

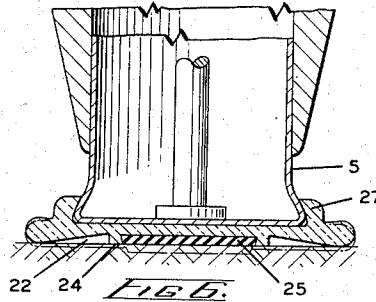
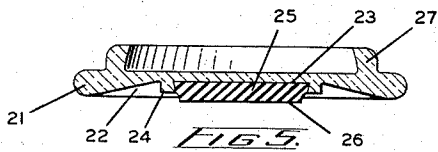
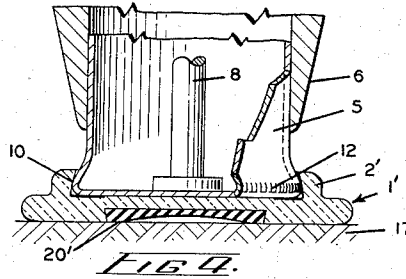
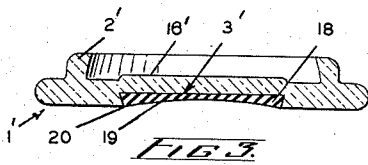
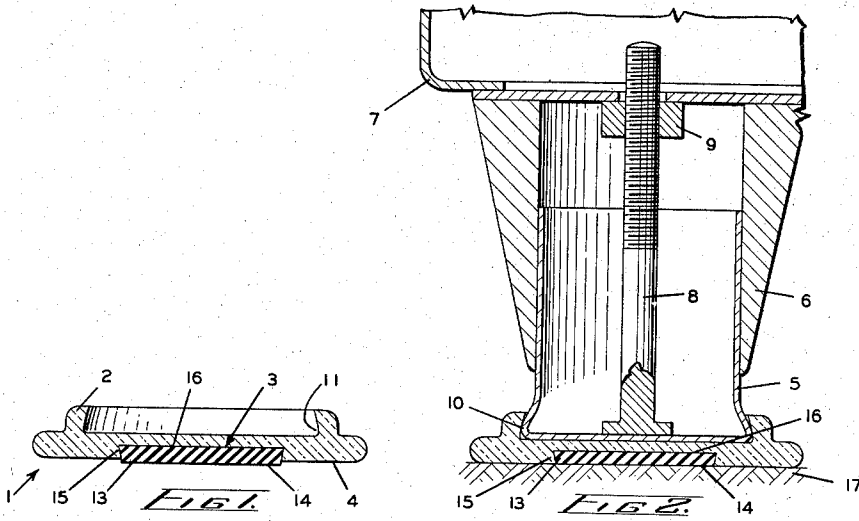
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FURNITURE GLIDER

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FURNITURE GLIDER

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This invention relates to improvements in protective devices commonly called caster cups or gliders to be applied to the feet of equipment generally classified as furniture to prevent indentation of the flooring.

More particularly, the invention relates to improvements in devices of this type which are especially applicable to the feet of office equipment such as desks, telephone and office tables and the like.

The principal object of the invention is to provide a caster cup or glider which will snap on to the foot of a leg of a desk or other office furniture so that it will be securely held against accidental dislodgement, will firmly grip the flooring to positively preclude shifting of the piece, under use, and at the same time will preclude the foot to which it is applied from penetrating or indenting the flooring.

Another important object is to provide a caster cup or glider as aforesaid which will be substantially unbreakable.

Again it is an object to provide a caster cup or glider which can be very economically manufactured.

According to the invention the glider or cup is formed at its upper side with a resilient peripheral foot gripping lip and incorporates floor anchoring means at its underside.

Further according to the invention the glider is molded of a plastic material, e. g. polyethylene, which forms a thermal barrier as well as a stress distributing member to prevent heat transfer from the foot to the flooring.

In its simplest form, the glider or cup is formed with a central recess at its underside and a body of rubber is locked in the recess and presents a friction surface exposed at the bottom of the cup, and upon the glider cup assuming the weight of a desk or the like, the rubber is adapted to be compressed between the cup and flooring to securely grip and anchor the cup to the flooring.

According to alternate forms of the invention, provision is made to provide, in addition to a friction rubber to flooring grip, a suction grip between the undersurface of the glider and the flooring.

Still further, the invention envisages the employment of a suction grip which is automatically made as the weight of the furniture pieces is assumed and broken as the weight of the furniture piece is removed.

These and other objects and features of the invention will become apparent from the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a mid-vertical sectional view of the caster cup or glider constructed to embody the invention;

Figure 2 is a view similar to Figure 1 but showing the glider applied to the foot of a piece of furniture;

Figure 3 is a view similar to Figure 1 but showing an alternative form of the invention;

Figure 4 is a view similar to Figure 2 but illustrating the glider of Figure 3 applied to the furniture piece;

Figure 5 is a view similar to Figures 1 and 3 showing a further alternative of the invention; and

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Figure 6 is a view similar to Figure 4, but showing the glider of Figure 5 applied to the furniture piece.

Referring first to Figures 1 and 2, the caster cup or glider comprises a generally cup-shaped body 1 formed with an annular upstanding lip 2 at its upper side and formed with a circular central recess 3 in its flat underside 4. The body 1 is molded from a suitable plastic which has a measure of resiliency, and which exhibits a low thermal conductivity, a particularly suitable material being hard flow polyethylene, although butyrite or other suitable plastic materials may be employed.

The hard flow polyethylene has been found to provide sufficient rigidity in the glider to distribute stresses over the area of the underside 4 of the glider and at the same time provide sufficient resiliency in the lip 2 to enable the lip to resiliently grip the foot 5 of the leg 6 of a furniture piece such as a desk 7, illustrated in Figure 2. As illustrated, the foot 5 is adjustable relative to the leg 6 of the furniture piece upon turning the foot so that bolt 8 carried thereby threads through threaded plate 9 fixed to the desk 7. The foot 5 is shown as having an enlarged bottom 10 and the lip 2 of the glider is shaped to correspond to the enlarged foot bottom 10, and preferably is undercut at 11 so that when the lip 2 resiliently conforms around the foot portion 10 there will be a firm interlock therebetween.

Frequently in furniture of this type, the foot portion 10 is knurled as at 12 as shown in Figure 4. This augments the interlock between the lip of the glider and the foot.

With the resilient lip arrangement above described, the body 1 may be quickly snapped onto or removed from the foot 5, and the grip effected by the lip enables the foot to be turned by turning the cup or glider in the levelling of the desk.

As shown in Figure 1, mounted in the recess 3 in the underside of the body 1 is a block or body of rubber 13 in the form of a rubber disc, which fills the recess and may project below the flat underside 4 of the body to present a friction surface 14. Preferably the recess 3 has its peripheral wall undercut as at 15 and the block of rubber 13 is under compression in a direction parallel to the bottom wall 16 of the recess 3, so that the rubber block interlocks beneath the wall of the recess and presses tightly thereagainst. Additionally, the rubber 13 may be cemented to further anchor it in the recess 3.

As shown in Figure 2, when the glider is applied to the foot of the furniture piece, and the weight of the piece assumed by the cup, the body of rubber 13 will be compressed in a direction perpendicular to the bottom wall 16 of the recess into the plane of the flat underside 4 of the glider body 1, and the friction surface 14 of the rubber will be under pressure, urging it into intimate gripping relation with the flooring 17.

It will also be understood that if the rubber body 13 is, in the uncompressed state, disposed with its surface 14 flush with the bottom 4 of the body 1, the inherent resiliency of the body 1 will result in its deformation under the weight of the furniture piece sufficient to firmly compress and press the rubber body 13 against the flooring.

In use, therefore, the glider will securely anchor the foot 5 of the desk or furniture piece 7 to the flooring while distributing the weight of the piece transferred through the foot over an increased floor area.

Additionally, the glider forms a heat insulating barrier to prevent transfer of heat from the desk or furniture piece downwardly through the foot 5 to the flooring. In this way, the glider prevents a heat transfer to the flooring beneath the foot 5. This fact is especially important where the flooring comprises tile or like material which softens under heat. The glider thus both distributes

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the weight of the furniture piece over an increased area and prevents softening of the flooring at the point where the weight is assumed to prevent indentation of the flooring.

In the embodiment of the invention shown in Figures 3 and 4, the block or body of rubber 13 shown in Figures 1 and 2 is replaced by a dished or cup-shaped rubber body 18 presenting a concave undersurface 19. As shown in Figure 3, the central portion of the plastic body 1', within the resilient lip or flange 2', is raised as at 16' and the rubber body 18 has its peripheral portion 20 substantially flush with the underside of the plastic body at the periphery of the recess 3'. When the glider is in use as illustrated in Figure 4, under the weight of the furniture piece, the central portion 16' of the plastic body 1' is depressed with the result that a peripheral portion 20' of substantial area of the rubber is compressed into contact with the flooring 17 and acts to grip the flooring. At the same time, the central portion 19 of the rubber body 18 acts as a suction cup which has been partially collapsed under the weight of the furniture piece to augment the anchorage between the glider and the flooring.

In use, when the weight of the desk or furniture piece is assumed by the glider of Figures 3 and 4, both the friction grip afforded by the surface area 20' and the suction grip are automatically effected by the downward flexing or deformation of the central cup portion 16'. On the other hand, when it is desired to move the furniture piece, the lifting of the piece to remove its weight on the cup automatically effects release of both the friction and suction grip since the material of the cup has sufficient resiliency to recover to its shape of Figure 3.

In addition to the achievement of the friction and suction grips, the downward flexing or deformation of the central cup portion 16' acts to flex the resilient annular wall 2' inwardly to increase its grip on the surface 10 of the adjustable or levelling foot 5.

In the embodiment of the invention shown in Figures 5 and 6, the body of the glider designated at 21 has a concaved undersurface 22 formed with a central recess 23 defined by an annular wall 24. A block or body of rubber 25 corresponding to the body of rubber 13 is anchored in the recess 23 to present a friction surface 26 disposed at the undersurface of the plastic block. The body 21 is provided at its upper side with an annular resilient lip 27 corresponding to the lip 2 of the gliders of Figures 1 and 3.

As illustrated in Figure 6, when the glider of Figure 5 is snapped onto the adjustable or levelling foot 5 of the furniture piece, the rubber block 25 is compressed and the cup formation presented by the undersurface 22 of the body 1 partially collapsed to bring the central annular wall 24 into contact with the flooring 17. As is the case with the embodiment of the invention shown in Figures 3 and 4 and to a lesser extent in the embodiment shown in Figures 1 and 2, this action causes the forcing of the lip 27 upwardly and inwardly to more positively grip the foot 5. At the same time a suction grip is obtained between the body 21 and the flooring rather than between the rubber and flooring as is the case in the embodiment shown in Figures 3 and 4, which grip augments the gripping effect achieved between the friction surface 26 of the rubber body 25 and the flooring.

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While three embodiments of the invention have been illustrated, it will be understood that various other modifications in detail may be made without departing from the invention or scope of the appended claims.

What I claim as my invention is:

1. A glider comprising a body portion formed of a material of low heat conductivity having a measure of resiliency, said body having at its upper side an upstanding lip adapted to engage the foot of a furniture piece, said body having a recess with upwardly diverging walls formed in its underside, and a body of rubber registering with said diverging walls to secure same in said recess and presenting a friction surface exposed at the bottom surface of said body portion to be pressed against a floor upon said body portion assuming the weight of a furniture piece.

2. A glider comprising a generally cup-shaped member of material having a measure of resiliency, said member having a recess at its upper side shaped to conform to and adapted to receive the foot of a furniture piece and having a surrounding resilient lip adapted to resiliently grip such foot, said member having a recess with upwardly diverging walls formed in its underside, a body of rubber fitting in said recess, and registering with said diverging walls to secure same in said recess, said rubber body, when uncompressed in a direction towards the bottom of said recess presenting an exposed friction surface at the bottom of said cup-shaped member, said cup-shaped member being deformable under the weight of a furniture piece to press said friction surface into contact with a floor.

3. A glider as claimed in claim 2 in which said cup-shaped member is a molded polyethylene member.

4. A glider as claimed in claim 2 in which said rubber body is recessed to provide a suction grip upon said cup-shaped member deforming under the weight of a furniture piece.

5. A snap-on glider comprising a cup-shaped member of plastic material having a measure of resiliency, said member presenting at its upper side an annular resilient foot gripping tip and a bottom wall within said tip, said bottom wall having a raised central portion, said member having a recess with upwardly diverging walls formed in its underside, and a body of rubber and registering with said upwardly diverging walls to secure same in said recess and presenting to the bottom of said member a frictional gripping surface adapted to grip a floor upon said member assuming the weight of a furniture piece on said bottom wall to deform said raised central bottom wall portion.

6. A glider as claimed in claim 5 in which said body of rubber has a concaved bottom face, the periphery of which constitutes said frictional gripping surface.

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