

[54] **FOOT TOY**
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[51] Int. Cl. A61f 3/00, A63b 25/00
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272/70-70.2, 57 R, 57 D, 57 E; 36/7.5, 7.6,
7.8; D2/317; D34/14.5

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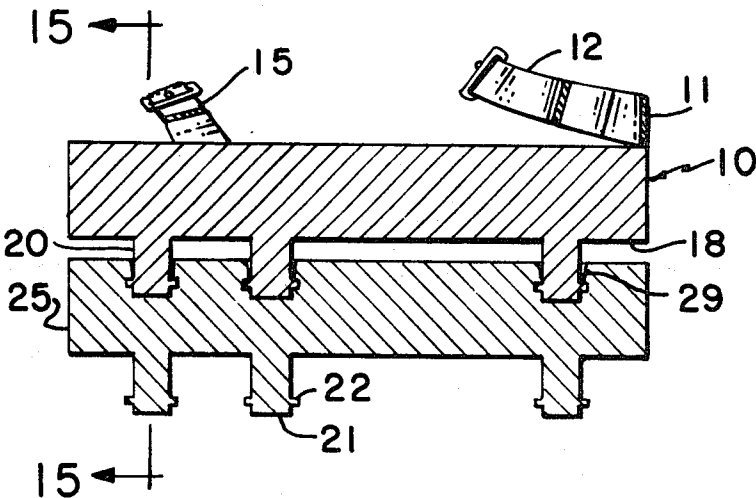
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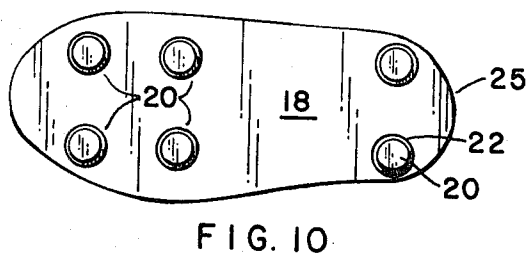
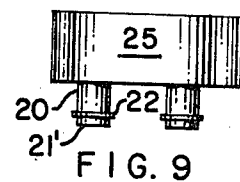
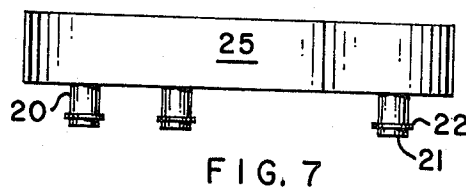
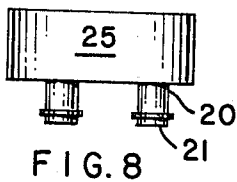
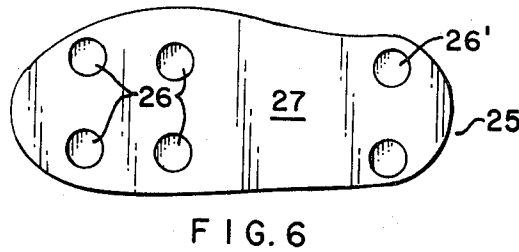
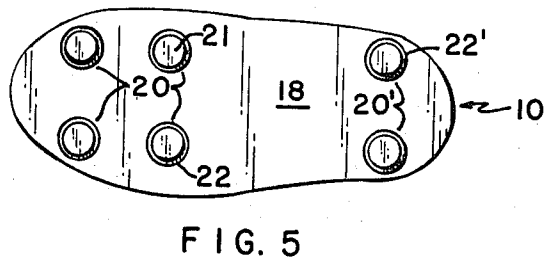
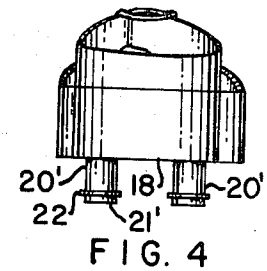
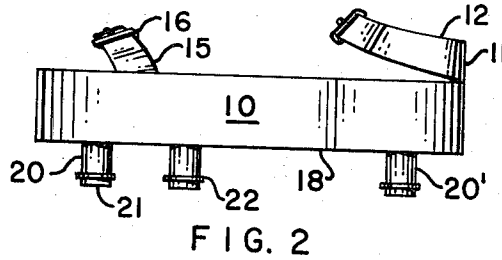
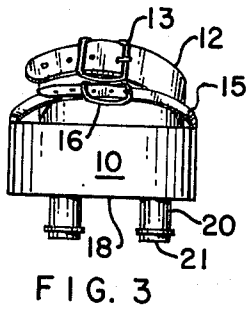
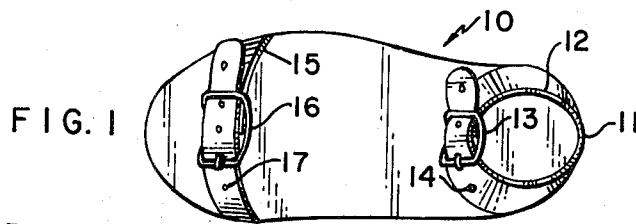
Primary Examiner—Richard A. Gaudet
Assistant Examiner—Ronald L. Frinks
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[57] **ABSTRACT**

A foot toy of controllable height comprises a foot-receiving sole element which has means, such as heel and toe straps, to confine or retain an inserted foot when the device is donned, and two or more spaced projections or pegs disposed on the lower surface of the sole element. An auxiliary sole-like element is provided with recesses in its upper surface to receive the above-mentioned projections or pegs in firm but detachable relationship, and also has pegs or projections on its lower surface, so that the toy can be built up to any desired height by addition of as many auxiliary units as desired. The sole element and the auxiliary element are slightly spaced from each other whereby the loading stress is borne by the pegs.

9 Claims, 18 Drawing Figures





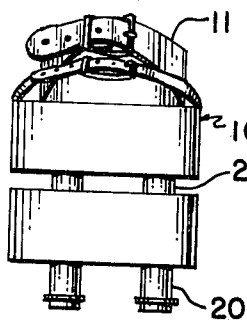


FIG. 12

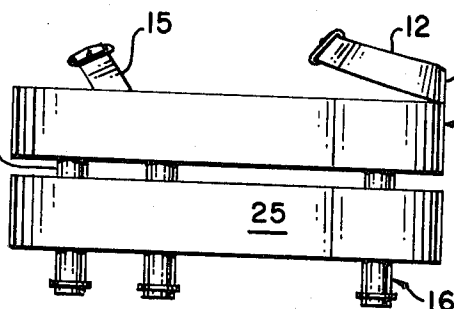


FIG. 11

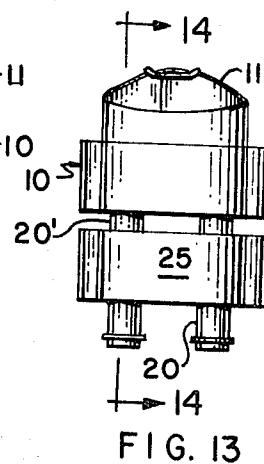


FIG. 13

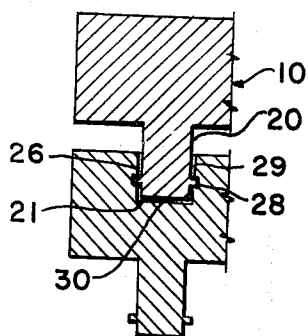


FIG. 15

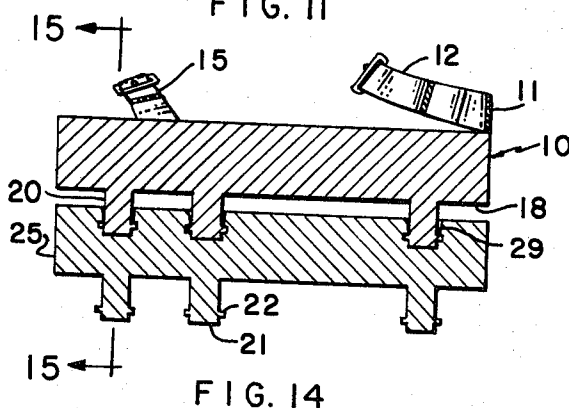


FIG. 14

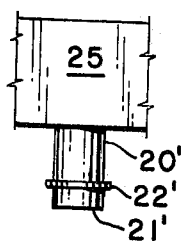


FIG. 16

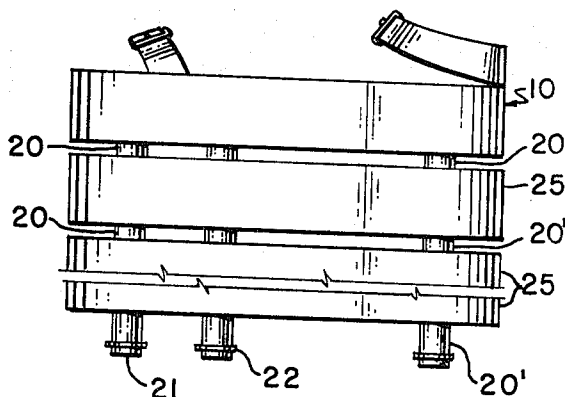


FIG. 17

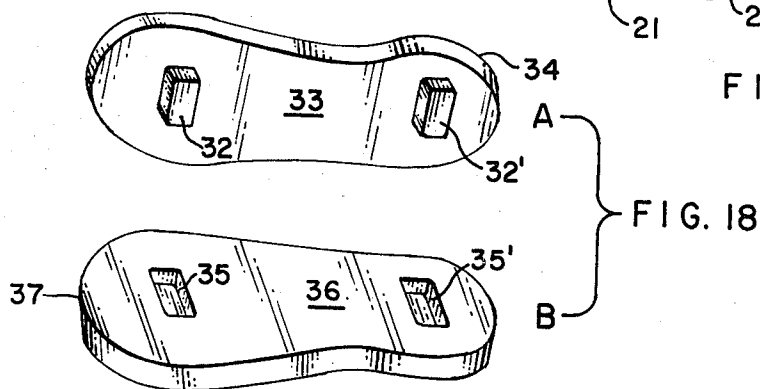


FIG. 18

FOOT TOY

SUMMARY OF THE INVENTION

This invention relates to a device or combination to be worn on the foot and which can be demountably built up or reduced in height and which is a toy and can be used for therapeutic purposes.

An object of the invention is to provide a means of pleasure for those who would use it. The device is designed as a toy to be worn upon the foot.

Further objects of this invention are to teach one coordination and balance achieved by building one unit upon another. It has the potential for therapeutic value to be used by the physically handicapped. It is designed to teach one a form of depth perception by being able to step upon each additional unit in order to achieve a taller position.

This invention has the potential of stimulating creative thinking, stimulating the mind into channels of fantasy while playing with this foot toy.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention and some modes of carrying it out will be explained and illustrated by the following specific description and by the annexed drawings, wherein:

FIG. 1 is a top plan view of a sole element of one embodiment of this invention, showing the shape of the sole with a heel and a toe strap;

FIG. 2 is a side elevation view of the device of FIG. 1, showing straps, and the projections from the lower surface that fit into recesses in the upper surface of an additional unit;

FIGS. 3 and 4 are, respectively, the front and rear elevational views of the device of FIG. 1;

FIG. 5 is the bottom plan view of the device of FIG. 1, showing the placement and shape of pegs or projections useful as connecting devices;

FIG. 6 is a top plan view of one embodiment of an auxiliary unit or sole-like element useful to connect with the device of FIG. 1, showing the positions of the recesses or openings on the top surface that will receive the pegs or projections on the lower surface of the device of FIG. 1;

FIG. 7 is a side elevation view of the auxiliary unit of FIG. 6 showing placement and shape of pegs extending from the lower surface thereof and useful as connecting means;

FIGS. 8 and 9 are, respectively, front and rear elevational views of the auxiliary unit of FIG. 6;

FIG. 10 is a bottom plan view of the auxiliary unit of FIG. 6, showing placement of extending pegs useful as connecting means;

FIG. 11 is a side elevational view showing a top or sole element fitted onto an auxiliary or sole-like element. It shows a clearance space between the two units which will serve to prevent stress on the sole span of the unit;

FIG. 12 is a front elevation view of the device of FIG. 11, showing a top unit and an auxiliary unit joined together but with the straps cut away;

FIG. 13 is a rear elevation view of the device of FIG. 11, also with the straps cut away;

FIG. 14 is a cross-section through the device of FIGS. 11 and 13, taken on line 14 — 14 of FIG. 13, showing how the units are joined;

FIG. 15 is a cross-section taken on line 15 — 15 of FIG. 14 showing cooperation of the extending peg and receiving opening or recess in the lower section;

FIG. 16 is an elevation view of a single extending peg on the lower surface of a unit, that will fit into a corresponding opening on the upper surface of an auxiliary unit; the view being taken from FIG. 11 as indicated by the arrow;

FIG. 17 is a side elevational view of a combination according to this invention showing a plurality of units joined together, there being no set limit upon the total number of units that may be used to achieve the purpose of the toy;

FIG. 18 is a revolved, exploded view of still another embodiment of the invention, in which Part A is a perspective or revolved underside plan view of the upper unit thereof showing the shape and placement of connecting extensions and Part B is a perspective or revolved upper surface plan view of an auxiliary cooperating unit showing shape and placement of recesses or openings that receive the extensions of Part A when the device is assembled.

DETAILED DESCRIPTION OF THE INVENTION

In the embodiment of this invention shown in FIGS. 1 through 16, there is provided a sole-like, foot-receiving element 10 which has a suitable heel piece 11, a two-part strap 12, affixed thereto or integral therewith, and a buckle 13 which serves the usual function of fastening through any of spaced holes 14 to help retain the element on the foot of the wearer. The sole 10 also is provided with a two-part toe strap 15 having a buckle 16 and spaced holes 17 to aid in the wearing of the toy. The straps and heel piece are conventional. The sole element is of suitable thickness. For instance, each sole or auxiliary element can be $\frac{3}{4}$ to 1- $\frac{1}{2}$ inch in thickness and is made of a suitable plastic, as available in commerce, which can be cast into the desired shape, with the necessary projections or pegs advantageously cast integrally with the sole. The device can alternatively be made of wood or other desired material but plastic is satisfactory and inexpensive, and several suitable plastics are known in the toy-making art, e.g., polycarbonate (available in commerce under the trademark Lexon), polyethylene or polypropylene, which can be formed into the desired shapes by casting or otherwise as known in the art.

At the lower surface 18 of sole element 10 are disposed in this embodiment a number of spaced pegs of which two, 20', 20', are disposed on a transverse line across the surface 18 at the heel portion and four, 20, 20, 20, 20, are spaced apart at the front portion of element 10. The pegs at each side are substantially equidistant from the generally longitudinal axis of the element and are spaced lengthwise at the front portion of element 10 to firmly support the toe and ball portion of an inserted foot. The outer faces 21, 21', of all pegs are equidistant from the flat lower surface 18 of element 10. To ensure locking or firm frictional contact with the wall of a receptive recess as will be described below, each peg is provided with an annular raised portion or bead 22, 22'.

An auxiliary sole element 25 is provided with recesses 26, 26', in its upper face or surface 27. Each recess 26, 26', is slightly larger than a cooperating peg 20, 20', and receives a peg 20, 20' and its bead 22, 22', which, as shown in FIGS. 14 and 15, fits or detachably locks

into a corresponding annular recess 28 in the side wall 29 of each recess 26, 26'. The outer face 21, 21' of peg 20, 20', abuts and bears upon lower face 30 of recess 26, 26', so that the loading resulting from wearing of the device is concentrated on the peg areas. The sole elements are slightly spaced from each other, e.g., at surfaces 18 and 27, so that stress is prevented on the span of the sole elements, pegs 20, 20' being longer than the depth of recesses 26, 26', the latter being of uniform depth, also. The pegs are in many instances advantageously of circular horizontal cross-section but other shapes can be used, if desired. Also, the pegs and recesses can have straight or vertical sides but these sides can taper inwardly toward the base of the recess. The recesses are suitably from about one-fourth to one-half of the depth of the sole.

In FIG. 17, there is shown a combination according to this invention including sole element 10 and an intermediate number of auxiliary sole-like elements 25. In this manner the toy can be built up as high as desired and again, by pulling away one or more auxiliary elements 25, reduced in height. The straps of top sole element 10 are like those of FIG. 11.

In FIG. 18, there is shown an exploded, revolved view of another embodiment of the invention having two projections 32 and 32' on the lower surface 33 of sole element 34, one across the front portion and one across the heel portion; and corresponding recesses 35, 35', respectively, in the upper surface 36 of auxiliary sole-like element 37. Retaining straps and heel piece on element 34 and lower projections on element 37 are not shown. Projections 32, 32' fit into recesses 35, 35' respectively, and are frictionally held there, upon assembly. In this embodiment, the projections are oblong in horizontal cross-section and extend transversely across surface 33 over a major portion of its width to provide good stability. Recesses 35, 35' are of corresponding placement, size and shape. Alternatively to a friction or locking type of fit, cooperating small magnets can be inserted in the outer face of each projection and the lower face of each recess.

The device can be worn by placing the foot in or on the top sole element, fastening the straps, then stepping onto an auxiliary element with proper placement of the pegs of the top sole element in the cooperating recesses of the upper surface of the auxiliary element, and standing on the device to force the pegs into locked position. The device can then be used for walking or stepping. Alternatively, of course, the desired number of units can be assembled by placing them similarly together and forcing the pegs into locked position, after which the device can be donned. Likewise, the heights can be reduced by pulling off the desired number of units while on or off the foot.

The above specific description and the drawings have been given for purposes of illustration only and variations and modifications can be made therein without departing from the spirit and scope of the appended claims.

Having now described the invention,

What is claimed is:

1. A foot toy of controllable height comprising in combination:

- a. a foot-receiving sole element having an upper surface and a projection-bearing lower surface,
- b. foot-securing means attached to said sole element,

c. a plurality of projections extending generally perpendicularly from said lower surface in spaced relation to each other,

d. at least one auxiliary sole-like element of substantially the same conformation as said foot-receiving element and having an upper surface and a lower surface and a plurality of spaced recesses in said second-mentioned upper surface,

e. said recesses conforming in contour and placement to said first-mentioned projections and engaging said projections in detachably fixed relationship,

f. said projections being deeper than said recesses whereby said foot-receiving element and said auxiliary sole element are maintained in spaced relationship.

2. A foot toy as in claim 1 wherein each said projection is provided with an annular bead portion.

3. A foot toy as in claim 1 wherein said sole elements are made of plastic.

4. A foot toy as in claim 1 wherein said first-mentioned lower surface is provided with a pair of transverse projections of generally oblong horizontal cross-section, one of said pair being disposed at the front portion and the other of said projections at the rear portion of said surface; and said second-mentioned upper surface is provided with two transverse recesses of generally oblong horizontal cross-section, one said recess being disposed at the front portion and the other said recess being disposed at the rear portion of said upper surface, said recesses receiving said oblong projections in frictional engagement.

5. A foot toy as in claim 1 wherein said projections are of circular horizontal cross-section.

6. A foot toy as in claim 5 wherein said first-mentioned lower surface is provided with four of said projections at the front portion and two of said projections at the rear portion of said surface.

7. A foot toy as in claim 1 wherein each said sole element and said projections thereon are of integrally cast plastic.

8. A foot toy as in claim 1 wherein each said auxiliary sole-like element is provided with a plurality of said projections.

9. A foot toy of controllable height comprising in combination:

a. a foot-receiving sole element having an upper surface and a projection-bearing lower surface, said lower surface having a front portion and a rear portion,

b. foot-securing means affixed to said upper surface,

c. four spaced projections extending from said front portion of said lower surface,

d. two spaced projections arranged transversely of and extending from said rear portion of said lower surface,

e. all of said projections extending perpendicularly an equal distance from said lower surface,

f. an auxiliary sole-like element having an upper surface and a lower surface having spaced recesses in said upper surface corresponding to and engaging said spaced projections in detachably fixed relationship, each said recess having a side wall,

g. said projections being deeper than said recesses whereby said lower surface of said foot-receiving element and said upper surface of said auxiliary element are maintained in spaced relationship,

h. an annular bead on each said projection,

i. each said recess having an annular recess in said side wall receiving said bead in detachably locking arrangement, and

j. a plurality of projections on said lower surface of said auxiliary sole element.

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