repair, and that can provide ample and comfortable support for the carriage system of the human body to lessen the stresses placed on it, and minimizing the wear and tear on it.

#### OBJECTS AND SUMMARY OF THE INVENTION

[0013] It is an object of the present invention to provide a shoe insert pad that provides comfortable support for the carriage system of a human body.

[0014] It is a further object of the present invention to provide a shoe insert pad that has a relatively high useful life.

[0015] It is a further object of the present invention to provide a shoe insert pad that can reduce the expense of costly shoe replacement and/or frequent shoe repair.

[0016] It is yet a further object of the present invention to provide a shoe insert pad that can be custom cut to the foot size of a wearer and one that when subjected to heat and pressure applied by the foot, conforms to the topographical contours of the foot, and sustains such, even after prolonged applied usage.

[0017] In accordance with a first aspect of the present invention, a novel shoe insert pad is provided. The novel

shoe insert pad includes a first planar surface, a second planar surface, and an edge defining the first and second planar surfaces.

[0018] In accordance with another aspect of the present invention, a novel shoe insert pad providing increased comfort and an extended useful life is provided. The novel shoe insert pad includes a first planar surface, a second planar surface, and an edge defining the first planar surface and second planar surface substantially in the shape of a human foot, wherein the shoe insert pad is formed of a polyethylene vinyl acetate material having a density between 8 and 9 pounds per cubic foot.

[0019] In accordance with yet another aspect of the present invention, a novel shoe insert pad providing for ample protection for shoe heels, soles and threads so as to reduce the expense of costly shoe replacement and/or frequent shoe repair is provided. The novel shoe insert pad includes a first planar surface, a second planar surface, and an edge defining the first planar surface and second planar surface substantially in the shape of a human foot, wherein the shoe insert pad is formed of a polyethylene vinyl acetate material having a density between 8 and 9 pounds per cubic foot.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The foregoing summary, as well as the following detailed description of a preferred embodiment of the present invention will be better understood when read with reference to the appended drawings, wherein:

[0021] **FIG. 1** is a perspective view of a shoe insert pad in accordance with the present invention; and

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0022] Referring now to the drawing, and in particular to **FIG. 1**, there is shown a shoe insert pad **10**. The shoe insert pad **10** includes a first planar surface **11** and a second planar surface **12** opposite the first planar surface **11**.

[0023] The first planar surface **11** and the second planar surface **12** are shaped substantially in the shape of a human foot. Additionally, the first planar surface **11** and the second planar surface **12** are defined by an edge **13**. The edge **13** may be of varying thickness, but in a preferred embodiment of the present invention, the edge **13** of the shoe insert pad **10** is  $\frac{3}{16}$  inches thick.

[0024] In a preferred embodiment of the present invention, the shoe insert pad **10** is formed of a rigid foam material, specifically a polyethylene vinyl acetate (EVA) material. However, other materials known to one of ordinary skill in the art may be used to form the shoe insert pad **10** without departing from the scope and spirit of the invention. The EVA material will have a density between 8 and 9 pounds per cubic foot. In a preferred embodiment of the present invention, however, the EVA material will have a density of 9 pounds per cubic foot to maximize comfort and resiliency of the shoe insert pad **10**. Under average daily conditions the EVA material which is not subject to absorption of perspiration or other moisture and at the thickness of  $\frac{3}{16}$  inches, as recited in a preferred embodiment of the present invention, will exhibit an extended useful life from up to six months to one year, outlasting other insert pads on the

market. The shoe insert pad **10**, being shaped substantially in the shape of a human foot, may be custom cut to fit a variety of sizes of shoes using ordinary household scissors. In this way, the shoe insert pad **10** can be produced efficiently and at a cost effective rate that can be passed on to the consumer in the form of a reasonable and affordable price. In addition the effectiveness of the EVA material is so great that it reduces the wear on the heels, soles and threads of suitable footwear so much so that a single pair of shoes and/or flat bottomed boots can be made to last years longer than their original construction would allow.

[0025] In view of the foregoing disclosure, some of the advantages of the present invention can be seen. For example, a novel shoe insert pad is disclosed. The novel shoe insert pad is formed of a rigid foam material that is resilient enough to have a substantially useful life, while also providing ample support to a wearer even to saving wear and tear on his shoes. The shoe insert pad will reduce the stresses placed on the wearer's carriage system and likely retard aging in the components of the wearer's carriage frame. It will cause hard bunions which tend to form on the soft pads of the bottom of the foot to slowly disappear. Additionally, the novel shoe insert pad is substantially in the shape of a human foot and can be custom cut to fit a variety of wearer's shoe sizes, greatly reducing production costs which, in turn, can greatly reduce the cost of the novel shoe insert pad to the consumer.

[0026] While the preferred embodiments of the present invention have been described and illustrated, modifications may be made by one of ordinary skill in the art without departing from the scope and spirit of the invention as defined in the appended claims. For example, an EVA density between 8 and 9 pounds per cubic foot has been disclosed, however, any density known to one of ordinary skill in the art may be employed without departing from the scope and spirit of the invention.

What is claimed is:

- 1. A shoe insert pad, comprising:
  - a first planar surface;
  - a second planar surface; and
  - an edge defining the first planar surface and the second planar surface.
- 2. The shoe insert pad of claim 1, wherein the shoe insert pad is formed of a rigid foam material.
- 3. The shoe insert pad of claim 2, wherein the rigid foam material is formed of polyethylene vinyl acetate.
- 4. The shoe insert pad of claim 3, wherein the density of the rigid foam material is between 8 and 9 pounds per cubic foot.
- 5. The shoe insert pad of claim 4, wherein the density of the rigid foam material is 8 pounds per cubic foot.
- 6. The shoe insert pad of claim 4, wherein the density of the rigid foam material is 9 pounds per cubic foot.
- 7. The shoe insert pad of claim 1, wherein the thickness of the edge is  $\frac{3}{16}$  inches.
- 8. The shoe insert pad of claim 1, wherein the first planar surface and second planar surface are defined substantially in the shape of a human foot.
- 9. The shoe insert pad of claim 8, wherein the shoe insert pad is capable of being custom cut to a wearer's shoe size.
- 10. A shoe insert pad, comprising:
  - a first planar surface;
  - a second planar surface; and
  - an edge defining the first planar surface and second planar surface substantially in the shape of a human foot; wherein the shoe insert pad is formed of a polyethylene vinyl acetate material having a density between 8 and 9 pounds per cubic foot.

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