

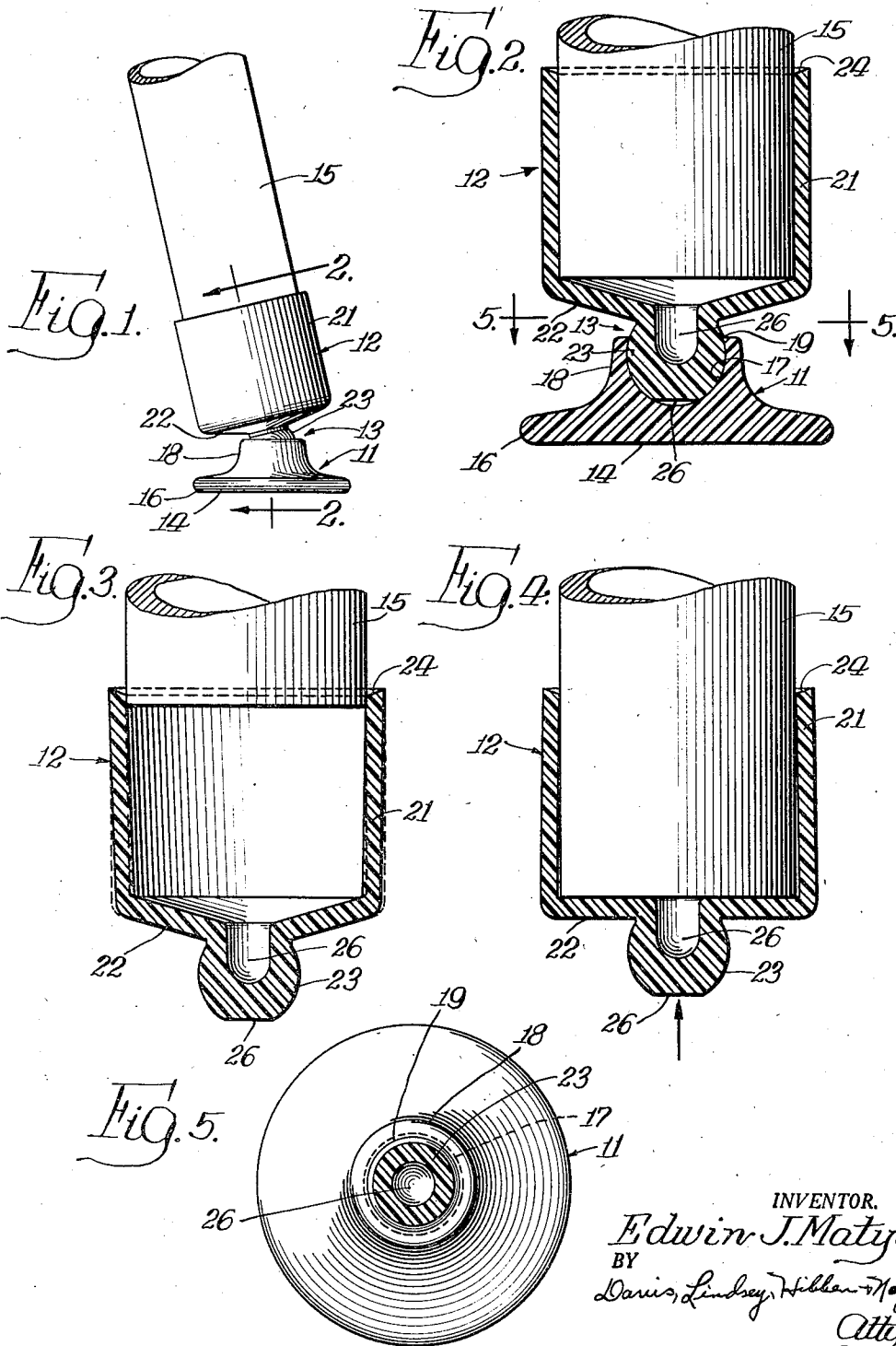
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FURNITURE GLIDE

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FURNITURE GLIDE

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This invention relates generally to furniture glides and more particularly to an improved furniture glide for the leg of a piece of furniture or the like.

Many furniture glides, which have heretofore been utilized for protecting floors and the like, had a number of somewhat undesirable characteristics, which a device of the present invention avoids. The prior devices were often unhandy to install, requiring glue, screws or other such fastening means to retain them in place and, in those cases where installation was simple, the glide usually possessed the unwanted tendency to mar the leg of the piece of furniture, or the undesirable characteristic of tending to fall off the furniture when the leg it supported was raised off the floor. Those glides which did not possess those undesirable characteristics, were generally quite complex, difficult to manufacture, and necessarily expensive.

It is therefore a primary object of this invention to provide a furniture glide that is simple in construction and easily and inexpensively manufactured.

A further object is to provide a furniture glide that may be easily installed on a piece of furniture, yet which will be securely held in position.

Another object is to provide a furniture glide which will not mar the leg on which it is installed, or the floor on which it rests.

A still further object is to provide a furniture glide that is particularly adapted for installation on the legs of tubular metal legged furniture.

Other objects and advantages of the invention will become apparent from the subsequent description taken in conjunction with the accompanying drawing wherein:

Fig. 1 is an elevational view of a glide embodying the feature of the invention and shown as supporting a leg of a piece of furniture or the like.

Fig. 2 is a sectional view on an enlarged scale of the glide shown in Fig. 1, taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view of one of the members of the glide of Fig. 1 and illustrating the initial conformation of the member upon insertion of a tubular leg therein.

Fig. 4 is a sectional view similar to Fig. 3 but showing the manner of fully inserting the leg in the member.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 2.

Generally speaking, the objects of the invention are accomplished by means of a number of structural improvements to the elements of the glide, which exploit the inherent characteristics of resilient molded plastics. Among the characteristics of the plastics utilized are their toughness, resilient yieldability, compression and tensile strength and dimensional stability. A number of plastic materials have many or all of these characteristics, but in the preferred embodiment of the invention, moulded nylon is used.

Referring to the drawing, it may be seen that the invention generally comprises a floor contacting base member 11 and a ferrule member 12. As seen in Figs. 1 and 2 the members 11 and 12 are interconnected by

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ball and socket structure, indicated generally at 13, which as is evident in Fig. 1, permits the glide to adapt itself to a variety of angles of contact between a furniture leg 15 and the floor.

The base member 11 is circular in the embodiment illustrated, although it is to be understood that being a moulded article, it could be given any shape without departing from the scope of the invention. It is provided with a substantially flat floor contacting bottom surface 14, which in this embodiment, has rounded edges 16 for facilitating sliding the piece, to which the glide is attached, along the floor.

The top surface of base member 11 is provided with a raised central portion 18 having a ball-receiving socket 17 therein. The socket 17 shown is a spherical zone or cavity bounded at its upper limit by a plane passing above the center of the sphere to provide an opening 19 which is slightly less in diameter than the maximum diameter of the sphere. Thus the surface of the sphere begins to close upon itself. Because of the resilience of material of which the base is made, opening 19 may be temporarily enlarged to permit a ball member, which is slightly larger in diameter than opening 19, to be inserted in the socket 17. After insertion of such a ball, the opening 19 will return to its original size for retaining the ball in the socket. In this embodiment, the raised central portion 18 of base 11 has a sufficiently thin wall to give the desired resilience to the structure.

The ferrule member 12 is shaped to engage the leg 15 and, since the latter is shown as being made of tubular metal, the member 12 comprises a thin walled substantially cylindrical body portion 21. Its thin walled character and inherent resiliency and yieldability permits it to adjust itself to tubing which is out of round, tapered or otherwise not quite cylindrical. The lower end of the body portion 21 is closed by an end wall 22 of inverted conical form and having a ball 23 extending downwardly from the apex of the cone. Ball 23 is dimensioned to be positioned in the socket 17 and, in the preferred embodiment, to tightly fit the socket so that there will be substantial friction between them for resisting, but not preventing, movement of one relative to the other. To insure substantial area of contact between the ball 23 and the socket 17, when supporting a load, ball 23 is provided with a flat surface 26 on its lower side.

Being made of a resilient molded plastic material, ball 23, end wall 22 and body 21 are, in this instance, molded integral with each other. A hole 26 extends into ball 23 from the inside surface of end wall 22. Hole 26 thus not only saves material, but also reduced shrinkage during molding, permitting better dimensional control of the ball. The hole 26 also increases the resilience of ball 23 to facilitate its passage through the opening 19.

It is, of course, desirable that no outside fastening means such as glue, screws or other arrangements be required to secure the glides in place on the furniture legs. In the case of tubular metal legged furniture particularly, securing can be accomplished by a gripping action by the body of the glide on the leg. In the instant embodiment the cylindrical thin walled body portion 21 is dimensioned to grip the leg 15 to which it is attached. This is done by dimensioning the inside diameter of the open end to snugly fit leg 15 and tapering the inside diameter of the cylinder to a diameter at its lower end which is slightly less than the outside diameter of leg 15, which taper may be seen, in exaggerated form, in Fig. 3. Fig. 3 also shows leg 15 positioned to be inserted in ferrule 12. As an aid to positioning the ferrule for mounting on the leg, body portion 21 is provided with a bevel 24 on its upper edge for directing leg 15 into the open end.

End wall 22 of body portion 21 serves a different func-

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tion from that in previous furniture glides. Normally the closure is a flat bearing surface upon which the leg rests. In this embodiment of the invention, however, the end wall being substantially of thin walled inverted conical form having ball 23 extending downward from its apex, end wall 22 acts as a diaphragm and leg 15 rests on only a small annular area at the base of the cone. As a result of a pressure being exerted on ball 23 such that the pressure has a component co-linear with the central axis of the cone, the cone will tend to be resiliently flattened. Such an arrangement of ball, diaphragm and thin walled cylinder thus provides shock absorber means for cushioning impact. In addition, since the body portion 21 and end wall 22 are formed integrally with each other, such resilient flattening of the cone will tend to expand the diameter of the part of body portion 21 contiguous to the end wall, thus providing a means for expanding that diameter to facilitate mounting the ferrule 12 on leg 15.

Mounting and assembling the glide is very simply accomplished. Ferrule member 12 may be separated from base member 11, and is positioned as shown in Fig. 3, with leg 15 projecting into its open end and is pushed on the leg as far as possible. Ball 23 is then struck a sharp blow in the direction to drive ferrule member 12 on to the leg. The force on the ball tends to flatten the diaphragm and hence expand the diameter of the lower portion of the cylinder, permitting the ferrule to slide easily on the leg, and at the same time urges it into the position shown in Fig. 4. Following the application of force, the diaphragm and cylinder tend to return to their original shape causing the cylinder to tightly grip leg 15. The ball 23 is then forced through opening 19 into socket 17 completing the mounting and assembly.

It is thus seen that a simple, two-piece furniture glide results, which is simply and easily installed on the leg of a piece of furniture, is inexpensive to manufacture, will avoid marring furniture or floor and which is particularly well adapted for installation on tubular metal legged furniture.

Although the invention has been described in connection with certain specific structural embodiments of the invention, it is to be understood that various modifications and alternative structures may be resorted to without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A furniture glide comprising a base member and a ferrule member both made of resilient molded plastic material, said base member having a substantially flat floor contacting bottom surface and a socket in its upper surface, said socket comprising a spherical zone bounded at its upper limit by a plane passing slightly above the center of the sphere to provide an opening slightly less in diameter than the maximum diameter of said socket,

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said ferrule member being adapted to support a leg of a piece of furniture or the like and comprising a thin walled substantially cylindrical body portion, said body portion being open at its upper end and having its lower end closed by a thin walled substantially conical diaphragm extending below said body portion and terminating in a ball extending from its apex, the lower end of said body portion when in relaxed condition having an inner circumference no greater than that of the leg to be accommodated therein, the flattening of said diaphragm causing the circumference of adjacent portions of said body portion to resiliently increase slightly in response to pressure against said ball to facilitate placing the ferrule on the leg, said ball being dimensioned to fit tightly in said socket and said ball being forced through said opening into said socket and forming therewith a ball and socket joint.

2. A furniture glide of resilient molded plastic material comprising a base member having a substantially flat floor contacting bottom surface and a socket in its upper surface, said socket having an opening slightly less in diameter than the maximum diameter of said socket, and a ferrule member adapted to support a tubular metal leg of a piece of furniture or the like and comprising a thin walled substantially cylindrical body portion open at its upper end and dimensioned to tightly receive said leg in gripping relation, said body portion being tapered and having a slightly larger inside diameter at its upper end than at its lower end whereby said upper end may be readily placed on said leg and said lower end tightly grips the leg when in place, said lower end being closed by a thin walled conical diaphragm extending below said body portion and terminating in a ball at its apex, flattening of said diaphragm causing the diameter of the lower end of said ferrule to increase slightly in response to pressure against said ball to facilitate placing the ferrule on the leg, said ball being dimensioned to fit tightly in said socket and said ball being forced through said opening into said socket and forming therewith a ball and socket joint.

3. A furniture glide according to claim 1 and further characterized in that said closed end has a cavity extending from the inner surface of said diaphragm into said ball for increasing the resilience of said ball.

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