US 20170224113A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2017/0224113 A1**

HEEGE (43) **Pub. Date: Aug. 10, 2017**

(54) **STABILIZING DEVICE**

(71) Applicant: **Thomas Winn HEEGE**, Marietta, GA (US)

(72) Inventor: **Thomas Winn HEEGE**, Marietta, GA (US)

(21) Appl. No.: **15/426,458**

(22) Filed: **Feb. 7, 2017**

Related U.S. Application Data

(63) Continuation of application No. 62/292,342, filed on Feb. 7, 2016.

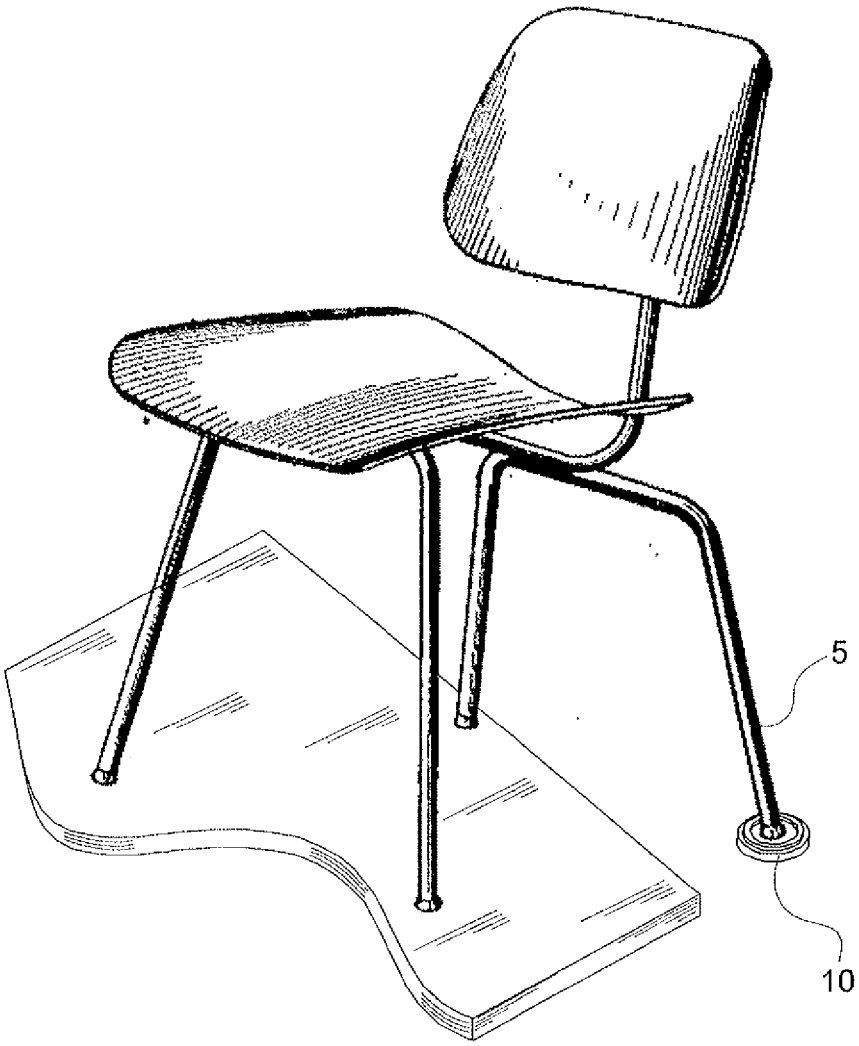
Publication Classification

(51) **Int. Cl.**
A47B 91/12 (2006.01)
A47B 91/06 (2006.01)

(52) **U.S. Cl.**
CPC ***A47B 91/12*** (2013.01); ***A47B 91/06*** (2013.01); *A47B 2091/063* (2013.01)

(57) **ABSTRACT**

A stabilizing device having a first side having a concentric raised wall disposed adjacent to a perimeter. A second side has a concentric recess disposed adjacent to the perimeter. The stabilizing device has a cylindrical boundary wall at the perimeter connecting the first side to the second side. The stabilizing devices are stackable such that when a second stabilizing device is stacked on top of a first stabilizing device, the concentric raised wall disposed on the first side fits snugly into the concentric recess disposed on the second side of the second stabilizing device.



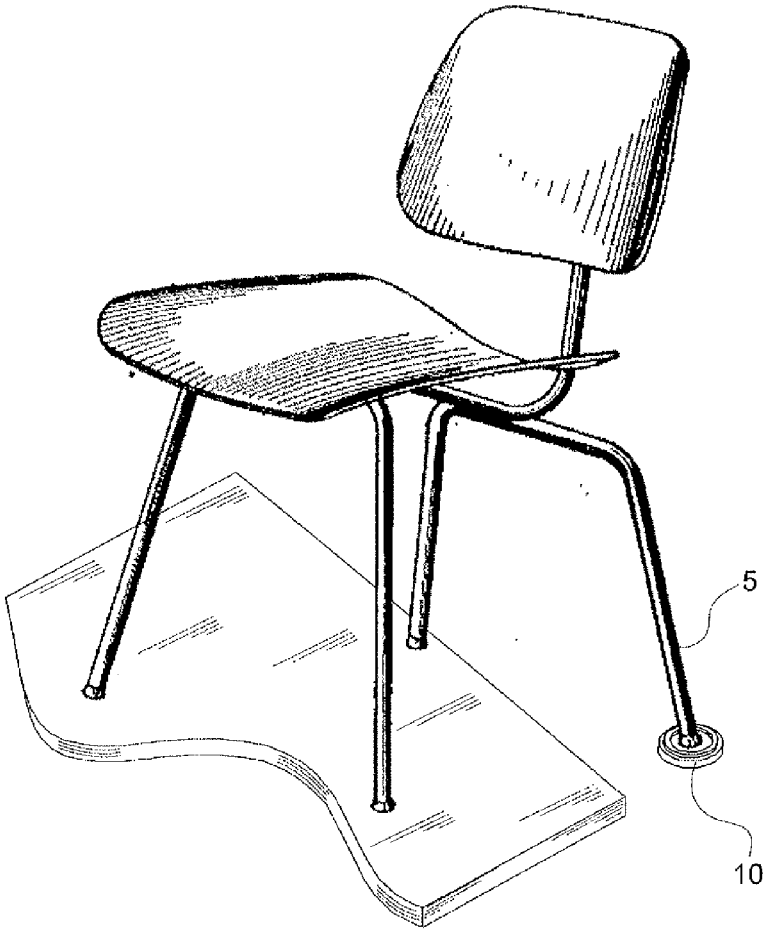


FIG. 1

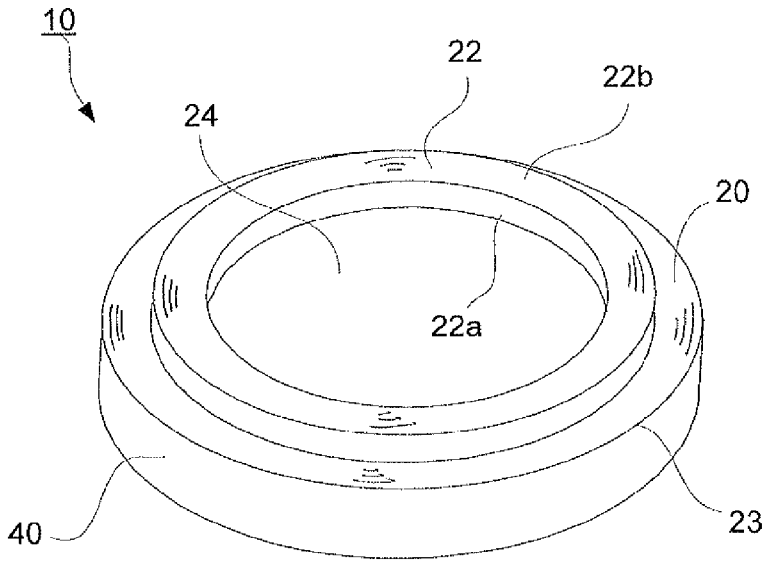


FIG. 2

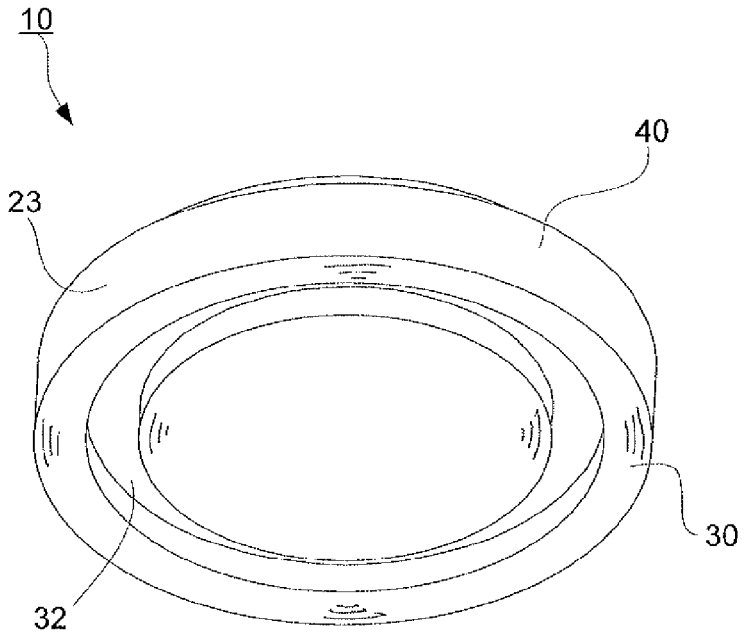


FIG. 3

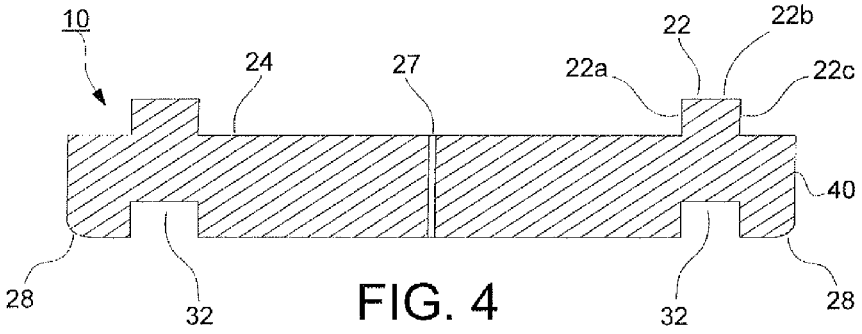


FIG. 4

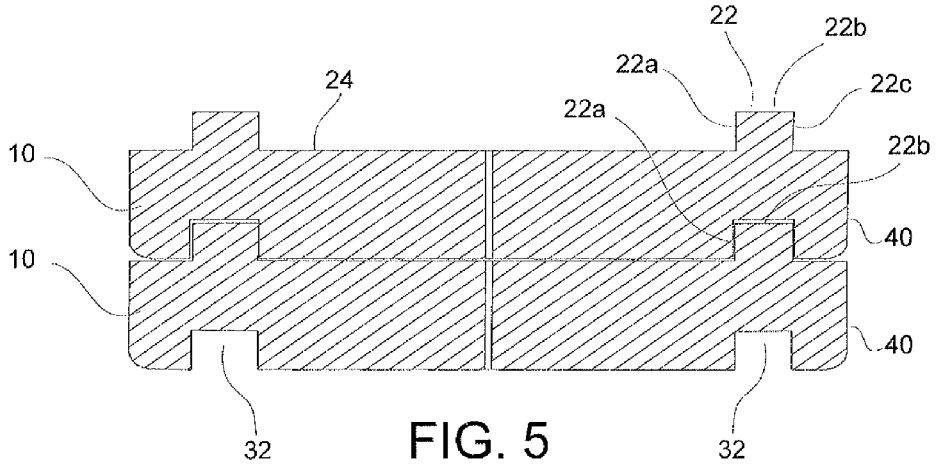


FIG. 5

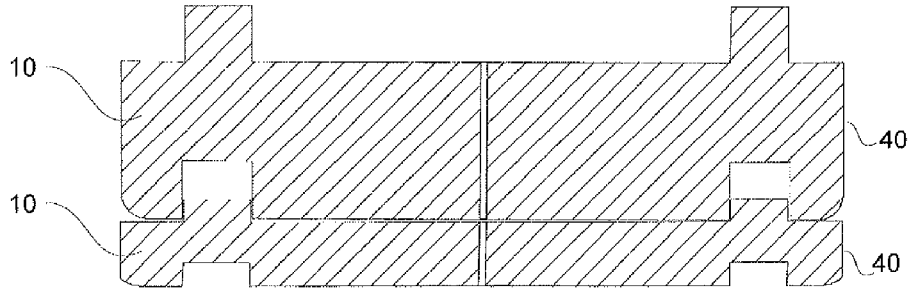


FIG. 6

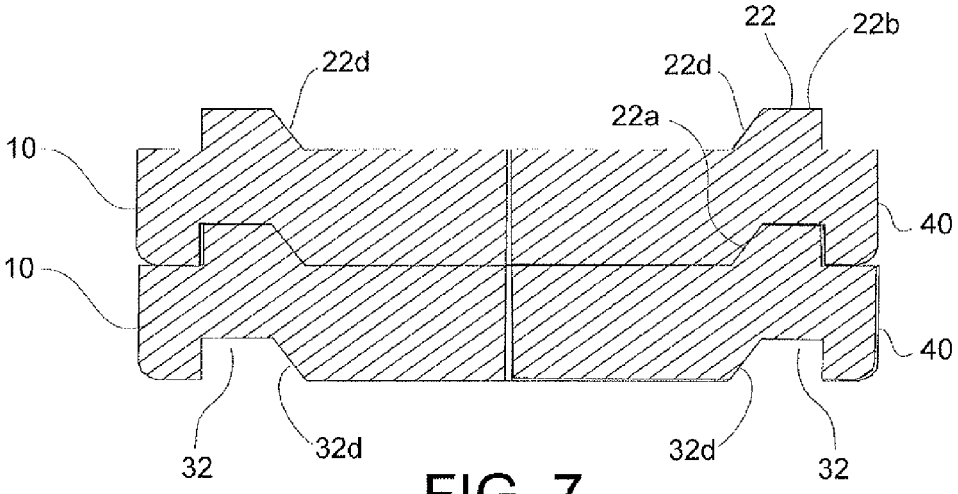

22
22b
22d
22d
22a
10
10
40
40
32
32d
32d
32

FIG. 7

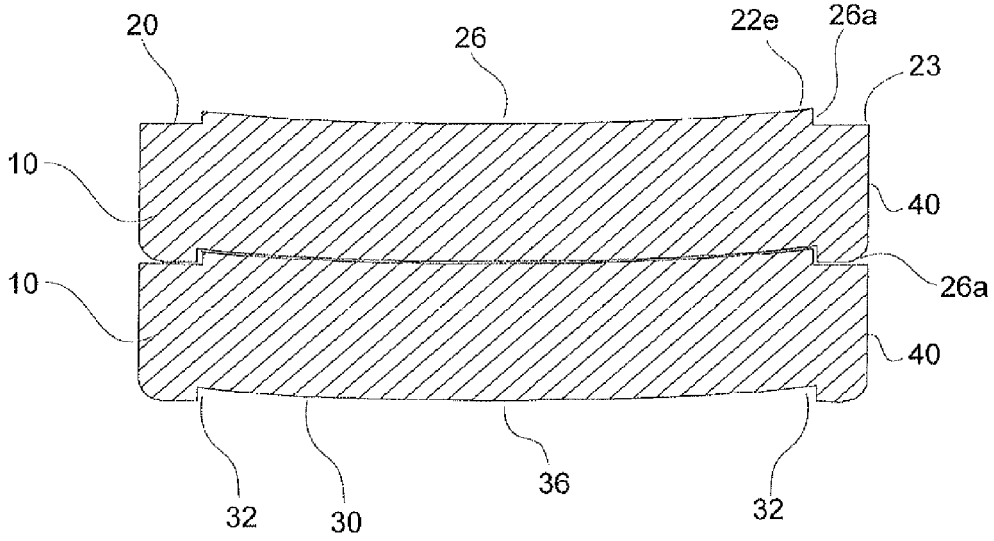

20
26
22e
26a
23
10
10
40
26a
40
32
30
36
32

FIG. 8

STABILIZING DEVICE

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to U.S. Provisional Patent Application Ser. No. 62/292,342, filed Feb. 7, 2016; the contents of which are hereby incorporated by reference herein in their entirety into this disclosure.

TECHNICAL FIELD

[0002] The subject disclosure relates generally to a leveling and stabilizing device for furniture supports and the like, and more particularly to a stabilizing device for a foot member or furniture legs or supports.

BACKGROUND

[0003] Flexible vacuum cups and suction cups are well known and in use for attaching the suction cup to an object.

[0004] It is often observed that there are instances when a table or chair does not securely sit on the floor or ground in which it is located. This could be due to the fact that the floor or ground is not completely level or has slight height variations in the surface causing one or more of the legs of the table to rest uneven on the surface of the floor or ground. This unevenness oftentimes creates a gap between the bottom of the leg and the floor or ground. This gap can also be caused when the legs of the table or chair are not of equal length, despite the floor or ground being free of slight variations. Oftentimes both of these conditions exist, i.e., the table or chair legs are not of equal length and the floor or ground surface has slight height variations. This is most common when visiting a restaurant, particularly outdoor patios. It has been often observed at outdoor patio restaurants that the serving tables will rock or be unstable because the floor or ground is uneven or the table legs are not of equal length.

[0005] Currently there are a number of solutions that have been attempted to put a device under a table or chair leg that is not securely positioned on the ground or floor. Some of these solutions include using pieces of paper, napkins, sugar packets and/or utensils under the legs. Unfortunately, these attempts are not durable solution and quickly become undone when the table is moved ever so slightly with its intended use.

[0006] Another conventional solution has been to use a hard piece of material, such as wood or metal as a shim. Unfortunately, this solution is also insufficient, since again any movement in the table will cause the shim device to shift and no longer provide a secure footing for the leg of the table or chair. Hard materials do not mold or adjust to the variety of gaps that cause unstable table and chair annoyances. These gaps are continually different as tables and chairs are continually repositioned in different areas of the floor or ground.

[0007] There is a longstanding need for an innovative solution that can quickly and easily stabilize an un-level, rocking table or chair that would automatically change its form to properly fill out the gap created between the un-level table or chair leg and the ground that the table or chair stands on. Likewise, it is also desirable to have a solution that is durable and can sustain repeated movement and use under the leg of an item of furniture.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Various exemplary embodiments of this disclosure will be described in detail, wherein like reference numerals refer to identical or similar components or steps, with reference to the following figures, wherein:

[0009] FIG. **1** is an exemplary view of a stabilizing device used under a leg of an item of furniture according to the subject disclosure.

[0010] FIGS. **2-3** are top and bottom perspective views of the stabilizing device.

[0011] FIG. **4** is a cross section view of the stabilizing device.

[0012] FIG. **5** is a cross section view of a first and second stabilizing devices stacked on top of each other.

[0013] FIG. **6** is a cross section view of a first stabilizing device of a first height and a second stabilizing device of a second height stacked on top of each other.

[0014] FIG. **7** is a cross section view of another pair of stacked stabilizing device according to this subject disclosure.

[0015] FIG. **8** is a cross section view of another pair of stabilizing devices stacked on top of each other.

DETAILED DESCRIPTION

[0016] Particular embodiments of the present subject disclosure will now be described in greater detail with reference to the figures.

[0017] FIG. **1** illustrates a stabilizing device **10** provided on the lower end of a leg **5** of a chair that would otherwise be lob-sided. The stabilizing device **10** is adapted for use as a floor-engaging element or foot member which may be provided on a supporting portion such as a leg of furniture or the like. The stabilizing device **10** is easy to use, durable, automatically self-molding and self-leveling for non-level tables, chairs, furniture and other units having legs or the like in both private residences and commercial businesses.

[0018] In the illustrated structure, the stabilizing device **10** is presented for use on the lower end of a leg **5** of a chair. The stabilizing device **10** may be constructed relatively simple, reliable and inexpensive. The stabilizing device **10** has broad applications and may be provided for leveling and stabilizing under a table leg, chair leg, or similar related product that requires slight adjustment to create a solid connection to the floor. The stabilizing device **10** has universal application, other than furniture (e.g. table, chair, cabinet, shelf, couch) or appliance (e.g. washer, dryer, etc.), the subject disclosure may be applied to any object (e.g. table lamp, printer, etc.) that needs balance on any surface.

[0019] FIGS. **2-3** show perspective views of an exemplary stabilizing device **10**. FIG. **4** shows a cross section view of the stabilizing device **10**. Although a variety of different shapes may be used, the stabilizing device **10** is cylindrical in shape and includes a first face or side **20** and a second face or side **30** bounded by a concentric side wall **40**.

[0020] The first side **20** has a raised ring **22** that is disposed adjacent to an outer peripheral edge **23** of the first side **20**. The raised ring **22** may be constructed in a variety of different shapes and sizes. The raised ring **22** is adapted to secure a leg **5** of a piece of furniture or an item having legs used as a base.

[0021] FIGS. **3-5** show the second side **30** including a concentric recess **32** that is disposed adjacent to an outer peripheral edge **23** of the second side **30**. The concentric

recess **32** may be constructed in a variety of different shapes and sizes. The concentric recess **32** of a first stabilizing device **10** is adapted to snugly receive a raised ring **22**.

[0022] As shown in FIG. **5**, the raised ring **22** from a second stabilizing device **10** may be stacked on top of the first stabilizing device **10**. It is to be understood that the stabilizing device **10** can be shaped into various sizes and shapes, such as but not limited to a circle, square, an obtuse shape or other suitable shape according to this subject disclosure.

[0023] FIG. **6** shows that the height of the concentric side wall **40** may be constructed at various predetermined heights in order to shore up or level furniture legs **5** at a desired height. One or more stabilizing devices **10** may be adjustably stacked on top of each other to obtain the desired height. Likewise, the various stabilizing devices **10** may be of different heights. For example, if the desired height to be lifted is a one inch, two stabilizing devices **10** at ½ inch may be stacked on top of each other to elevate a leg one inch. Alternatively, a ½-inch height first stabilizing device **10** and a second ¼-inch height stabilizing device **10** can be stacked on top of each other to obtain a ¾ inch height such as illustrated in FIG. **6**. As such, it is to be understood that various stabilizing devices **10** of different heights can be stacked to obtain a desired height.

[0024] The stabilizing device **10** is preferably molded or otherwise suitably formed of material capable of withstanding a great deal of stress without failure. Likewise, the stabilizing device **10** is abrasion resistant, has a long life, without little to no age hardening. The stabilizing device **10** may be molded from a synthetic resin, such as for example, polyethylene, since polyethylene is a low pressure, high density material. Other materials such as rubber or flexible plastics, such as nylon, may be used. The stabilizing device **10** is made of a material that is durable, albeit flexible and soft and capable of supporting the weight of substantially heavy furniture.

[0025] The stabilizing device **10** may have different sizes, hardness/softness characteristics, shapes, colors and widths (including widths that may be tapered or irregular) to fit various uses to solve the problem of gaps between table or chair legs and the floor or ground. The stabilizing device **10** is self-adjusting to automatically fill the gap or crevice and mold to the area between a table or chair leg and the ground or floor. Furthermore, the stabilizing device **10** continuously adjusts to the movement of the leg **5** of the furniture item while the leg **5** of the table or chair is against the ground or floor to maintain a secure footing.

[0026] The materials of construction for the stabilizing device **10** may also be made of a rubber. The preferred hardness of rubber is determined by an international standard for measuring hardness, called the Durometer. Within the Durometer various scales may be used depending upon the material type. The scales are defined by the word "Shore", followed by a letter to classify the material. Generally, a low number means that the material is soft, whereas higher numbers mean the material is hard. Various Durometers at different Shore scale may be suitable used with this subject disclosure.

[0027] Likewise, the stabilizing device **10** is substantially pliable to allow offset legs **5** to slightly sink into the stabilizing device **10** to balance an uneven leg from various other legs, which may be positioned slightly higher or longer. The material of the stabilizing device **10** is also suitable for providing a gripping action against the surface onto which it is lying on top of. A peelable release paper may also be provided on the first side **20** or second side **30** of the stabilizing device **10**, under which an adhesive may be provided to assist in the gripping action.

[0028] As shown in FIGS. **2-6**, the raised ring **22** may be dimensioned to be adapted to receive various different sized legs. Within the raised ring **22**, a recess or socket **24** is formed that is adapted to receive the leg **5** within the socket **24**. As shown in FIGS. **2-5**, the socket **24** may have a 90-degree angle between the inner surface **22***a* of the ring **22** and an upper surface **22***b* of the ring **22** and an outer surface **22***c* of the ring **22**.

[0029] FIG. **4** shows a small aperture **27** may be provided in the stabilizing device **10** to allow air to escape from the socket or recess **24** when the leg **5** member of a piece of furniture is being placed on top of the stabilizing device **10** to allow any residual air trapped to escape and allow the leg **5** to seat securely on top of the stabilizing device **10**. The aperture **27** may be provided through the stabilizing device **10** at any suitable location where venting may occur.

[0030] FIG. **4** also depicts a slope or rounded edge **28** at the outer periphery **23** of the second side **30** adjacent to the concentric side wall **40**. The rounded edge **28** may be constructed to slope upwardly, instead of having a hard flat angle. The advantage of incorporating the rounded edge **28** around the peripheral edge **23** is to provide a slight inclined edge to facilitate movement of the stabilizer device under the legs **5** of furniture to slide up and over slight imperfections or upward projections in the floor or supporting surface.

[0031] FIG. **7** depicts an alternative construction for the stabilizing device **10**. As shown, the relationship between the slanted or inner angular shape wall **22***d* and the upper surface **22***b* may have an angled shape. The angular shape wall **22***d* will account for receipt of varying sizes of the legs **5**. The slope of the angular shape wall **22***d* will direct the leg **5** of the furniture item to the center of the stabilizing device **10** creating a stable footing. The concentric recess **32** on the second side **30** of the stabilizing device **10** is also constructed to include a second angular shape wall **32***d* to mate with the angular shape wall **22***d* of the angular shape wall **22***d* of the raised ring **22**.

[0032] FIG. **8** shows yet another alternative construction to having a ring adjacent to the peripheral boundary of the stabilizing device **10**. As shown, the upper first side **20** of the stabilizing device **10** may have a bowl shaped or spherical concave contour **26** adapted to receive therein a leg **5** of an item of furniture. The spherical concave contour **26** extends to an edge **22***e* near the peripheral edge **23** adjacent to the concentric side wall **40**. A step **26***a* is provided between an edge **22***e* of the spherical concave contour **26** and the peripheral edge **23**. The step **26***a* mates with the lower edge of the second face **30** of another stabilizing device over which it may be stacked as shown in FIG. **8**.

[0033] Likewise, the second side **30** can be a contoured surface **36** adapted to mate with the bowl-shaped or spherical concave contour **26** of the first side **20**. In this manner, secure stacking is also possible amongst various stabilizing devices **10** as shown in FIG. **8**.

[0034] While the stabilizing device **10** is shown to be substantially cylindrical, it is to be understood that the stabilizing device **10** may be of any suitable geometric shape

or the like adapted to correspond to the leg **5** of a piece of furniture according to this subject disclosure.

[0035] In assembly, a leg **5** of a piece of furniture is positioned over and in axial alignment with the recess **24**. The leg **5** member is then placed on top of the recess **24**. The weight of the furniture item will sink into the resilient material of the stabilizing device **10** until the leg is leveled out with the other corresponding legs on the furniture item. The raised ring **22** will firmly secure the leg **5** within the stabilizing device **10**.

[0036] The load from the leg and the furniture item is distributed over the recess **24**. The stabilizing device **10** is not subject to corrosion, is wear-resistant, capable of withstanding great stress, and will have long life without danger of marring or damaging a floor or other supporting surface upon which it is situated.

[0037] It is to be understood that the stabilizing device **10** is not to be limited to the specific form or arrangement of parts herein described and shown except insofar as such limitations are included in the claim.

[0038] The illustrations and examples provided herein are for explanatory purposes and are not intended to limit the scope of the appended claims. It will be recognized by those skilled in the art that changes or modifications may be made to the above described embodiment without departing from the broad inventive concepts of the invention. It is understood therefore that the invention is not limited to the particular embodiment which is described, but is intended to cover all modifications and changes within the scope and spirit of the invention.

What is claimed:

1. A stabilizing device comprising:
- a first side having a raised wall disposed adjacent to a perimeter;
- a second side having a recess disposed adjacent to the perimeter; and
- a boundary wall at the perimeter connecting the first side to the second side.

2. The stabilizing device recited in claim **1**, wherein the raised wall is adapted to secure an item therein.

3. The stabilizing device recited in claim **1**, wherein the perimeter of the stabilizing device is cylindrical, and the raised wall and the recess has curved surfaces.

4. The stabilizing device recited in claim **1**, wherein a second stabilizing device can be stacked on top of the stabilizing device such that the raised wall on the stabilizing device is adapted to securely receive a second recess on the second stabilizing device that is stacked on top of the stabilizing device.

5. The stabilizing device recited in claim **4**, wherein the raised wall disposed on the first side fits into the recess disposed on the second side.

6. The stabilizing device recited in claim **1**, wherein the raised wall has an inwardly slanted wall, and the recess has a slanted wall that mates with the inwardly slanted wall of another stabilizing device when stacked.

7. The stabilizing device recited in claim **1**, wherein at least one of the first side and the second side has an adhesive.

8. A stabilizing device comprising:
- a first side having a concentric raised wall disposed adjacent to a perimeter;
- a second side having a concentric recess disposed adjacent to the perimeter; and
- a cylindrical boundary wall at the perimeter connecting the first side to the second side.

9. The stabilizing device recited in claim **8**, wherein a second stabilizing device can be stacked on top of the stabilizing device.

10. The stabilizing device recited in claim **9**, wherein when stacked, the concentric raised wall disposed on the first side fits snugly into the concentric recess disposed on the second side of the second stabilizing device.

11. The stabilizing device recited in claim **8**, wherein the raised wall has an inwardly slanted wall, and the recess has a slanted wall that mates with the inwardly slanted wall.

12. The stabilizing device recited in claim **8**, wherein at least one of the first side and the second side has an adhesive.

13. A stabilizing device comprising:
- a first side having a spherical concave contour with a raised edge disposed adjacent to a perimeter;
- a second side having a spherical convex contour recess adapted to mate with the spherical concave contour when stacked on top of a second stabilizing device; and
- a boundary wall at the perimeter connecting the first side to the second side.

14. The stabilizing device recited in claim **13**, wherein when stacked, the spherical concave contour with a raised edge disposed on the first side of the stabilizing device fits snugly into the spherical convex contour recess disposed on the second side of the second stabilizing device.

* * * * *