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FURNITURE LEG MOUNT

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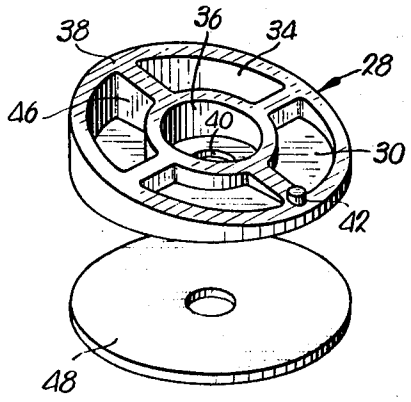


Fig.2.

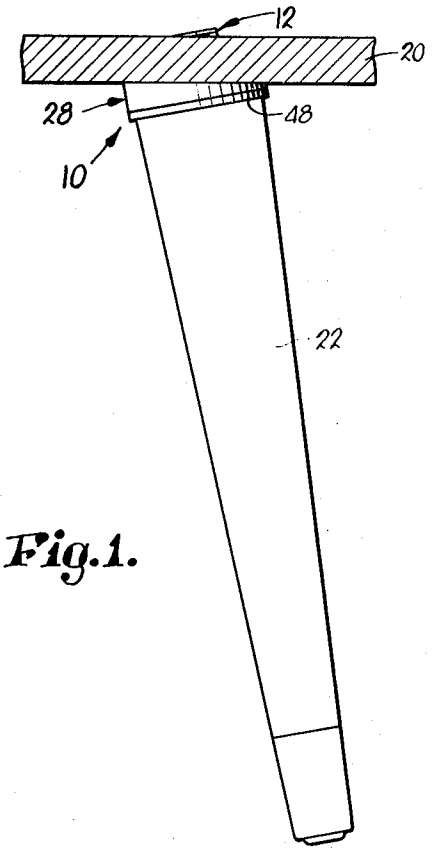
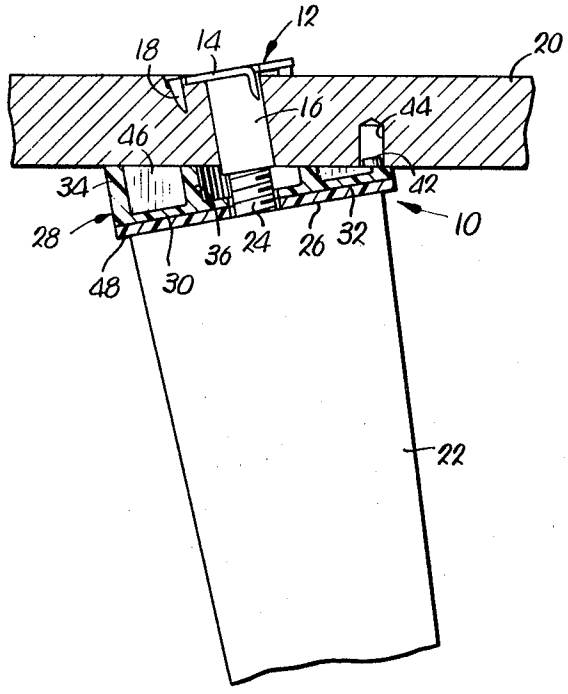


Fig.1.

Fig.3.



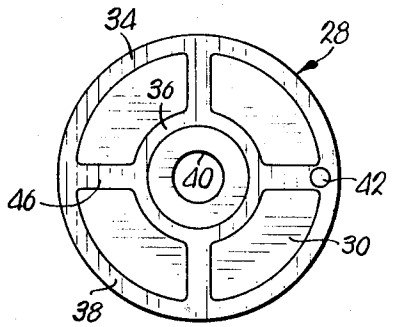


Fig.4.

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FURNITURE LEG MOUNT

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ABSTRACT OF THE DISCLOSURE

A furniture leg mount including a T-nut having a head disposed on one side of a furniture support member and projecting at a predetermined angle toward the opposite surface of the member. A circular leg-supporting wedge has one face lying flatly against said opposite surface of the support member and the opposite face of the wedge is parallel to the upper end of the leg. A stud projecting perpendicularly from said upper end of the leg is received through an opening in the wedge and threadably engages the T-nut to secure the leg to the member with the wedge interposed therebetween. A lug on the wedge is received in a depression in the member to prevent rotation of the wedge when the leg is tightened toward the member.

This invention relates to furniture and, more particularly, to structure for releasably securing angularly disposed furniture legs to a furniture support member.

The legs for certain types of furniture may be constructed with attaching components which interfit with components secured to a supporting member on the corresponding article of furniture. This type of construction has been found to be entirely satisfactory, especially where the legs may be secured to the undersurface of a relatively flat member such as a hassock top or a chair seat. Mass production methods may be used to effect economies in producing the connecting components and also in separately securing the components to the articles of furniture and to the legs. High speed production methods may also effect savings in attaching the finished legs to the articles which are pre-equipped to receive the legs.

Conventionally, the upper ends of the legs are provided with projecting threaded studs which are received in brackets fastened to the furniture support member. Rotation of the legs about their longitudinal axes bring the upper ends into flush engagement with the mounting brackets. Since the leg must be rotated, its upper end is provided with a surface normal to the axis of rotation so that the end seats flush against its seat when the leg is firmly attached to the article of furniture.

Normally, however, it is desirable that the legs be inclined outwardly at an angle from normal to the bracket supporting surface to enhance the overall stability of the article. This means that the bracket must have a surface inclined at the proper angle to present a seat for the upper end of the furniture leg.

It has been the usual practice to provide brackets shaped to present the angled seat for the leg and also having flanges disposed against the proximal surface of the support member. A plurality of screws extending through the flanges and into the support member mount the bracket to the article. A nut carried by the seat in outwardly-spaced relationship from the surface of the support member is threadably engageable with the stud for releasably securing the leg to the bracket.

Brackets of the type described are subject to a number of disadvantages. They are usually formed of relatively

light-gauge sheet metal to minimize the cost of fabrication. However, any tendency of the seat surface of such hollow construction to be bowed outwardly, as might occur from lateral forces against the legs, made the seat surface convex and eliminated any value of the surface for laterally supporting the leg. The flange screws were often incapable of resisting the stresses tending to tear the legs from the article. Consequently, articles of furniture equipped with legs of the type described often were rendered useless by leg failures long before the expiration of the normal life of the remaining components of the articles.

Accordingly, it is the primary object of this invention to provide a furniture leg mount which retains the economies of prefabrication and mass production methods, yet which presents a highly stable and reliable attachment between the legs and the furniture article.

In the achievement of the foregoing object, it is an object of the present invention to provide a mount which utilizes the inherent strength of the furniture support member itself for resisting lateral stresses against the furniture leg.

It is another object of this invention to provide a wedge-shaped spacer to compensate for the angle of the furniture leg, which spacer is sandwiched between the furniture support member and the leg so that the wedge need not be separately attached to the support member.

Still a further object of the invention is to provide a compensator for the leg angle, which compensator need only resist compressive forces in supporting the leg against lateral forces.

Yet another object of the invention is to present a construction which utilizes components including an angle compensating wedge which may be economically fabricated by commercially recognized high speed production methods and from readily available and inexpensive materials.

These and other objects of the present invention will be further explained or will become apparent from the drawing and the following specification and claims.

In the drawing:

FIG. 1 is a fragmentary, vertical sectional view through a furniture article support member illustrating a leg and mount in elevation;

FIG. 2 is an enlarged, exploded, top perspective view of a compensator wedge and disc forming parts of the leg mount constructed pursuant to this invention;

FIG. 3 is an enlarged, vertical, cross-sectional view through a leg mount embodying the principles of this invention; and

FIG. 4 is a top plan view of a compensator wedge.

A leg mount embodying the principles of this invention is designated broadly by the reference numeral **10** and includes an anchor **12** in the form of a commercially available T-nut having a head **14** and an integral, tubular, internally threaded element **16**. Head **14** may comprise an annular flange having a plurality of integral spikes **18** disposed to extend into the supporting medium for anchor **12** to hold the latter in a fixed position. Referring particularly to FIG. 3, it may be seen that anchor **12** is disposed with the head **14** thereof engaging one surface of a support member **20** comprising an integral part of an article of furniture. The tubular element **16** extends through a hole in member **20** and projects toward the opposite surface of member **20**. Element **16** is disposed at an angle with respect to the normal from the lower surface of member **20** so that leg **22** is inclined outwardly for enhancing the stability of the article of furniture.

Leg **22** has an exteriorly threaded stud **24** projecting

perpendicularly from the upper surface 26 of the leg and aligned with the longitudinal axis thereof. Stud 24 is threadably received within element 16 so that the upper end 26 of leg 22 is shifted toward the lower surface of support member 20 upon rotation of leg 22 about its longitudinal axis relative to member 20. Manifestly, spikes 18 serve to hold anchor 12 against rotation and securely hold the leg to support member 20.

Lateral stability of leg 22 is provided by a circular wedge 28 having a lower wall 30 presenting a lowermost face 32 and a pair of radially spaced concentric. integral, upwardly extending, circular sidewalls 34 and 36 respectively. The upper edges of walls 34 and 36 are disposed in a plane which is inclined at an angle with respect to the lower face 32 of wedge 28. Thus, the upper edges present a face 38 adapted to engage the lower surface of support member 20, while face 32 of wedge 28 extends parallel to the upper end surface 26 of leg 22. The angular deviation between faces 38 and 32 of wedge 28 equals the angular deviation of the longitudinal axis of element 16 from perpendicular with respect to the surface of member 20 to which leg 22 is to be attached. Wedge 28, therefore, serves to compensate for the angular deviation caused by the inclination of the leg 22 with respect to support member 20.

Wedge 28 is provided with a central opening 40 adapted to receive stud 24 therethrough so that wedge 28 is sandwiched between the upper end of leg 22 and support member 20 when leg 22 is secured to the article of furniture. It should be noted that the proximal circular wall 36 is of greater diameter than opening 40 so that any projecting portion of element 16 may be received within the enlarged portion adjacent opening 40 so that face 38 presented by the upper marginal surfaces of walls 34 and 36 lie flatly against the proximal surface of support member 20.

An integral, cylindrical lug 42 projecting upwardly from face 38 is adapted to be received within a depression 44 bored in member 20 to prevent relative rotation of wedge 28 with respect to member 20 when leg 22 is rotated for securing the latter to member 20. Wedge 28 must, of course, be properly oriented with respect to the longitudinal axes of element 16 and stud 24 to insure that wedge 28 firmly engages the entire end surface 26 of leg 22 for supporting the latter against lateral forces applied to the leg. Integral connectors 46 formed between walls 34 and 36 of wedge 28 serve to additionally stabilize the latter and yet permit maximum economy of material in the fabrication of wedge 28. It is contemplated that the same may be molded from nylon or similar synthetic resin material by use of injection molding processes or the like. It will be recognized, however, by those skilled in the art that wedge 28 may also be formed from a wide variety of materials capable of withstanding the stresses imparted to the wedge while the latter serves to stabilize the leg 22.

It should be pointed out that the construction of wedge 28 completely separate from support member 20 and leg 22 insures that only compressive forces are imparted to wedge 28. The construction is such that there is no tearing of the wedge from its supporting surface. Rather, any forces imparted to leg 22, either lateral or longitudinal, are transmitted through wedge 28 to the support member 20 as compressive forces. This construction permits the head of the T-nut 12 to be disposed on one side of support member 20 while the leg 22 is on the other side. Accordingly, the strongest possible connection is therefore assured to prevent loosening or tearing of the leg 22 from member 20.

It is contemplated that the support member may form a part of a hassock or the like and that the member 20 will be covered by a layer of padding and fabric or plastic material. Accordingly, the flange 14 of the T-nut 12 may be inclined as illustrated in FIG. 3 wherein a portion of the flange extends upwardly from the upper surface of

member 20. However, it will be recognized by those skilled in the art that it would be a simple matter to countersink the T-nut to provide a relatively smooth upper surface for member 20, the recess provided for the T-nut being filled with plastic wood or otherwise covered in an acceptable manner.

Manufacturing imperfections may result in at least one of the legs 22 being shorter than the remaining legs of a set. In such event, it may be necessary to effectively increase the length of the leg by inserting a disc 48 between the upper end surface 26 of leg 22 and the lower face 32 of wedge 28. The disc, of course, insures that the lower end of leg 22 will extend further outwardly from support member 20 by an amount equal to the thickness of the disc. It will also be recognized that the principles of this invention may be achieved without the use of a disc 48, and for that matter, more than one disc 48 may be utilized as needed to level the article of furniture supported by the legs 22.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In an article of furniture, the combination of:

a support member having a lower, generally flat, horizontal surface;

a bore extending through said member, the axis of said bore being oriented in predetermined disposition relative to the member and inclined from vertical at a predetermined acute angle;

an internally threaded T-nut anchor extending through said member and having an upper head portion engaged with an upper surface of said member and including means engaging said upper surface to prevent rotation of said anchor, and a lower internally threaded barrel portion extending downwardly through said bore and projecting beyond said lower surface and in axial alignment with the axis of the bore;

a wedge element having upper and lower surfaces, the upper surface of the element being in engagement with the lower surface of the member and being provided with a central recess for receiving a lowermost part of said barrel portion of said anchor, the lower surface of the element being generally flat and inclined from the upper surface of the element at an acute angle equal to said predetermined acute angle, said element being in a position of rotation relative to said member disposing the lower surface of the element in a plane perpendicular to the axis of said bore and inclined from horizontal at an acute angle equal to said predetermined acute angle, there being a central opening through said element;

an elongated leg provided with means presenting a generally flat upper end surface therefor disposed in a plane perpendicular to the longitudinal axis of the leg and in engagement with said lower surface of the element; and

an externally threaded stud on the leg extending from said upper surface of the leg in alignment with the longitudinal axis of the leg, said stud extending through said opening in the element and being threadably received within said lower portion of the anchor to secure the leg to the member with the longitudinal axis of the leg aligned with the axis of said bore and inclined from vertical at an angle equal to said predetermined acute angle.

2. In the invention of claim 1, wherein said wedge element is integrally formed and has an annular bottom wall having a lower planar surface; an upstanding, annular, outer side wall on the bottom wall around the outer margin of the latter; an upstanding, annular, inner side wall spaced inwardly from the outer side wall and outwardly from the opening in the bottom wall; and a plurality of spaced, radial connector ribs extending between the inner and outer side walls, the upper surfaces of the outer side wall, the inner side wall and the ribs

lying in a plane inclined at said predetermined acute angle from the plane of said lower surface of the bottom wall.

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