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(54) **FURNITURE GLIDE WITH POLYMER
SUPPORT PLATFORM**

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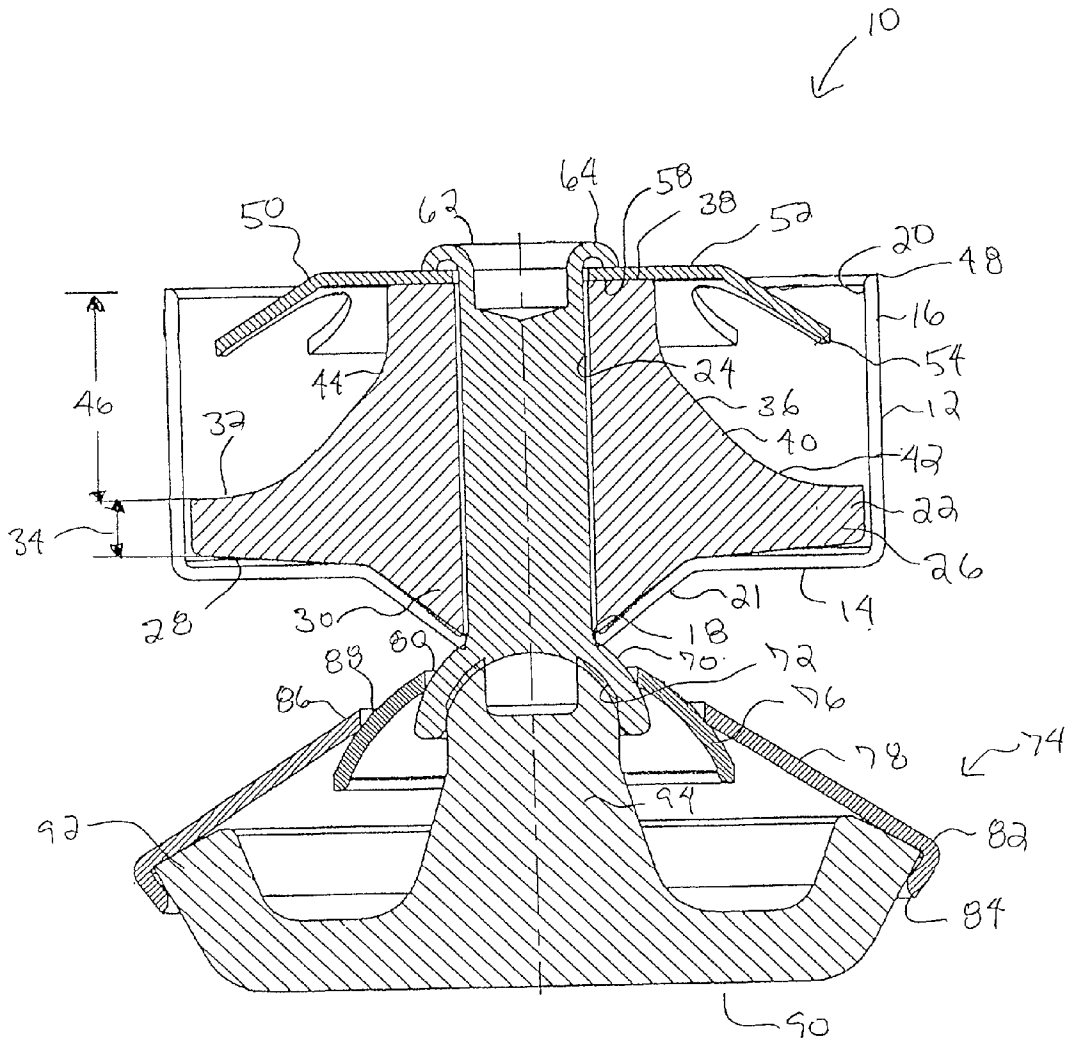
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(57) **ABSTRACT**

A furniture glide including a ferrule having a circular bottom wall and an upstanding cylindrical side wall. A support platform composed of polymeric material is positioned in the ferrule. The support platform has a platform base in contact with the bottom wall and a support column extending upward from the platform base to a support shoulder. A clip has a clip hub in contact with the support shoulder and multiple clip arms which extend radially outward and longitudinally downward from the clip hub to engage a furniture leg inserted into the ferrule. A glide base is mounted to the ferrule.



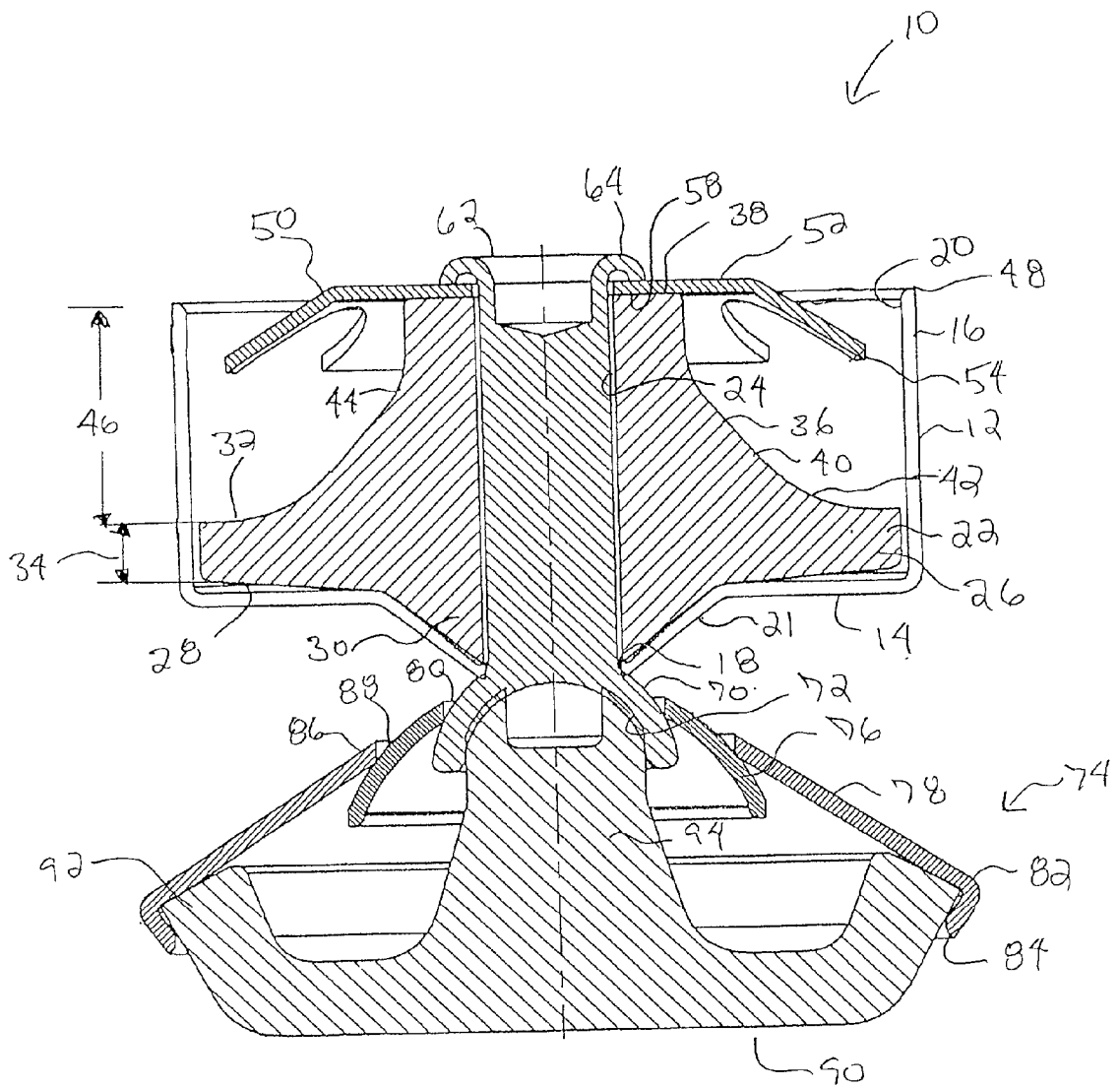


Fig. 1

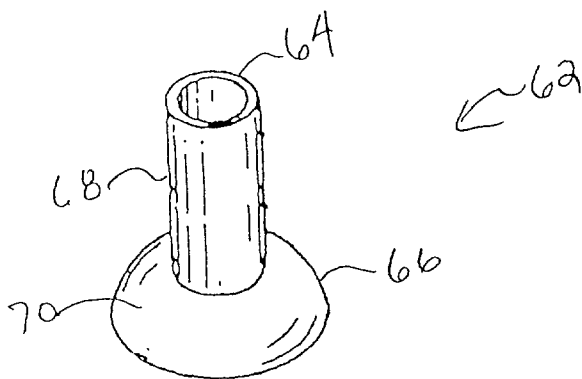


Fig. 2

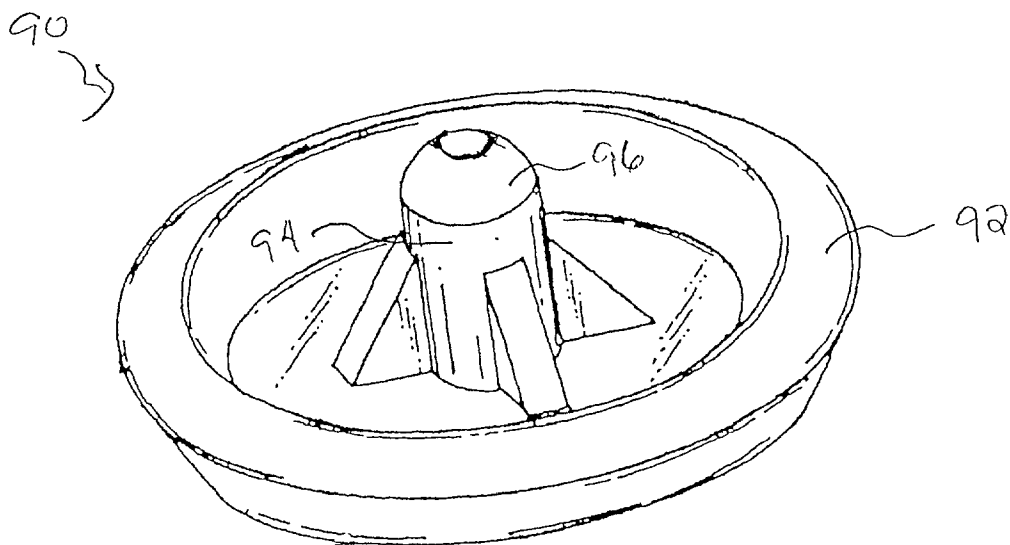


Fig. 3

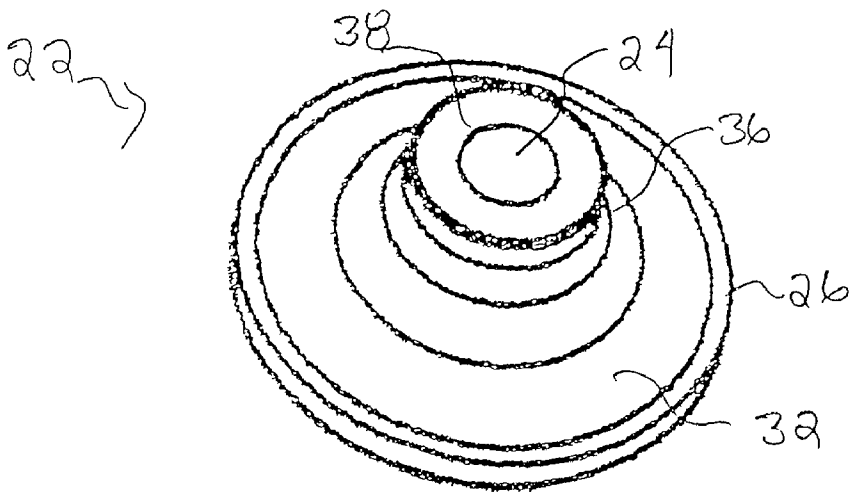


Fig. 4

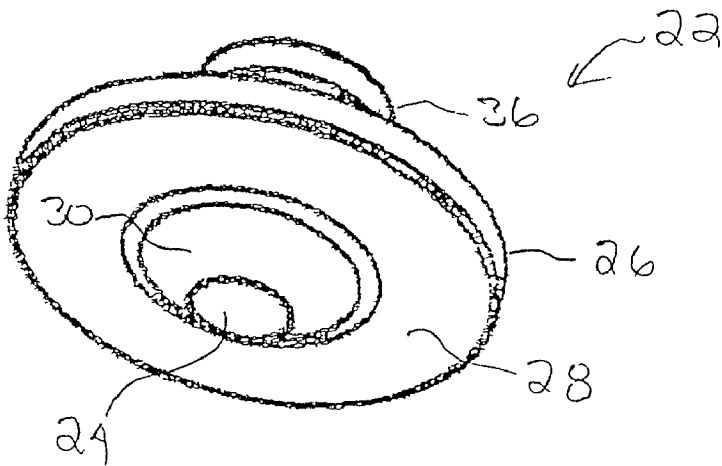


Fig. 5

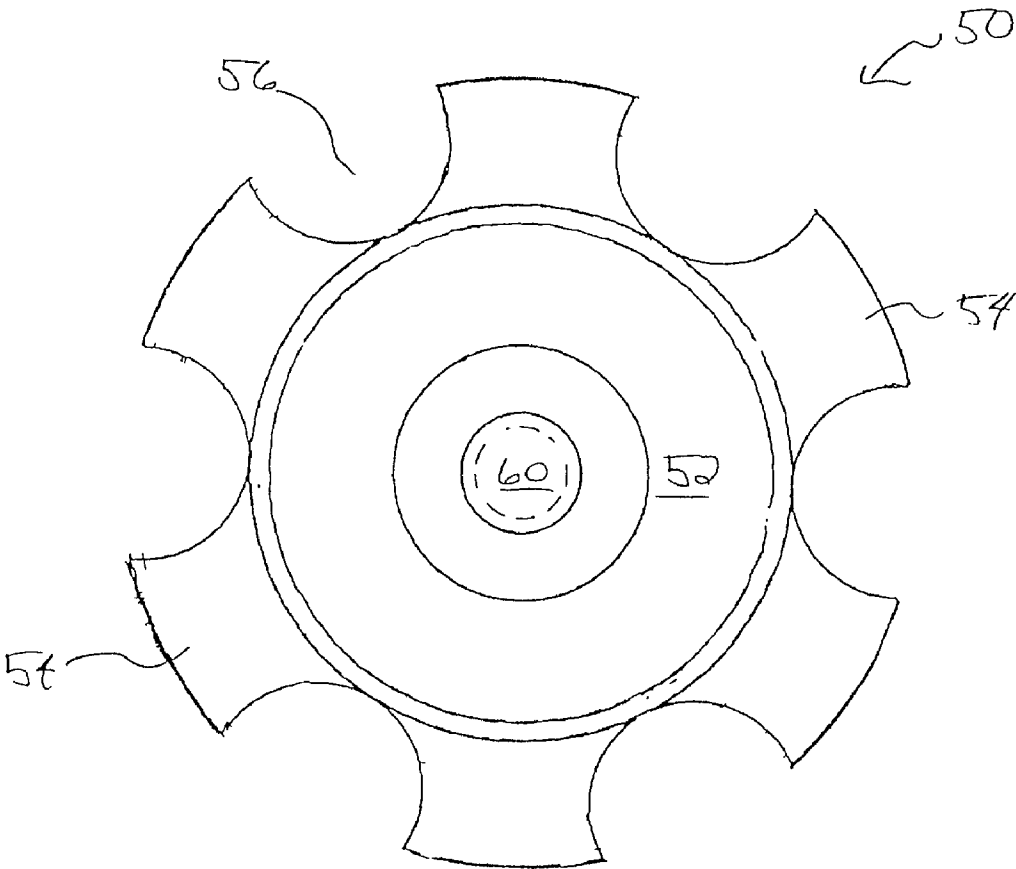


Fig. 6

FURNITURE GLIDE WITH POLYMER SUPPORT PLATFORM

FIELD OF THE INVENTION

[0001] This invention relates to the field of furniture glide components. More specifically, this invention relates to an improved swiveling furniture glide for the leg of an article of furniture and a method for manufacture of the same.

BACKGROUND OF THE INVENTION

[0002] Furniture glides are well known for fixation to the leg of an article of furniture to protect the end portion of the leg from damage, and further, to protect a floor surface from damage as a result of the furniture leg.

[0003] The conventional furniture glide typically employs a plastic bottom surface for contact with the floor to allow sliding of the furniture on a floor surface without excessive gouging or scratching of that floor surface. Furthermore, the conventional furniture glide spreads the mass of the furniture and any additional mass, for example, a person sitting in a chair, over a larger surface area to prevent denting or impression into the floor surface. Some furniture glides further employ a swiveling mechanism to allow the bottom of the glide to rest flat on a floor surface for varying angles of the furniture leg. The swiveling mechanism compensates for slight variations in the lengths of the legs of furniture, variations in the flatness of the floor surface, and splay in the legs of the article of furniture.

[0004] A conventional swiveling furniture glide requires at least three assembly operations for complete construction. In the first operation a tubular clip for gripping a furniture leg is inserted into a thin walled ferrule having a constant diameter. The top edge of the ferrule is then rolled or crimped to maintain the clip in position. In the second assembly operation a disc shaped support platform is mounted to the bottom of the ferrule. The support platform reinforces the ferrule and provides the structural support to hold the tubing of the leg. A rivet having on one end a rounded portion, and on the other end an expandable head, is inserted through aligned openings in the ferrule and support platform. The head of the rivet is expanded to fix the ferrule and support platform together. The rounded portion of the rivet supports a pair of nesting shells. In the final assembly operation a nylon base for contact with the floor, and a vinyl cushion, are installed by crimping the outer shell to the base whereby the cushion is between the rounded portion of the rivet and the base. The cushion absorbs the forces from changing weights on the furniture. The base allows the furniture to slide or glide along a floor surface.

SUMMARY OF THE INVENTION

[0005] Briefly stated, the furniture glide of the invention includes a ferrule having a circular bottom wall and an upstanding cylindrical side wall. A support platform composed of polymeric material is positioned in the ferrule. The support platform has a platform base in contact with the bottom wall and a support column extending upward from the platform base to a support shoulder. A clip has a clip hub in contact with the support shoulder and multiple clip arms which extend radially outward and longitudinally downward from the clip hub to engage a furniture leg inserted into the ferrule. A glide base is mounted to the ferrule.

[0006] The height of the support platform is preferably selected such that the support shoulder is disposed proximate to the upper rim of the side wall and at least a portion of the clip hub extends upwardly beyond the upper rim of the ferrule. The clip arms are resiliently flexible and frictionally engage the inner surface of the furniture leg. A rivet mounts the support platform and the clip to the ferrule. Preferably, the head portion of the rivet is disposed adjacent the upper surface of the clip, the elongated neck portion of the rivet extends through the clip rivet opening, a bore extending axially through the support platform, and the ferrule rivet opening, with a swivel portion of the rivet being disposed adjacent the lower surface of the bottom wall of the ferrule.

[0007] An object of the invention is to provide a furniture glide having an improved support platform for supporting a furniture leg.

[0008] Another object of the invention is to provide a furniture glide that is more efficient to assemble.

[0009] A further object of the invention is to provide a furniture glide that provides a reduced number of components.

[0010] These and other objects of the invention are readily apparent from review of the specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a lateral cross-sectional view of the furniture glide of the invention having a ferrule, a clip, a support platform, a rivet, an inner shell, an outer shell, and a glide base;

[0012] FIG. 2 is a perspective view of the rivet of FIG. 1;

[0013] FIG. 3 is a perspective view of the glide base of FIG. 1;

[0014] FIG. 4 is a top perspective view of the support platform of FIG. 1;

[0015] FIG. 5 is a bottom perspective view of the support platform of FIG. 1; and

[0016] FIG. 6 is a top view of the clip of FIG. 1.

DETAILED DESCRIPTION OF THE INVENTION

[0017] In the following description of the preferred embodiments of the invention, like numeral identifiers represent like components as depicted in the figures. The furniture glide in accordance with the invention is generally designated by the numeral 10. With reference to FIG. 1, the furniture glide 10 has a ferrule 12. The ferrule 12 has a circular bottom wall 14 and an upstanding cylindrical side wall 16. The bottom wall 14 defines a circular rivet opening 18 coaxial with the ferrule opening 20. The bottom wall 14 of the ferrule 12 is further preferably contoured having a dropped portion 21 adjacent the rivet opening 18. The inside diameter of the ferrule 12 and the ferrule opening 20 are selected such that a tubular furniture leg (not shown) may be easily inserted therein. Preferably, the ferrule opening 20 and the ferrule 12 have the same inside diameter, as shown in FIG. 1.

[0018] With reference to FIGS. 1, 4 and 5, a support platform 22 is positioned within the ferrule 12. The support

platform 22 is formed from polymeric material, preferably nylon. An axial bore 24 extending longitudinally through the support platform 22 is coaxial with the ferrule 12, the rivet opening 18, and the ferrule opening 20 when the support platform 22 is installed in the ferrule 12. The support platform 22 has a platform base 26 having an outside diameter which is slightly smaller than the inside diameters of the ferrule opening 20 and the ferrule 12 to facilitate insertion of the support platform 22 into the ferrule. The bottom surface 28 of the platform base 26 preferably has a contour which is complimentary to that of the bottom wall 14 of the ferrule 12, having a dropped portion 30 that is tapered toward bore 24. The furniture leg is inserted through the ferrule opening 20 until fully seated against the upper surface 32 of the platform base 26. The thickness or height 34 of the platform base 26 is selected such that the support platform 22 and the ferrule 12 together, are fully capable of supporting a furniture leg under all conditions.

[0019] A support column 36 extends longitudinally upward from the platform base 26 to a support shoulder 38. In a preferred embodiment, a lower section 40 of the support column 36 has a frustoconical-shape, with the outside diameter of the base 42 of the lower section 40 being greater than the outside diameter of the top 44 of the lower section 40, to provide greater mechanical strength to the support column 36. The height 46 of the support column 36 is selected such that the support shoulder 38 is positioned proximate to the upper rim 48 of the ferrule 12.

[0020] With reference to FIGS. 1 and 6, a clip 50 formed from a resilient metal disk has a circular clip hub 52 and a plurality of clip arms 54 which extend radially outward and longitudinally downward from the clip hub 52. The spaces 56 disposed intermediate the clip arms 54 have a semi-circular shape. The lower surface 58 of the clip hub 52 is supported on the support shoulder 38 of the support platform 22 preferably such that at least a portion of the clip hub 52 extends upwardly past the upper rim 43 of the ferrule 12 and the clip arms 54 extend longitudinally downward into the ferrule 12.

[0021] The outside diameter defined by the clip arms 54 is selected such that it is slightly greater than the inside diameter of the tubular furniture leg. The clip arms 54 are resiliently deformable whereby as a tubular furniture leg is inserted into the ferrule 12, the end of the furniture leg engages the clip arms 54 and deforms the clip arms 54 radially inwardly to the smaller inside diameter of the furniture leg. The spring force of the clip arms 54 biases each clip arm 54 radially outward to frictionally engage the inner surface of the furniture leg to thereby mount the furniture glide 10 to the furniture leg.

[0022] The clip hub 52 defines a central clip rivet opening 60. The clip rivet opening 60 is aligned with the bore 24 of the support platform 22 when the clip 50 is mounted on the support column 36. The rivet openings 18, 60 and the bore 24 are of the same diameter.

[0023] With reference to FIGS. 1 and 2, a rivet 62 is secured through the clip rivet opening 60, the support platform bore 24, and the ferrule rivet opening 18. The rivet 62 has an expandable head portion 64, an opposite swivel portion 66, and an elongated neck portion 68 extending therebetween. The head portion 64 of the rivet 62 is inserted through the aligned clip rivet opening 60, support platform

bore 24, and ferrule rivet opening 18 and rounded or peened over to pull the swivel portion 66 against the bottom wall 14 of the ferrule 12. The rivet 62 securely fastens the ferrule 12, support platform 22, and clip 50 together. The swivel portion 66 of the rivet 62 extends downward from the bottom wall 14 and radially outward to define a convex spherical outer swivel surface 70 and a concentric inner spherical swivel surface 72.

[0024] A shell assembly 74, having an inner shell 76 and an outer shell 78, slidably engages the outer swivel surface 70 of the rivet 62. The inner shell 76 is generally spherical and defines a circular inner shell opening 80 having a diameter less than the swivel portion 66 of the rivet 62. The inner shell 76 is nested within the outer shell 78. The outer shell 78 has a generally frustoconical shape forming an expanded portion 82 defining an outer edge 84 and a reduced portion 86. The outer shell 78 defines a circular outer shell opening 88 at the reduced portion 86 having a diameter less than the outer diameter of the inner shell 76. The spherical shape of the inner shell 76 allows for improved swiveling sliding engagement of the inner shell 76 with the outer shell 78.

[0025] A glide base 90 is mounted to the expanded portion 82 of the outer shell 78. The glide base 90 is preferably molded as a unitary or singular component. The glide base 90 is circular, having an annular rim portion 92 for engagement to the outer shell 78 and an axial elevated central post portion 94. (See FIGS. 1 and 3) The glide base 90 is mounted in position by the crimped outer edge 84 of the outer shell 78. The post portion 94 of the glide base 90 defines a generally convex base swivel surface 96 in congruent surface-to-surface contact with the inner swivel surface 72 of the rivet 62. The post portion 94 is dimensioned of a sufficient height to maintain the shell assembly 74 in tight engagement with the swivel portion 66 of the rivet 62. The glide base 90 is preferably constructed of a hard wear-resistant plastic such as nylon. The glide base 90 acts as a cushion and can slide or glide along a floor surface.

[0026] While a preferred embodiment of the present invention and method for manufacture of the same has been illustrated and described in detail, it should be readily appreciated that many modifications and changes thereto are within the ability of those of ordinary skill in the art. Therefore, the appended claims are intended to cover any and all of such modifications which fall within the true spirit and scope of the invention.

1. A furniture glide for use with a tubular furniture leg having an inner surface, the furniture glide comprising:

- a ferrule having a circular bottom wall and an upstanding cylindrical side wall having an upper rim;
- a support platform composed of polymeric material positioned in said ferrule, said support platform having a platform base in contact with said bottom wall and a support column extending upward from said platform base to a support shoulder;
- a clip having a clip hub in contact with said support shoulder and a plurality of clip arms extending radially outward and longitudinally downward from said clip hub, each clip arm being resiliently engageable to a furniture leg; and
- a glide base mounted to said ferrule.

2. The furniture glide of claim 1 wherein said support platform has a height wherein said support shoulder is disposed proximate to said upper rim of the side wall.

3. The furniture glide of claim 2 wherein support column includes a lower section having a frustoconical-shape.

4. The furniture glide of claim 3 wherein said lower section of said support column has a base and a top, each having an outside diameter, the outside diameter of the base being greater than the outside diameter of the top.

5. The furniture glide of claim 2 wherein said clip hub has a lower surface supported on said support shoulder of said support platform, at least a portion of said clip hub extending upwardly beyond said upper rim of said ferrule, said clip arms extending longitudinally downward into said ferrule.

6. The furniture glide of claim 1 wherein the clip arms are resiliently flexible and adapted for frictionally engaging the inner surface of a furniture leg.

7. The furniture glide of claim 6 wherein the clip arms define a plurality of openings, each of the openings having a substantially semicircular shape.

8. The furniture glide of claim 1 further comprising a rivet fixing said support platform and said clip to said ferrule.

9. The furniture glide of claim 8 wherein said rivet has an expandable head portion, an opposite swivel portion, and an elongated neck portion extending therebetween.

10. The furniture glide of claim 9 wherein said support platform defines an axial bore, said bottom wall of said ferrule has a lower surface and defines a ferrule rivet opening, and said clip has an upper surface and defines a clip rivet opening, said head portion of said rivet being disposed adjacent said upper surface of said clip, said neck portion of said rivet extends through said clip rivet opening, said bore, and said ferrule rivet opening, and said swivel portion of said rivet is disposed adjacent said lower surface of said bottom wall of said ferrule.

11. A furniture glide comprising:

a ferrule having a circular bottom wall;

a support platform composed of polymeric material positioned in said ferrule, said support platform having a platform base in contact with said bottom wall and a support column extending upward from said platform base to a support shoulder;

a clip supported on said support shoulder, said clip having a plurality of radially outward and longitudinally downward extending clip arms; and

a glide base mounted to said ferrule.

12. A furniture glide comprising:

a ferrule having a circular bottom wall and an upstanding cylindrical side wall having an upper rim;

a support platform composed of polymeric material positioned in said ferrule, said support platform having a platform base substantially conforming with said bottom wall and a support column extending upward from said platform base to a support shoulder disposed proximate to said upper rim of said ferrule;

a clip having a clip hub supported on said support shoulder and a plurality of clip arms extending radially outward and longitudinally downward from said clip hub; and

a glide base mounted to said ferrule.

13. The furniture glide of claim 12 wherein support column includes a lower section having a frustoconical-shape.

14. The furniture glide of claim 13 wherein said lower section of said support column has a base and a top, each having an outside diameter, the outside diameter of the base being greater than the outside diameter of the top.

15. The furniture glide of claim 12 wherein at least a portion of said clip hub extend upwardly beyond said upper rim of said ferrule and said clip arms extend longitudinally downward into said ferrule.

16. The furniture glide of claim 12 wherein the clip arms define a plurality of openings, each of the openings having a substantially semicircular shape.

17. The furniture glide of claim 12 wherein said support platform defines an axial bore, said bottom wall of said ferrule has a lower surface and defines a ferrule rivet opening, and said clip hub has an upper surface and defines a clip rivet opening, and wherein said furniture glide further comprises a rivet having a head portion disposed adjacent said upper surface of said clip hub, a neck portion extending through said clip rivet opening, said bore, and said ferrule rivet opening, and a swivel portion disposed adjacent said lower surface of said bottom wall of said ferrule.

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