

[54] **ADJUSTABLE SHOE TREE** 2,159,525 5/1939 Harris 12/115.2
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[75] Inventor: **Earl William Harvey**, Weston, 2,879,527 3/1959 Davis 12/115.8
Ontario, Canada

[73] Assignee: **Lawrence Peska Associates, Inc.**,
New York, N.Y.

Primary Examiner—Patrick D. Lawson

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[56] **References Cited**

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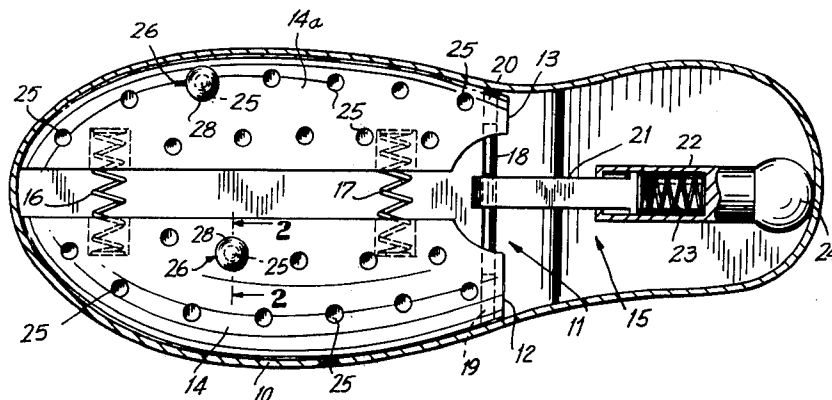
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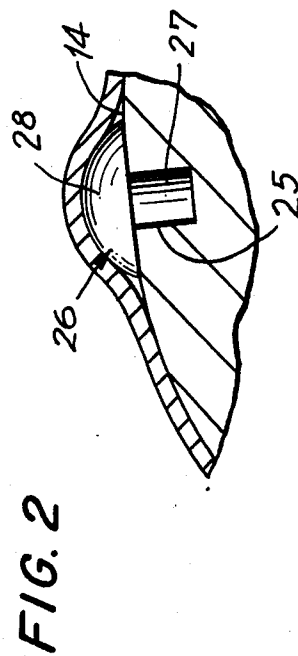
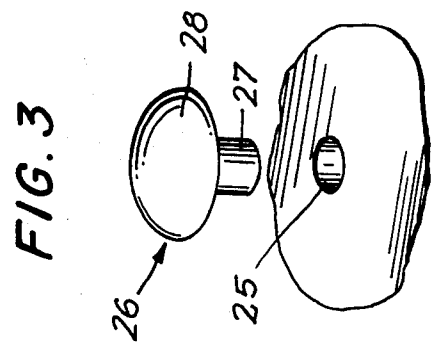
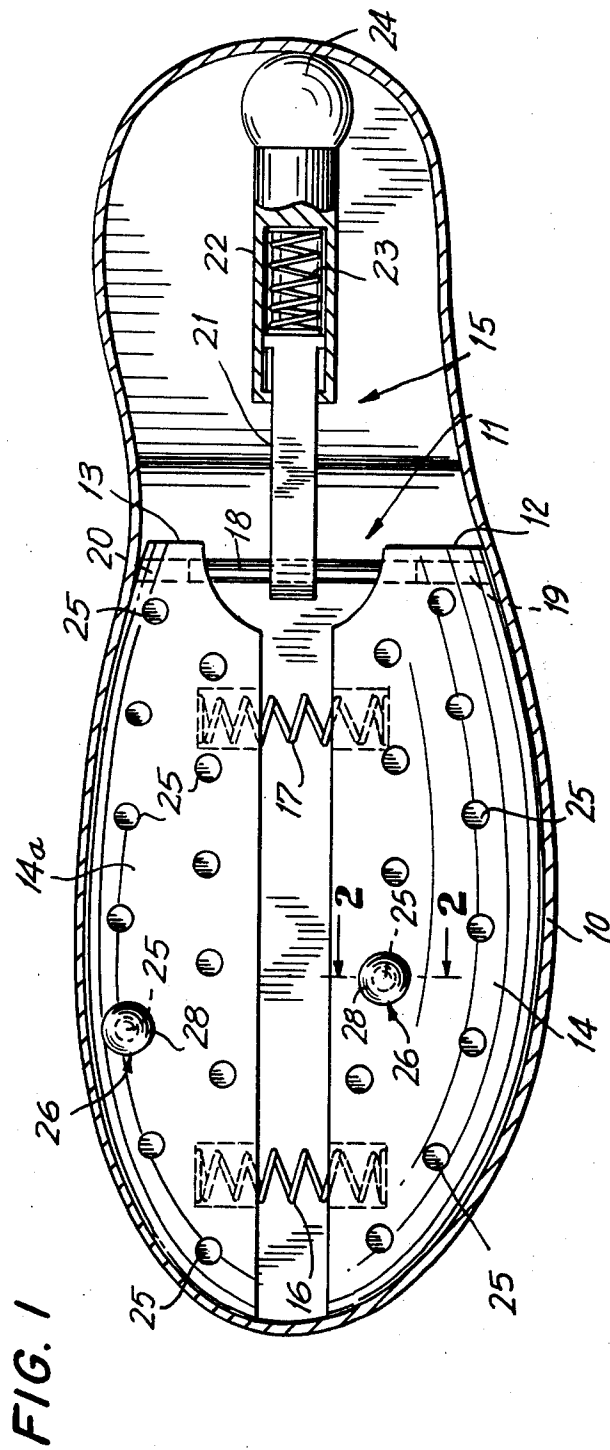
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ABSTRACT

A shoe tree adjustable widthwise and lengthwise to accommodate various size shoes having a plurality of cavities distributed on its top surface. The cavities accept stud members having a projecting dome like cap portion that functions to locally stretch the shoe material so that irregular areas of the foot may be accommodated more comfortably.

4 Claims, 3 Drawing Figures





ADJUSTABLE SHOE TREE

BACKGROUND OF THE INVENTION

The present invention relates to an improvement in adjustable shoe forms. Specifically the invention provides an adjustable shoe form having means for exerting internal localized pressure to deform and stretch a specific area of the shoe body so that it may better and more comfortably accommodate a human foot.

It is well known that the human foot varies greatly in configuration from person to person. Mass produced shoes are made in various lengths and widths but are rarely designed, except on a custom basis, to accommodate foot irregularities such as high instep, bunions, etc.

It is a primary objective of the present invention to provide a shoe form or tree of the type well known in the art with novel means for stretching predetermined areas of the shoe it is used with to accommodate foot irregularities more comfortably. It is a further objective of the invention to provide a shoe form of the foregoing type that is easily adapted for use with various types and sizes of shoes. Further objects and advantages of the invention will appear for the description of the invention and the illustrated embodiment thereof.

SUMMARY OF THE INVENTION

The shoe tree of the invention includes a pair of toe forms in longitudinal alignment joined by expansion members to vary the space between the two forms in order to accommodate various shoe widths. The toe forms have a fixed length and together have an upper surface configuration generally conforming to the upper surface of a shoe (either mens or ladies). A longitudinally adjustable heel member, extending from the toe forms to the heel of the shoe is provided to exert pressure on the rear of the shoe when the toe forms are in place at the front of the shoe.

In accordance with the invention, the upper surface of each of the toe forms have a plurality of circular cavities distributed about the surface in both a longitudinal and transverse direction. A plurality of stud members each having a cylindrical rod portion and an outwardly flanged arcuate cap portion are provided for use in combination with the toe form cavities. The stud members have the general appearance of a mushroom and are typically made from a resilient plastic material such as nylon or teflon. The studs are adapted for use with the toe form cavities by the cylindrical rod portions having a diameter slightly greater than the diameter of the cavities. When the rod portion of a stud member is forcefully inserted into a cavity it will be retained therein by frictional engagement between contacting the walls of the cavity and rod portion of the stud member. The flanged portion of the stud members have a flat surface transverse to the axis of the rod portion that lies against the surface of the toe form when the stud is in place and an domed upper surface that projects above the surface of the toe form. Stud members may be inserted into the appropriate cavity or cavities on the toe forms to exert localized pressure on a specific area of a shoe when the shoe tree is fitted inside the shoe. The localized pressure provided by the projecting portion of the stud members tends to stretch the shoe leather at that particular point to better accommodate an irregularity such as a bunion that might exist on the foot of the wearer at that particular point.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described with reference to the accompanying drawings in which:

FIG. 1 is a top plan view of the new shoe tree inside a shoe with the top portion of the shoe removed to show detail.

FIG. 2 is a cross-sectional elevation taken along line 2—2 of FIG. 1.

FIG. 3 is a perspective view of a cavity and stud member according to the invention.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring to FIG. 1, a shoe 10 containing a shoe tree 11 is shown. The shoe tree 11 includes a body portion comprising a pair of toe forms 12, 13 having an upper surface 14, 14a configured to conform with the upper portion of the shoe 10 and a heel member 15 extending from the rear of the toe forms to the rear portion of the shoe. The toe forms are joined by adjustable connecting members that can be and preferably are springs 16, 17 that permit widthwise expansion or contraction of the shoe tree to conform to various size shoes. Toe forms 12, 13 can also be joined at their rear portions by transverse pin 18. Pin 18 slides in channels 19, 20 that are provided in the rear portion of each of the toe forms. Pin 18 also functions as a connecting member between the toe forms 12, 13 and the heel member 15. Heel member 15 includes a bar member 21 that is loaded into cylinder 22 and includes a flat flanged end that bears against spring 23 disposed in cylinder 22. The spring 23 forcefully urges the rear of the heel member 24 against the rear of the shoe thereby maintaining the shoe 10 in a straightened condition. Means other than cylinder 22 and spring 23, such as an advancing screw can be used to longitudinally adjust heel member 15.

In accordance with a specific aspect of the invention, the top surfaces 14, 14a of toe forms 12, 13 include a plurality of circular cavities 25 distributed in locations where foot irregularities are most likely to exist. As shown in FIGS. 2 and 3, stud members 26, have a rod portion 27 with a diameter slightly greater than the diameter of the cavities 25 and are adapted to snugly fit into cavities 25. The stud members 26 include a projecting cap portion 28 having a flat inner surface that lies flat against the top surface 14 of the toe form 12 as shown in FIG. 2. The upper surface of the cap portion 28 is a truncated sphere giving the stud members 26 the general appearance of a mushroom.

In operation, a stud member 26 is inserted into cavities 25 that lie in the area of the shoe where an irregularity on the foot of the wearer exists. The shoe tree is inserted into the shoe and expands both widthwise and lengthwise by means of springs 16, 17 and 23 to snugly fit and to exert pressure on the internal walls of the shoe. The cap portion 28 of stud members 26 form raised areas that project outwardly against the shoe and deform and stretches the shoe material, as shown in FIG. 2, to relieve pressure on the irregular area of the foot when the shoe is next worn.

The toe forms 12, 13 may be constructed of any suitable material such as hard wood or moldable plastics which are preferred. Similarly, heel member 15 can be wood or plastic or any other suitable material while stud members 26 are preferably a resilient plastic mate-

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rial such as nylon or teflon so that they may be readily snapped into and out of cavities 25.

The invention has been described in terms of certain specific embodiments that should not be considered limiting. Reference should be made to the following claims in determining the full scope of the invention.

Having herein described the invention, what is claimed as new is:

1. A shoe tree comprising a body portion including a front section shaped to fit the toe portion of said shoe, adjustable means for varying the width and length of said body to accommodate various size shoes, said top surface including a plurality of cavities having a circular cross-section distributed thereon, and further comprising at least one stud member adapted to fit into and project from said cavities, said stud member comprising a rod portion having a diameter slightly greater than

the said cavity associated therewith and being of a resilient plastic material.

2. A shoe tree according to claim 1 wherein said stud members individually include a dome-like projecting cap portion that comprises a flanged portion defining a flat surface transverse to the axis of said rod portion, whereby said flat surface engages said top surface of said front section when said stud member is disposed on said front section.

3. The shoe tree of claim 1 wherein said body portion includes a pair of connected toe forms adjustable in a widthwise direction and a heel member adjustable in a lengthwise direction.

4. The shoe tree of claim 1 wherein said adjusting means includes spring members.

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