AN APPARATUS AND METHOD FOR THE PLACEMENT OF FOOTWEAR

FIELD OF INVENTION

The present invention relates to the field of storage/display of footwear, primarily in relation to an apparatus and a method used in the aforementioned field.

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BACKGROUND

In any typical home, there are usually problems associated with the storage of footwear for the various people living in the house. The aforementioned problems stem from issues such as, for example, number of footwear, differing sizes of footwear, differing types of footwear, accessibility of footwear, circulation of air in and around the footwear, and the like.

Existing shoe cabinets/drawers/racks are not ideal given that their structures/configurations are usually not variable and they are designed to fit typical shoe shapes and sizes. It is common that footwear which is either too large in length or too tall (for example, high-cut shoes, high heel shoes and so forth) have problems fitting into the shelves of existing shoe cabinets/drawers/racks. In addition, it is also difficult to increase the storage capacity of existing shoe cabinets/drawers/racks. Furthermore, existing shoe cabinets/drawers/racks are also designed primarily for storage of footwear, and not longevity of footwear. Circulation of air in existing shoe cabinets/drawers/racks is typically hampered and this correspondingly causes both mildew to form on shoe surfaces and problems in relation to the drying of shoe internals. This unfortunately leads to damage of the shoes. Most existing shoe cabinets/drawers/racks also shield the footwear being stored from view, and this leads to footwear being forgotten by their owners due to being out-of-sight from the owners. Finally, accessibility of the footwear is a problem for shoe cabinets/drawers/racks that are not within easy physical reach by the owners, for instance, when the racks/shelves are either too high or too low for the owners.

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As such, there is a need to address the aforementioned problems experienced by users of existing shoe cabinets/drawers/racks.

SUMMARY

In a first aspect, there is provided an apparatus for placement of footwear. The apparatus includes a plurality of compressible structures, where each of the compressible structures is mountable at various positions relative to each other; and a support structure for mounting the plurality of compressible structures. The support structure may be either a frame for mounting the plurality of compressible structures or a wall. The apparatus may be either part of a cabinet or a standalone structure.

The placement of footwear may be for either storage or display. The placement of footwear may also allow ease of both retrieval and viewing of the footwear.

The frame may be at least one elongated strip made from a load bearing material, the elongated strip being mountable on the wall.

It is preferable that each compressible structure is elongate in shape, and is able to withstand an application of a load along a length of each compressible structure without fracturing. At least one end of the compressible structures may include a cavity, with the cavity being for the placement of objects. Each compressible structure may be mountable in a secure yet removable manner, with the mounting being selected from, for example, a friction mount, a snap-fit mount, a securing mechanism and so forth. Each compressible structure may comprise a solid core and a compressible layer surrounding the solid core. It is preferable that the compressible layer is made from either rubber or a polymeric foam material and the solid core is made from a rigid material. Alternatively, each compressible structure may be made from either rubber or a polymeric foam material. Each compressible structure may have a variable length and a variable cross sectional shape. Each compressible structure may

be dis-assembled to vary at least one of an appearance and a cross sectional area of the compressible structure.

Movement of air in and around the footwear may advantageously be possible when the footwear is placed in the apparatus.

In a second aspect, there is provided a method for placement of footwear. The method includes mounting a plurality of compressible structures onto a support structure; and using the mounted plurality of compressible structures for the placement of footwear. The support structure may preferably be either a frame for mounting the plurality of compressible structures or a wall. The frame may be at least one elongated strip made from a load bearing material, the elongated strip being mountable on the wall. The placement of footwear may be for either storage or display. The placement of footwear advantageously allows ease of both retrieval and viewing of the footwear.

Each compressible structure may be elongate in shape, and is preferably able to withstand an application of a load along a length of each compressible structure without fracturing. At least one end of the compressible structure may include a cavity, the cavity being for the placement of objects. Each compressible structure may be mountable in a secure yet removable manner, the mounting being selected from, for example, a friction mount, a snap-fit mount, a securing mechanism and so forth. Each compressible structure may comprise a solid core and a compressible layer surrounding the solid core. The compressible layer may be made from either rubber or a polymeric foam material and the solid core may be made from a rigid material. Alternatively, each compressible structure may be made entirely from either rubber or a polymeric foam material. Each compressible structure may have a variable length and a variable cross sectional shape. Each compressible structure may also be dis-assembled to vary at least one of an appearance and a cross sectional area of the compressible structure.

Movement of air in and around the footwear may advantageously be possible when the footwear is placed in the apparatus.

DESCRIPTION OF DRAWINGS

In order that the present invention may be fully understood and readily put into practical effect, there shall now be described by way of non-limitative example only preferred embodiments of the present invention, the description being with reference to the accompanying illustrative drawings.

Figure 1 shows a perspective view of an apparatus of the present invention.

Figure 2 shows a perspective view of an alternative embodiment of the apparatus of the present invention.

Figure 3 shows examples of cross-sectional shapes of compressible structures used with the apparatus of the present invention.

Figure 4 shows a process flow of a method of the present invention.

Figure 5 shows examples of a frame used for the apparatus of the present invention.

Figure 6 shows a cross-sectional view of a multi-material compressible structure used with the apparatus of the present invention.

Figure 7 shows a perspective view of an alternative embodiment of a compressible structure used in the present invention.

DESCRIPTION OF PREFERRED EMBODIMENTS

In a first aspect of the present invention, there is provided an apparatus 20 for placement of footwear. The placement of footwear may be for either storage or display of the footwear. In addition, it will be apparent that the placement of footwear using the apparatus 20 allows ease of both retrieval and viewing of the footwear. Details of the apparatus 20 will be discussed in the following paragraphs, as will benefits and advantages brought forth from use of the apparatus 20. Referring to Figure 1 which shows a perspective view of the apparatus 20, the apparatus 20 includes a plurality of compressible structures 22. Only one compressible structure 22 is labeled in Figure 1, and it should be appreciated that all other compressible structures 22 are not labeled in Figure 1 to avoid cluttering an appearance of Figure 1. Figure 1 also shows a non-

limiting range of footwear usable with the apparatus 20, the range of footwear including sports shoes 10, work shoes 12, slippers 14, boots 16, and high heel shoes 18.

The compressible structure 22 may be made from a single material or more than one material. When the compressible structure 22 is made from a single material, the compressible structure 22 may be made from either rubber or a polymeric foam material. Referring to Figure 6 which shows a cross-sectional view of a multi-material compressible structure 22, each compressible structure 22 may comprise a solid core 60 and a compressible layer 62 surrounding the solid core 60. The rounded-rectangular cross-sectional shape of the compressible structure 22 shown in Figure 6 is merely illustrative and not limiting in any way. The solid core 60 is rigid and may be made from either a metal or a plastic, while the compressible layer 62 may be made from either rubber or a polymeric foam material. The compressible structure 22 should have a surface which has a coefficient of friction which would not scratch shoe surfaces upon contact, and also does not allow shoe surfaces to slide on the surface. The compressible aspect of the compressible structure 22 may also aid in gripping the footwear when the footwear is placed in the apparatus 20.

Each compressible structure 22 may be elongate in shape, and is able to withstand an application of a load along a length of each compressible structure 22 without fracturing. Each compressible structure 22 need not be of identical length and need not have an identical cross sectional shape. Referring to Figure 3 which shows non-limiting examples of cross sectional shapes of each compressible structure 22, it should be noted that the cross sectional shapes may include, for example rectangular (Figure 3(a)), circular (Figure 3(b)), elliptical (Figure 3(c)), rounded rectangular (Figure 3(d)), trapezoidal (Figure 3(e)), hexagonal (Figure 3(f)), and so forth. It should be noted that the compressible structures 22 of Figure 1 shows a squarish cross sectional shape. Referring to Figure 2 which shows a perspective view of an alternative embodiment of the compressible structure 22, the compressible structure 22 is shown to include a cavity 24 at a first end 26 of the compressible structure 22, the cavity 24 being for the placement of objects. In

Figure 2, the object being placed in the cavity 24 is a stiletto heel 104 of a high heel shoe 18. While both Figures 1 and 2 show the compressible structures 22 mounted in an orderly arrangement of straight rows and columns, it should be appreciated that each of the compressible structures 22 may be mountable at various positions relative to each other, and not necessarily in the orderly arrangement as shown in Figures 1 and 2.

Referring to Figure 7, there is shown an alternative embodiment of the compressible structure 22. Compressible structure 22A shows an assembled view while compressible structure 22B shows a dis-assembled view. It should be noted that each compressible structure 22 may be in a multi-part form with both part (a) and part (b) as shown in Figure 7. It should be appreciated that at least one of an appearance and a cross-sectional area of the compressible structure 22 may be varied by varying part (b) of the compressible structure 22. Furthermore, varying part (b) of the compressible structure 22 also aids in varying a size of a gap in-between surrounding compressible structures 22 in the apparatus 20, and this enables variation of the size of the gap without re-mounting a compressible structure(s) 22. Consequently, varying part (b) may also enable a better fit for the footwear placed on the apparatus 20. It should be noted that part (b) may be made from either rubber or a polymeric foam material while part (a) may be rigid and may be made from either a metal or a plastic when part (a) is rigid. The compressible structure 22 may be less rigid during instances when the compressible structure 22 is able to flex slightly to enable ease of placement and removal of the footwear from the apparatus 20. While a compressible structure 22 with a rectangular cross section is shown in Figure 7, it should be appreciated that the cross sectional shape need not be rectangular.

The apparatus 20 also includes a support structure 30 for mounting the plurality of compressible structures 22. The support structure 30 is required to provide a framework for the apparatus 20 such that the apparatus 20 is able to withstand loads from the placement of footwear. The support structure 30 is either a frame 40 (as shown in Figure 2) for mounting the plurality of compressible structures 22 or a wall 30 (as shown in Figure 1). The frame 40

may be at least one elongated strip made from a load bearing material, the elongated strip being mountable on any wall. The load bearing material may be made from either a metal or a plastic.

Each compressible structure 22 is mountable on either the frame 40 or the wall 30 in a secure yet removable manner. The mounting of each compressible structure 22 may be selected from, for example, a friction mount, a snap-fit mount, a securing mechanism and so forth. The securing mechanism used may be a screw. Referring to Figure 5(a), there is shown a first frame 80 with a plurality of circular mounting cavities 82 for mounting the compressible structures 22. Figure 5(b) shows an alternative, a second frame 90 which uses a securing mechanism like a screw to secure the compressible structures 22 to the second frame 90. It should be appreciated that the first frame 80 allows the compressible structures 22 to be mounted only at pre-determined positions on the first frame 80 whilst the second frame 90 allows the compressible structures 22 to be mounted at any position on the second frame 90. It should be noted that the frame 40 should be mounted on a wall using mechanisms which are able to withstand applications of heavy loads, such as, for example, industrial grade adhesives, industrial grade Velcro, screws and so forth.

Various ways of placing footwear in the apparatus 20 are shown in Figure 1. It should be noted that the footwear may be held in place by, for instance, friction/gripping provided by the compressible structures 22 (for example, sports shoes 10(a), work shoes 12, slippers 14), and resting of the footwear on the compressible structures 22 (for example, sports shoes 10(b), boots 16, high heel shoes 18). In addition, Figure 2 shows another way of placing the footwear in relation to how the stiletto heels 104 of the high heel shoes 18 are placed in the cavity 24 of the compressible structure 22.

It should be noted that the movement of air in and around the footwear is possible when the footwear is placed in the apparatus 20. This is advantageous as internals of the footwear can be dried and mildew is less likely to form on the surfaces of the footwear. In addition, it should be noted

that all the footwear placed in the apparatus 20 is clearly visible and allows easy access, which is beneficial to a user of the apparatus 20. Furthermore, the apparatus 20 allows the placement of footwear regardless of shape, form and size. The different types of footwear which is able to be placed in the apparatus 20 is clearly advantageous to the user. Finally, it should be appreciated that the plurality of compressible structures 22 may be positioned by the user in a manner which optimizes a number of footwear which can be placed in the apparatus 20.

The apparatus 20 may be a part of a cabinet or it may be a standalone structure. When the apparatus 20 is a standalone structure, it may also be located within a cabinet. Movement of air in and around the footwear when the footwear is placed in the apparatus 20 when the apparatus 20 is either part of or located within the cabinet may depend on whether the cabinet includes ventilation holes/systems.

In a second aspect of the present invention as shown in Figure 4, there is provided a method 150 for placement of footwear. The placement of footwear may be for either storage or display of the footwear. In addition, it will be apparent that the placement of footwear using the method 150 allows ease of both retrieval and viewing of the footwear. The footwear includes, for example, sports shoes, work shoes, slippers, boots, high heel shoes and so forth. Details of the method 150 will be discussed in the following paragraphs, as will benefits and advantages brought forth from use of the method 150. It should be noted that references will also be made to features shown in Figures 1 and 2 when describing the method 150.

The method 150 includes mounting a plurality of compressible structures 22 onto a support structure 30/40 (152). Then, the mounted plurality of compressible structures 22 are used for the placement of footwear (154). The compressible structures 22 are identical to those described earlier in relation to the apparatus 20. Similarly, the support structure 30/40 is identical to those described earlier in relation to the apparatus 20.

The compressible structure 22 may be made from a single material or more than one material. When the compressible structure 22 is made from a single material, the compressible structure 22 may be made from either rubber or a polymeric foam material. Referring to Figure 6 which shows a cross-sectional view of a multi-material compressible structure 22, each compressible structure 22 may comprise a solid core 60 and a compressible layer 62 surrounding the solid core 60. The rounded-rectangular cross-sectional shape of the compressible structure 22 shown in Figure 6 is merely illustrative and not limiting in any way. The solid core 60 is rigid and may be made from either a metal or a plastic, while the compressible layer 62 may be made from either rubber or a polymeric foam material. The compressible structure 22 should have a surface which has a coefficient of friction which would not scratch shoe surfaces upon contact, and also does not allow shoe surfaces to slide on the surface. The compressible aspect of the compressible structure 22 may also aid in gripping the footwear when the footwear is placed in the apparatus 20.

Each compressible structure 22 may be elongate in shape, and is able to withstand an application of a load along a length of each compressible structure 22 without fracturing. Each compressible structure 22 need not be of identical length and need not have an identical cross sectional shape. Referring to Figure 3 which shows non-limiting examples of cross sectional shapes of each compressible structure 22, it should be noted that the cross sectional shapes may include, for example rectangular (Figure 3(a)), circular (Figure 3(b)), elliptical (Figure 3(c)), rounded rectangular (Figure 3(d)), trapezoidal (Figure 3(e)), hexagonal (Figure 3(f)), and so forth. It should be noted that the compressible structures 22 of Figure 1 shows a squarish cross sectional shape. Referring to Figure 2 which shows a perspective view of an alternative embodiment of the compressible structure 22, the compressible structure 22 is shown to include a cavity 24 at a first end 26 of the compressible structure 22, the cavity 24 being for the placement of objects. In Figure 2, the object being placed in the cavity 24 is a stiletto heel 104 of a high heel shoe 18. While both Figures 1 and 2 show the compressible structures 22 mounted in an orderly arrangement of straight rows and columns, it should be appreciated that each of the compressible structures 22

may be mountable at various positions relative to each other, and not necessarily in the orderly arrangement as shown in Figures 1 and 2.

Referring to Figure 7, there is shown an alternative embodiment of the compressible structure 22. Compressible structure 22A shows an assembled view while compressible structure 22B shows a dis-assembled view. It should be noted that each compressible structure 22 may be in a multi-part form with both part (a) and part (b) as shown in Figure 7. It should be appreciated that at least one of an appearance and a cross-sectional area of the compressible structure 22 may be varied by varying part (b) of the compressible structure 22. Furthermore, varying part (b) of the compressible structure 22 also aids in varying a size of a gap in-between surrounding compressible structures 22 in the apparatus 20, and this enables variation of the size of the gap without re-mounting a compressible structure(s) 22. Consequently, varying part (b) may also enable a better fit for the footwear placed on the apparatus 20. It should be noted that part (b) may be made from either rubber or a polymeric foam material while part (a) may be rigid and may be made from either a metal or a plastic when part (a) is rigid. The compressible structure 22 may be less rigid during instances when the compressible structure 22 is able to flex slightly to enable ease of placement and removal of the footwear from the apparatus 20. While a compressible structure 22 with a rectangular cross section is shown in Figure 7, it should be appreciated that the cross sectional shape need not be rectangular.

The support structure 30 is required to provide a framework such that the method 150 is usable in a manner which is able to withstand loads from the placement of footwear. The support structure 30 is either a frame 40 (as shown in Figure 2) for mounting the plurality of compressible structures 22 or a wall 30 (as shown in Figure 1). The frame 40 may be at least one elongated strip made from a load bearing material, the elongated strip being mountable on any wall. The load bearing material may be made from either a metal or a plastic.

Each compressible structure 22 is mountable on either the frame 40 or the wall 30 in a secure yet removable manner. The mounting of each compressible structure 22 may be selected from, for example, a friction mount, a snap-fit mount, a securing mechanism and so forth. The securing mechanism used may be a screw. Referring to Figure 5(a), there is shown a first frame 80 with a plurality of circular mounting cavities 82 for mounting the compressible structures 22. Figure 5(b) shows an alternative, a second frame 90 which uses a securing mechanism like a screw to secure the compressible structures 22 to the second frame 90. It should be appreciated that the first frame 80 allows the compressible structures 22 to be mounted only at pre-determined positions on the first frame 80 whilst the second frame 90 allows the compressible structures 22 to be mounted at any position on the second frame 90. It should be noted that the frame 40 should be mounted on a wall using mechanisms which are able to withstand applications of heavy loads, such as, for example, industrial grade adhesives, industrial grade Velcro, screws and so forth.

Various ways of placing footwear when using the method 150 are shown in Figure 1. It should be noted that the footwear may be held in place by, for instance, friction/gripping provided by the compressible structures 22 (for example, sports shoes 10(a), work shoes 12, slippers 14), and resting of the footwear on the compressible structures 22 (for example, sports shoes 10(b), boots 16, high heel shoes 18). In addition, Figure 2 shows another way of placing the footwear in relation to how the stiletto heels 104 of the high heel shoes 18 are placed in the cavity 24 of the compressible structure 22.

It should be noted that the movement of air in and around the footwear is possible when the method 150 is employed. This is advantageous as internals of the footwear can be dried and mildew is less likely to form on the surfaces of the footwear. In addition, it should be noted that when the method 150 is employed, all the footwear is clearly visible and allows easy access, which is beneficial to a user. Furthermore, the method 150 also allows the placement of footwear regardless of shape, form and size. This is clearly advantageous to the user. Finally, it should be appreciated that the plurality of compressible

structures 22 may be positioned by the user in a manner which optimizes a number of footwear when employing the method 150.

It should be appreciated that the method 150 may be employed regardless of whether the apparatus 20 is a part of a cabinet or a standalone structure. Movement of air in and around the footwear when the footwear is placed in the apparatus 20 when the apparatus 20 is either part of or located within the cabinet may depend on whether the cabinet includes ventilation holes/systems.

Whilst there has been described in the foregoing description preferred embodiments of the present invention, it will be understood by those skilled in the technology concerned that many variations or modifications in details of design or construction may be made without departing from the present invention.

CLAIMS

1. An apparatus for placement of footwear, the apparatus including:

a plurality of compressible structures, where each of the compressible structures is mountable at various positions relative to each other; and

a support structure for mounting the plurality of compressible structures,

wherein the support structure is either a frame for mounting the plurality of compressible structures or a wall.

2. The apparatus of claim 1, wherein the placement of footwear is for either storage or display.

3. The apparatus of claim 1, wherein the placement of footwear allows ease of both retrieval and viewing of the footwear.

4. The apparatus of claim 1, wherein the frame is at least one elongated strip made from a load bearing material, the elongated strip being mountable on the wall.

5. The apparatus of claim 1, wherein each compressible structure is elongate in shape, and is able to withstand an application of a load along a length of each compressible structure without fracturing.

6. The apparatus of claim 5, wherein at least one end of the compressible structure includes a cavity, the cavity being for the placement of objects.

7. The apparatus of claim 1, wherein each compressible structure is mountable in a secure yet removable manner, the mounting being selected from a group comprising: a friction mount, a snap-fit mount and a securing mechanism.

8. The apparatus of claim 1, wherein each compressible structure comprises a solid core and a compressible layer surrounding the solid core.

9. The apparatus of claim 8, wherein the compressible layer is made from either rubber or a polymeric foam material and the solid core is made from a rigid material.

10. The apparatus of claim 1, wherein each compressible structure is made from either rubber or a polymeric foam material.

11. The apparatus of claim 1, wherein each compressible structure has a variable length and a variable cross sectional shape.

12. The apparatus of claim 1, wherein movement of air in and around the footwear is possible when the footwear is placed in the apparatus.

13. The apparatus of claim 1, wherein the apparatus is either part of a cabinet or a standalone structure.

14. The apparatus of claim 1, wherein each compressible structure can be dis-assembled to vary at least one of: an appearance, and a cross sectional area of the compressible structure.

15. A method for placement of footwear, the method including:

mounting a plurality of compressible structures onto a support structure; and

using the mounted plurality of compressible structures for the placement of footwear,

wherein the support structure is either a frame for mounting the plurality of compressible structures or a wall.

16. The method of claim 15, wherein the frame is at least one elongated strip made from a load bearing material, the elongated strip being mountable on the wall.

17. The method of claim 15, wherein the placement of footwear is for either storage or display.

18. The method of claim 15, wherein the placement of footwear allows ease of both retrieval and viewing of the footwear.

19. The method of claim 15, wherein each compressible structure is elongate in shape, and is able to withstand an application of a load along a length of each compressible structure without fracturing.

20. The method of claim 19, wherein at least one end of the compressible structure includes a cavity, the cavity being for the placement of objects.

21. The method of claim 15, wherein each compressible structure is mountable in a secure yet removable manner, the mounting being selected from a group comprising: a friction mount, a snap-fit mount and a securing mechanism.

22. The method of claim 15, wherein each compressible structure comprises a solid core and a compressible layer surrounding the solid core.

23. The method of claim 22, wherein the compressible layer is made from either rubber or a polymeric foam material and the solid core is made from a rigid material.

24. The method of claim 15, wherein each compressible structure is made from either rubber or a polymeric foam material.

25. The method of claim 15, wherein each compressible structure has a variable length and a variable cross sectional shape.

26. The method of claim 15, wherein movement of air in and around the footwear is possible when the footwear is mounted.

27. The method of claim 15, wherein each compressible structure can be dis-assembled to vary at least one of: an appearance, and a cross sectional area of the compressible structure.