Feb. 20, 1962 G. E. KRISTEK 3,021,638

FURNITURE LEG TIP

Filed Oct. 12, 1960

FIG. 1

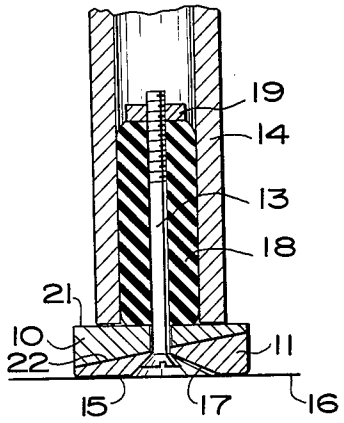
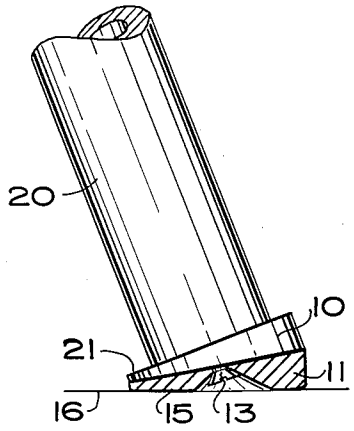
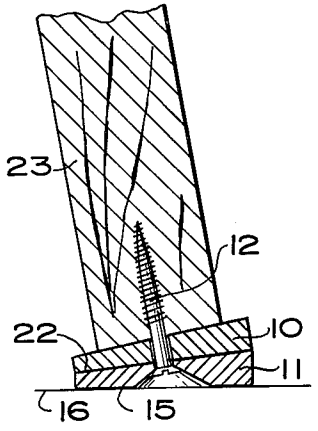


FIG. 3

FIG. 2





GEORGE E. KRISTEK
INVENTOR.

BY Hubert Miller
ATTORNEY

United States Patent Office 3,021,638 Patented Feb. 20, 1962

3,021,638

FURNITURE LEG TIP

George E. Kristek, 837 Carter, Wichita 3, Kans., assignor of fifty percent to Olive M. Kennedy, Wichita, Kans.

Filed Oct. 12, 1960, Ser. No. 62,276
3 Claims. (Cl. 45—139)

This invention relates generally to removable and replaceable glides or tips for furniture legs.

It is an object of the invention to provide a universal tip, that is, one which may be secured to the lower end of a wooden leg, to a tubular metal leg, or to any leg which has a tubular socket at its lower end, regardless of the angle of inclination of the particular leg with respect to the floor surface.

As is generally known the floor contacting surfaces or lower ends of the legs of most furniture lie in a plane which is perpendicular to the longitudinal axis of the leg. If a piece of furniture is so designed that all its legs occupy positions perpendicular to the floor surface supporting the furniture, then any constant thickness tip may be applied to the lower ends of the legs, and their lower surfaces will lie flat against the supporting floor surface. If two or more of the legs of a piece of furniture occupy positions at an acute angle with relation to the floor surface, however, constant thickness tips applied to those legs will not lie flat against the floor surface. As a result only a small portion of the lower surface of the tip is in contact with the floor and the weight transmitted through the leg to the floor is not properly distributed. As a result the small portion in contact with the floor surface may scratch and damage the floor or the floor covering.

It is a primary object of this invention to provide a two part tip which is manually adjustable to compensate for the angle of slope of the lower end of any furniture leg with relation to the horizontal surface of the floor.

The invention, together with other objects, will be more clearly understood when the following description is read in connection with the accompanying drawings, in which:

FIG. 1 is a vertical sectional view of a two part chair leg tip embodying my invention, secured to the lower end of a tubular metal furniture leg, the leg being disposed perpendicular to the floor surface;

FIG. 2 is a fragmentary side view of a similar type furniture leg, the lower end surface of which would normally meet the floor surface at an acute angle due to the slope of the leg, a two part tip embodying my invention being shown secured to the lower end of the leg, one part of the tip being shown in vertical section; and

FIG. 3 is a vertical sectional view showing a tip embodying my invention secured to the lower end of a wooden chair leg, the leg meeting the floor surface at an angle more nearly perpendicular than the leg shown in FIG. 2.

Referring now to the drawings, a tip or glide embodying my invention includes two cooperating relatively thin washer-like members 10 and 11, having registering central perforations to loosely receive an anchoring screw 12, or bolt 13. The plan shape of these members is optional. They are illustrated as being circular, and are preferably of a molded tough plastic material, such as nylon. They may also be made of metal, such as aluminum or stainless steel. These members are wedge shaped in vertical section, as shown. The sloping surfaces of the two discs 10 and 11 preferably slope at an identical angle. Thus when the sloping surfaces of the two discs are placed flat against each other and the discs are oriented to the positions shown in FIG. 1, the upper surface 21 of disc 10 is parallel to the lower or floor contacting surface 15 of disc 11. Assuming that the lower end of tubular furniture leg 14 lies in a plane perpendicular to the longitudinal axis of that leg, the composite tip with the two discs oriented to the relative positions above described, presents a floor contacting surface 15 which is also perpendicular to the longitudinal axis of the leg. Thus all of surface 15 contacts the floor surface 16 and serves to properly distribute the weight applied through the leg 14.

As shown in FIG. 1 the lower surface of floor contacting disc 11 is provided with a countersunk seat 17 which seats a slotted flat head bolt 13. Bolt 13 passes longitudinally through a flexible rubber sleeve 18. An enlarged nut 19 is threaded on the upper end of the bolt. The normal exterior diameter of the sleeve 18 is such as to permit it to fit snugly within the cylindrical bore in the lower end of the chair leg. When the bolt is tightened in nut 19 by means of its slotted head, the rubber sleeve is compressed endwise causing it to expand laterally and to frictionally grip the interior wall of the chair leg, thus firmly anchoring the composite tip on the lower end of the chair leg. The bolt also applies an axial compressive force to the two discs 10 and 11, urging them into firm frictional contact.

If the furniture leg 20, FIG. 2, slopes at the angle shown, and if its lower end is also in a plane perpendicular to the longitudinal axis of the leg, it is only necessary to relatively rotate discs 10 and 11 until the lower surface 15 of disc 11 seats flat against the floor surface 16. The bolt 13 is then screwed inwardly to anchor the tip to the leg. The tip is thus also capable of properly distributing the weight transmitted through an inclined chair leg to the floor surface 16.

It will be seen that by properly orienting the discs 10 and 11 with relation to each other the upper surface 21 of disc 10 can be adjusted to lie at any desired angle with relation to the floor contacting surface 15 of disc 11, within the limits of the angle of slope 22.

FIG. 3 illustrates the tip applied to the lower end of a wooden furniture leg 23. The angle of slope of this leg with relation to the floor surface 16 is less than the angle of slope of the leg shown in FIG. 2. Thus the discs are in different relative positions with relation to each other to assure that floor contacting surface 15 of disc 11 lies flat against floor surface 16, to properly distribute the weight transmitted to the floor.

In attaching the composite tip to a wooden furniture leg, a flat head screw 12 is substituted for the bolt 13 and rubber sleeve 18. When the discs are properly oriented with relation to each other to compensate for the angle of slope of the leg, screw 12 is tightened and thus maintains the relative positions of the two discs.

From the above it will be seen that the invention provides a tip or glide which is adjustable to compensate for the angle of slope of the leg of any piece of furniture. The tip thus always provides a flat surface against the floor and eliminates scratching and damage to polished floors, as well as damage to floors which are carpeted or otherwise covered.

Having described the invention with sufficient clarity to enable those familiar with this art to construct and use it, I claim:

1. A tip for attachment to the free end of a leg of furniture comprising: two relatively thin washer-like members each having a fastener-receiving bolt or screw hole formed centrally therein, each of said members further having one planar surface perpendicular to its central longitudinal axis and having a second planar surface which slopes at an acute angle to its other planar surface, said members being arranged in superposed relation with their sloping surfaces in flat contact; and a threaded fastener in engagement with and fitting through said holes in series for anchoring the members in superposed position generally concentrically with respect to one another and to the lower end of said furniture leg, and for simultaneously applying a compressive force against their surfaces for

frictionally holding them in a selected position of relative rotational orientation with respect to one another and to the end surface of said lower end of the furniture leg.

2. A furniture leg tip or glide comprising, in combination with a leg of furniture, two cooperating relatively thin members each having two opposite flat surfaces, each of said members being wedge-shaped in longitudinal section; registering fastener-receiving apertures formed centrally in the respective members; and a fastener fitting in said apertures of the members so as to align them establishing a common central axis, said fastener having means connecting it internally to said leg of furniture so as to anchor said members in superposed position against the lower end surface of said leg and to simultaneously apply a compressive force to urge the upper surface of the lower member into firm frictional contact with the lower surface of the upper member, to maintain their relative rotational orientation with respect to one another and to said leg.

3. An inclined furniture leg construction adapted to fit flush with a horizontal floor surface comprising: a two-member tip of which the two members may be rotated relatively about a common axis to change the included intersection angle of the planes in which their respective remote surfaces lie and of which the members each consist of a relatively thin washer-like member, each of said members being provided with two opposite planar surfaces which lie in planes which intersect at an acute angle and further provided with a central bolt hole, a furniture leg with a hollowed interior and arranged at an angle of inclination to said horizontal floor surface, a bolt having a distal end extending into the hollow interior of said leg and arranged with a proximal end fitting within the central bolt holes of said members to anchor them in superposed position against the lower end of said inclined furniture leg, and to simultaneously apply a compressive force against their remote surfaces to urge their adjacent surfaces into firm frictional contact to maintain their selected relative positions of orientation with respect to one another and to said leg and, hence to maintain the included intersection angle of the planes in which their respective remote surfaces lie, a nut threaded on the distal end of said bolt for placing same under axial tension, and a rubber sleeve within said leg and clamped between the nut and washer members in surrounding relation to said bolt so as to expand into tight frictional engagement with the interior surface of the leg, thereby anchoring said members under the compressive force aforesaid so as to maintain said positions of orientation.

References Cited in the file of this patent

UNITED STATES PATENTS

2,757,407	Kramcsak	Aug. 7, 1956
2,865,133	Hoven et al.	Dec. 23, 1958

FOREIGN PATENTS

13,876	Great Britain	June 8, 1910
22,815	Austria	Jan. 25, 1906