

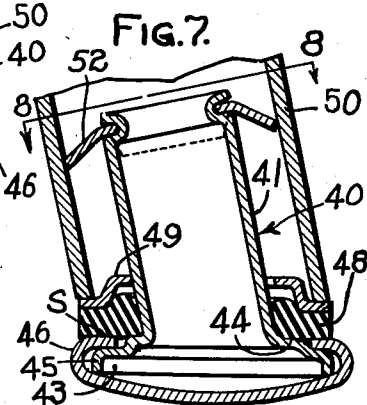
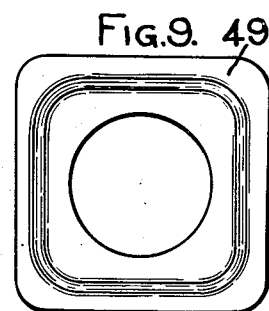
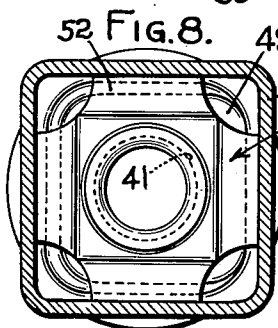
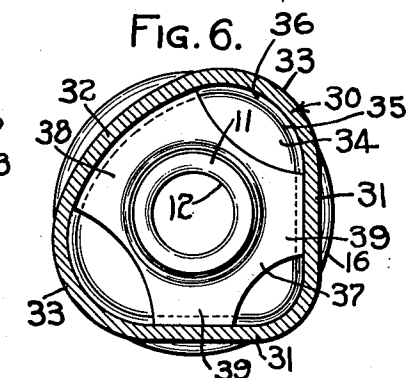
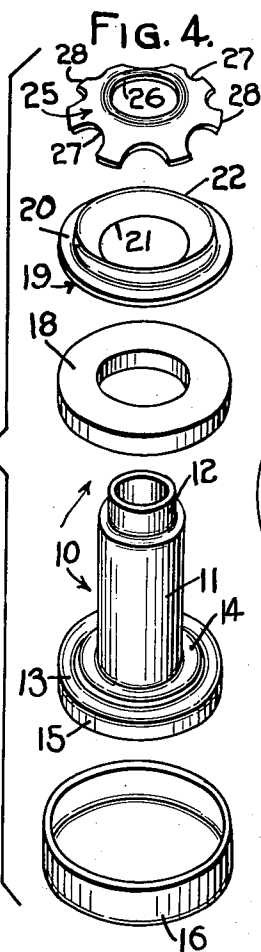
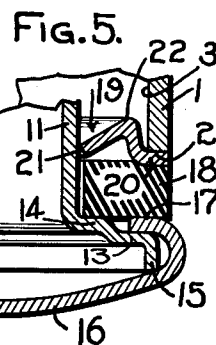
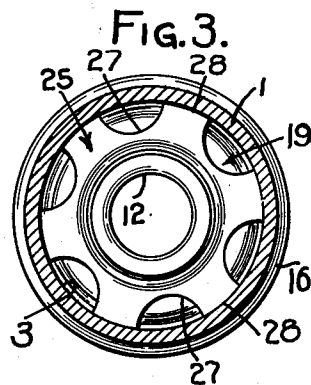
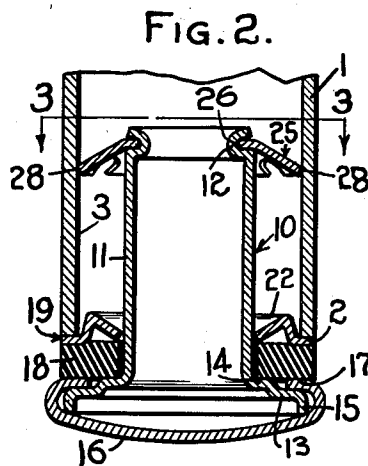
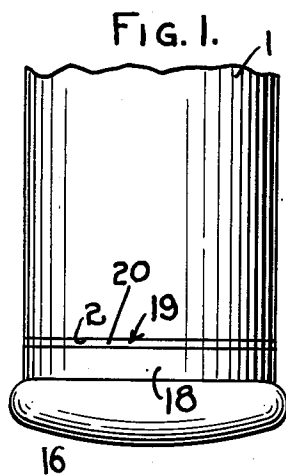
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2,564,635

FURNITURE LEG GLIDER

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UNITED STATES PATENT OFFICE

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FURNITURE LEG GLIDER

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11 Claims. (Cl. 16—42)

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The present invention relates generally to furniture leg gliders, and has particular reference to the type adapted to be inserted in tubular metal furniture legs.

One of the objects of the invention is the provision of a furniture leg glider having a cushion member interposed between the glider shoe and furniture leg permitting relative axial movement of the leg and glider with improved means for securing the glider to the furniture leg.

A further object of the invention is the provision of a glider having a novel construction of supporting member for a resilient cushion permitting radially spaced annular sections of a cushion member to be supported by relatively broad surfaces disposed in a common horizontal plane to prevent rapid deterioration and collapse of the cushion member under load.

A still further object of the invention is the provision of a cushion type furniture leg glider adapted for attachment to an inclined furniture leg and in which the glider shoe is disposed in planes substantially parallel to the floor or supporting surface.

A still further object of the invention is to improve the general construction of furniture leg gliders of the resilient cushion type to provide a simple construction, economical in cost of manufacture and extremely durable in use.

The above and other aims, objects and advantages of the invention will be apparent to persons skilled in the art to which the invention relates from a consideration of the accompanying drawings and annexed specification illustrating and describing several preferred embodiments of the invention.

In the drawings:

Fig. 1 is an enlarged side elevation of a furniture leg glider as applied to a portion of a tubular metal furniture leg;

Fig. 2 is a vertical sectional view of the glider shown in Fig. 1;

Fig. 3 is a transverse sectional view as taken on the line 3—3 of Fig. 2;

Fig. 4 is a disassembled perspective view of the component parts of the preferred form of glider;

Fig. 5 is an enlarged detail sectional view of the base assembly of the glider;

Fig. 6 is a horizontal sectional view, similar to Fig. 3, of a furniture leg glider embodying the invention as applied to tubular legs of generally triangular cross section;

Fig. 7 is a sectional view, similar to Fig. 1, of a glider applied to an inclined furniture leg;

Fig. 8 is a horizontal sectional view as taken on the line 8—8 of Fig. 7; and

Fig. 9 is a plan view of the wear plate for the glider shown in Fig. 7.

Referring to the drawings, the glider is par-

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ticularly adapted for application and use with tubular steel furniture though it will be understood that the glider may be used with wooden and like legs having an axial bore in the bottom end thereof. The leg 1, herein illustrated as of tubular sheet metal construction, may be of any desired cross-sectional shape, for example rectangular, triangular or circular. In the form of invention shown in Figs. 1 to 5, it is illustrated as of circular cross-section. Such legs commonly have a lower open and presenting edges 2 which seriously scratch and mar floors and floor coverings particularly when the furniture leg is subjected to load. It is a common practice to provide a glider for such furniture legs.

The glider of the present invention includes a supporting member 10, herein illustrated as of tubular sheet metal construction which is preferable because of the strength, lightness in weight and simplicity of manufacture. The supporting member comprises a tubular post 11 adapted to be disposed within the furniture leg 1 and having a reduced neck portion 12 at its inner or upper end. The opposite end of the post is flanged laterally to provide a cushion and glider shoe-supporting base 13 and preferably this base is of stepped cross-section providing an annular cushion-supporting surface or embossment 14 adjacent the post and an outer arcuate rim 15 disposed below the surface 14. The outer peripheral rim 15, which constitutes the above shoe-supporting portion, is curved downwardly so that the edge of the metal presents an annular bearing surface for engagement with the shoe, thus providing a construction that is extremely strong against distortion or collapse even when subjected to heavy loads.

The glider shoe 16 is preferably a cup-shaped metal floor-engaging member fitted over the peripheral rim 15 of the base 13, the peripheral edge of the cup-shaped shoe 16 being clenched or rolled over the upper outer surface of the rim 15, as shown in Fig. 2. Thus, the outer peripheral surface 17 of the shoe 16 is disposed in the same horizontal plane as the upper surface 14 of the embossment and the two provide coplanar supporting surfaces for a cushion member later to be described.

A cushion member 18, preferably a rubber or like washer, of desired size and thickness loosely surrounds the post and is adapted to be supported by the coplanar supporting surfaces 14 and 17.

A wear plate 19 loosely surrounds the post 11 and is adapted to be interposed between the washer 18 and the furniture leg edges 2 to receive directly the load imposed on the leg 1. The wear plate 19 has an outer peripheral flange 20 and an inner peripheral edge 21 preferably dis-

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posed in a common plane to bear uniformly upon the upper surface of the rubber cushion. An intermediate portion of the plate 19 is embossed outwardly to provide a projecting rim or embossment 22 to fit within the tubular leg 1 and position the wear plate relative thereto.

Suitable fastener means are provided for retaining the glider assembly in operative position with respect to the end of the leg 1 and preferably this means is secured to the inner end of the post 11 to engage an inner wall 3 of the leg 1.

As herein illustrated, the fastener means advantageously comprises an arched spring metal plate 25 centrally apertured as at 26 to receive the reduced neck 12 of the post, the outer peripheral edges being notched as at 27 to provide circumferentially spaced biting edges 28. The arched plate 25 is disposed on the post so that its peripheral portion extends downwardly toward the glider as shown in Fig. 1. The plate is normally of slightly greater diameter than the inside diameter of the leg 1 and when driven therein is contracted to engage the wall 3 of the leg 1 under tension.

The reduced neck 12 of the post 11 provides a tubular eyelet that may be upset or outwardly turned over the inner peripheral edge of the plate 25. Preferably this connection is a loose fit, there being an axial play of the plate 25 relative to the post 11 of from 0.020 to 0.030 of an inch which is substantially equal to the amount of compression in the rubber washer 18 when a normal weight is imposed on the leg 1. Because of this axial play, strain upon the fastener plate is alleviated.

In Fig. 6 there is illustrated a modified form of furniture leg guide adapted for application to tubular furniture legs of generally triangular cross-section.

As illustrated in Fig. 6, the tubular furniture leg 30 may be of generally triangular cross-section having straight side sections 31 and an intermediate rounded section 32 interconnected by well rounded corners 33. The guide parts 11, 16 and 18 may be like those illustrated in Figs. 1 and 4, but the wear plate at locking spring will be modified to conform to the cross-sectional contour of the leg 30.

For example, the wear plate 34 will be of generally triangular shape conforming to the shape of the leg 30 and has an embossment 35 to fit within the leg 30 and a flange 36 to bear against the lower end thereof. The spring 37 may be generally triangular having a long leg 38 adapted to engage the arcuate wall 32 of the leg and diverging shorter legs 39 adapted to engage the straight walls 31. It will be understood that the spring 37 is loosely mounted on the neck portion 12 of the post 11 and is contracted into tensional engagement with the walls of the leg as the glider post is forced therein, in the same manner as the spring 25 of Figs. 1 to 4.

In Figs. 7, 8 and 9 there is illustrated a further modified form of the invention in which the furniture leg may be disposed oblique to a supporting surface or floor and of tubular general rectangular construction. The glider of the present invention is adapted to be secured in the oblique leg with the glider shoe disposed in a horizontal plane parallel to the supporting surface.

As illustrated in Fig. 7, the tubular post 41 of the supporting member 40 is bent to a position with its axis oblique to the axis of the base 43. The embossment of the base 43 is stretched to a

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flattened condition, as shown at 44 (Fig. 7) on the obtuse angle side of the post and base, and provides a supporting surface for the cushion or washer 48. As will be apparent, the outer peripheral rim 45 of the base 43 provides a supporting surface for the glider shoe 46 which is maintained in a horizontal position, parallel to the supporting surface S, notwithstanding the oblique disposition of the post 41. Preferably the post is bent angularly to the base after assembly of the shoe 46 therewith.

As stated above, the furniture leg 50 may be of general rectangular cross-sectional shape, as shown in Fig. 8. Accordingly, the wear plate 49 will be of similar shape as shown in Fig. 9, and the spring fastener plate 52 will be provided with prongs of a suitable shape to provide gripping engagement with each side of the leg 50 as shown in Fig. 8.

From the above, it will be seen that the invention provides a simple and strong glider and one which functions in a novel manner to alleviate strain and distortion of the fastener means when the leg is under load.

As will be apparent from Fig. 1, in normal conditions, when there is no extra load upon the leg 1, the spring plate 25 engages the inner leg wall 3 under tension and retains the glider in place.

When, however, a load is applied to the leg 1 the force is transmitted uniformly to the rubber cushion 18 through the wear plate 19. The leg is thus moved axially relative to the post 11, the upper end of which has a loose connection with the fastener plate 25 and allows for such movement without imposing a strain upon the fastener plate 25.

A further advantage of the construction is that the opposed surfaces of the wear plate of the post base and shoe engaging opposite faces of the rubber cushion, support the cushion substantially evenly and reduce tendency of collapse of the cushion.

Although I have illustrated and described a preferred embodiment of the invention, I do not intend to be limited thereby as the scope of the invention is best defined in the appended claims.

I claim:

1. A furniture leg glider comprising a post having a portion adapted to extend within a bore of a furniture leg and a glider shoe-carrying flange at one end of said post, a glider shoe underlying said flange and having its peripheral edge portion curled over said flange, a cushion member surrounding said post and bearing upon an upper surface of said shoe, said flange having an annular embossment adjacent said post for supporting a radially inward portion of said cushion in the plane of said upper surface of said shoe.

2. A furniture leg glider comprising a tubular sheet metal post having at one end a reduced neck and at an opposite end an outwardly flanged annular base, said base being of stepped cross-section providing a cushion-supporting surface adjacent said post and a glider shoe-supporting rim axially spaced from said surface, a sheet metal glider shoe secured to said base and having a peripheral portion extended over said rim, a cushion member surrounding said post and supported by the cushion-supporting surface of said base and the upper peripheral surface of said glider shoe, and a leg-engaging fastener member secured to the reduced neck portion of said post.

3. A furniture leg glider comprising a tubular sheet metal post having at one end a reduced

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neck and at an opposite end an outwardly flanged annular base, said base being of stepped cross-section providing a cushion-supporting surface adjacent said post and a glider shoe-supporting rim axially spaced from said surface and oblique to the axis of said post, a sheet metal glider shoe secured to said base and having a peripheral portion extended over said rim, a cushion member surrounding said post and supported by the cushion-supporting surface of said base and the upper peripheral surface of said glider shoe, and a leg-engaging fastener member secured to the reduced neck portion of said post.

4. A furniture leg glider comprising a post having a portion adapted to extend within a bore of a furniture leg and a glider shoe-carrying flange at one end of said post, a glider shoe underlying said flange and having its peripheral edge portion curled over said flange, said flange having an annular embossment adjacent said post providing a surface for supporting in the plane of an upper surface of said shoe a radially inward portion of a cushion member which may be assembled with said glider surrounding said post, said upper surface of said shoe providing an adjacent surface for supporting a radially outward portion of such a cushion member.

5. A furniture leg glider comprising a tubular sheet metal post having at one end a reduced neck and at an opposite end an outwardly flanged annular base, said base being of stepped cross-section providing a cushion-supporting surface adjacent said post and a glider shoe-supporting rim axially spaced from said surface, a sheet metal glider shoe secured to said base and having a peripheral portion extended over said rim, said peripheral portion of said glider shoe having an upper peripheral surface providing a second cushion-supporting surface surrounding and substantially in the plane of said first-mentioned cushion-supporting surface, said cushion-supporting surfaces providing support for a cushion member which may be assembled with said glider surrounding said post, and a leg-engaging fastener member secured to the reduced neck portion of said post.

6. A furniture leg glider comprising a tubular sheet metal post having at one end a reduced neck and at an opposite end an outwardly flanged annular base, said base being of stepped cross-section providing a cushion-supporting surface adjacent said post and a glider shoe-supporting rim axially spaced from said surface and oblique to the axis of said post, a sheet metal glider shoe secured to said base and having a peripheral portion extended over said rim, said cushion-supporting surface of said base and the upper peripheral surface of said glider shoe providing surfaces in substantially the same plane for supporting a cushion member which may be assembled with said glider surrounding said post, and leg-engaging fastener member secured to the reduced neck portion of said post.

7. A glider for tubular furniture legs comprising a supporting member having a post adapted to be disposed within the bore of a tubular furniture leg and a horizontally disposed base at the lower end of said post extending laterally therefrom, a glider shoe underlying and secured to said base, said glider shoe and said base providing surfaces in substantially the same plane for supporting a cushion member which may be as-

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sembled with said glider surrounding said post, said surfaces having an outer peripheral outline conforming substantially to the cross-sectional outline of the furniture leg to which the glider may be attached, and a bowed resilient plate having an axially movable connection with the inner end of said post, said post having at said inner end a groove for confining axial movement of said bowed plate within narrow limits, said plate being adapted under compression for tensioned biting engagement with the inner walls of said furniture leg.

8. A glider for tubular furniture legs in accordance with claim 7 having a resilient cushion member surrounding the post supported by the cushion-supporting surfaces of the glider and base for permitting relative axial movement of the post and a furniture leg in which the glider is mounted.

9. A glider for tubular furniture legs in accordance with claim 7 having a wear plate loosely surrounding the post and adapted to bear directly against an end of a furniture leg, and a resilient cushion member surrounding said post and interposed between said wear plate and the cushion-supporting surfaces of the glider shoe and the base for permitting slight axial movement of said post relative to a furniture leg in which the glider is mounted.

10. A glider for tubular furniture legs in accordance with claim 7 wherein the inner end of the post has a narrower necked portion and the bowed resilient plate has an axially movable connection with said necked portion, said necked portion providing the groove for limiting axial movement of said bowed plate.

11. A glider for tubular furniture legs comprising a tubular sheet metal post having outwardly extending flange portion at one end and a narrower necked portion at the other end, a glider shoe underlying and secured to said flange portion, said glider shoe and said flange portion providing cushion-supporting surfaces in substantially the same plane, a wear plate loosely surrounding said post adapted to bear directly against an end of a furniture leg, a resilient cushion member interposed between said wear plate and said cushion-supporting surfaces for permitting relative axial movement of said post and a furniture leg in which the glider is mounted, and a bowed resilient plate having an axially movable connection with the necked portion of said post, said plate having a plurality of notches around the periphery thereof and a plurality of biting edges on said periphery intermediate said notches, said necked portion providing a groove for confining axial movement of said plate within limits, said plate being adapted under compression for tensioned biting engagement with the inner wall of said furniture leg.

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