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ADJUSTABLE SUPPORTS

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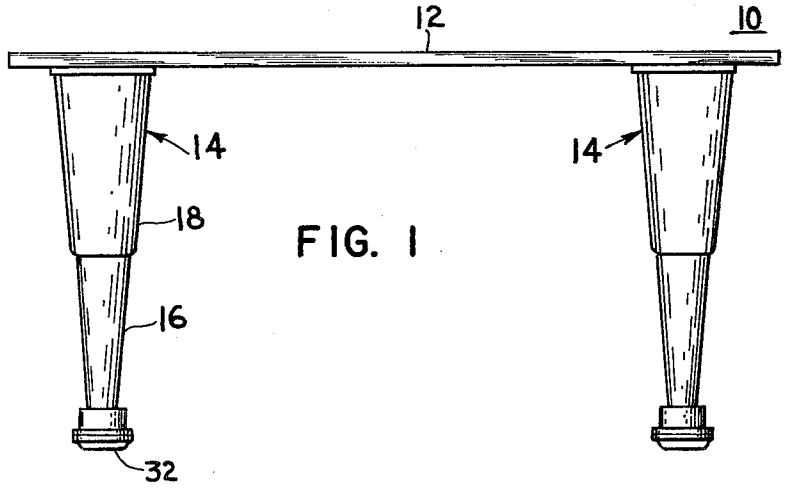


FIG. 1

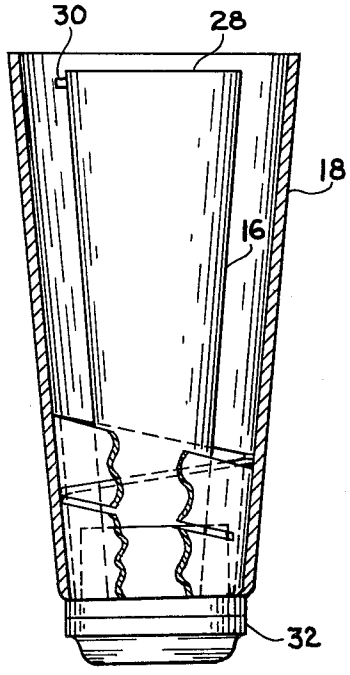


FIG. 2

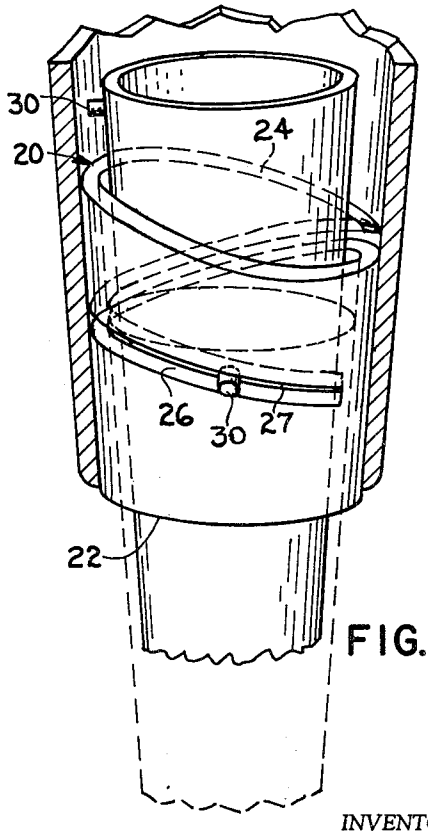


FIG. 3

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ADJUSTABLE SUPPORTS

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This invention relates to adjustable supports and particularly to adjustable legs for tables and other supporting structures.

The principles of the invention are particularly applicable to household furniture such as tables, and the apparatus of the invention may be used to convert a low table of the type known as a coffee or cocktail table to a higher table such as a card or dining table. At the present time, no simple, sturdy, and efficient construction exists for an adjustable leg which may be used for the above-mentioned purpose.

Accordingly, the objects of the present invention are concerned with the provision of an adjustable leg which is simple in construction and in use and which is suitable for maintaining an article supported thereby in a plurality of positions of elevation.

In brief, a table leg embodying the principle of the invention comprises two tubular members, an inner tube and an outer tube, which are telescoped on each other. The inner member is slidably positioned in the outer member and is adapted either to be entirely concealed therein in the collapsed position, or only partially contained therein in the extended position. The outer tube carries a small tubular insert in which the inner tube is adapted to be locked when the leg is extended. The locking arrangement comprises a helical track in the insert in which a pin secured to the inner tube is adapted to be engaged. The foregoing principles may be readily adapted to a collapsible leg including more than two telescoping members.

The invention is described in greater detail by reference to the drawing wherein:

FIG. 1 is an elevational view of a table having legs embodying the principles of the invention;

FIG. 2 is an enlarged elevational view partly in section of a table leg of FIG. 1 in the collapsed condition in which the table is used as a low cocktail table or the like; and

FIG. 3 is a perspective view of the leg of the invention illustrating the relationship of the parts as the leg is extended to its expanded form.

The principles of the invention may be utilized to provide an adjustable support for maintaining many types of articles or apparatus at different levels of elevation. Such apparatus may include tables, cameras, and the like. The invention is particularly suited for supporting a table both as a low coffee or cocktail table or as a normal elevated card or dining table. Such a table 10 is shown in FIG. 1. The table 10 includes a generally large-area top 12, to the bottom surface of which are suitably secured a plurality of collapsible legs 14 embodying the invention.

The legs 14 are substantially identical and include two telescoping hollow, tubular members, an inner member 16 and an outer member 18, which are preferably tapered to provide a pleasing appearance. The inner and outer members are preferably hollow tubes which are designed so that in the extended position the taper of the legs appears to be uniform downwardly from the upper outer member to the lower inner member, and the entire leg appears to comprise a single tapered tubular member.

The outer member 18 carries within it at its lower end a hollow tubular insert 20 which is brazed or otherwise sealed to the outer member. The tubular insert 20 includes an open lower end 22 which is substantially aligned with the lower end of the outer member, and an open inner end 24 which is slanted at an angle to the axis of

the insert. The insert is tapered and its diameter decreases gradually from its inner end to its outer end. In addition, a track or channel 26 is formed in the wall of the tubular insert. The channel 26 is generally helical in form and originates at the lowest point at the top of the slanted inner end 24 of the insert and extends in a gentle curve along the wall of the insert toward the outer end 22. In effect, the entire surface of the inner tapered end of the insert forms a portion of the track since it merges smoothly and gradually with the portion of the track which is cut in the wall of the insert. The length of this helical channel or track extends approximately beyond the middle of the insert but preferably not to the lower end 22. Thus, since approximately the lower half of the wall of the insert is solid, the insert has considerable strength and the extended leg has considerable rigidity.

The inner tubular member 16 has an inner end 28 which is tapered and which is so dimensioned that it is adapted to form a tight fit with the insert 20 when the leg 14 is in the extended position. Near the end 28, the inner member 16 carries a pin 30 which projects outwardly from the surface thereof and is adapted to engage the track when the leg is being adjusted to its extended form. The pin 30 has a diameter only slightly smaller than the width of the helical track so that it can pass along the track. The inner member carries at its outer end any suitable ornamental foot support 32 on which the leg may rest. The ornamental support 32 is dimensioned to provide a press fit within the insert 20 when the leg is collapsed, or any suitable gripping means, for example a ball and socket arrangement, may be provided between the two parts.

When the leg 14 is in the collapsed position, the inner member 16 is completely concealed within the outer member 18, and the lower end of the outer member rests on the support 32 which is secured thereto. The table is thus supported in its lowered position. If it is desired to raise the table, the inner member 16 is pulled out of the outer member 18 until the pin 30 strikes the slanted surface of the inner end of the insert. Then, rotation of the inner tubular member either clockwise or counterclockwise, depending on the orientation of the track 26, causes the pin to follow the contour of the inner end of the insert until it enters the track and follows along the track until the upper or inner end of the member 16 is wedged in the insert. In this position, the parts are, in effect, locked together by the downward pressure of the upper wall 27 of the track 26 against the pin 30. Thus, the inner member is held securely extended in the outer member, and the table is supported in its raised position.

The helical track is made longer than is necessary, as shown, so that, should some wear occur on either pin 30 or the track 26, then the inner member 16 may be turned sufficiently so that the pin moves to a new position in the track and once again the downward locking pressure of the insert against the pin is maintained.

The operation of collapsing the leg is the opposite of extending it, and is accomplished by twisting the tubular members 16 and 18 in opposite directions to each other so that the pin 30 moves upwardly in the track 26 to the inner slanted end of the insert. When the pin leaves the track, the members 16 and 18 are telescoped on each other and are held together by the insertion of the ornamental support 32 in the insert 20.

It is to be understood that modifications may be made in some of the constructional features of the invention while remaining within the scope of the invention. Thus, for example, it is clear that the leg described above may be adapted to comprise more than two telescoping sections, if desired.

What is claimed is:

1. An adjustable table leg including two tapered tubular members telescoped over each other so that one is an inner member and one is an outer member, the tapers being such that when the leg is extended it has a substantially uniform taper over its entire length, a tubular insert secured within said outer member adjacent to the lower end thereof, said insert being tapered and so dimensioned that it forms a tight fit with the upper end of said inner member when the leg is in its extended form, the inner end of said insert being slanted at an angle to its longitudinal axis, a helical track in the wall of said insert and extending from the slanted inner end thereof to about midway along the length of said insert, the slanted end of said insert merging smoothly with the upper end of the track, a pin secured to the upper end of said inner member and adapted to ride in said track and be fixed near the end of said track when said leg is extended, and a foot secured to the lower end of said inner member and adapted to be positioned within the outer end of said insert when the leg is collapsed.

2. An adjustable support leg including two tubular members telescoped over each other so that one is an inner member and one is an outer member, a tubular insert mounted within said outer member adjacent to the lower end thereof, said insert being tapered, the upper end of said inner member also being tapered and so dimensioned that it forms a tight fit therewith when the leg is in its extended form, and auxiliary two-part means, one associated with said insert and one associated with said inner member, for mechanically interlocking said insert and said inner member when the leg is extended, said separate means providing mechanical coupling between said two tubular members and the tight fit between said members providing frictional engagement between them, said separate means comprising a track in said insert and a pin secured to said inner member and adapted to ride in said track.

3. The leg defined in claim 2 wherein the inner end of said insert is slanted at an angle to the longitudinal axis of said legs and the lower end thereof continues into a helical track in the wall of said insert, and a pin secured to said inner member and adapted to be secured in said helical track when the leg is extended.

4. An adjustable table leg including two tubular members telescoped over each other so that one is an inner member and one is an outer member, a tubular insert secured within said outer member adjacent to the lower end thereof, said insert being tapered and so dimensioned that it forms a tight fit with the upper end of said inner member when the leg is in its extended form, said upper end of said inner member also being tapered and providing large-area surface contact with said insert, the inner end of said insert being slanted at an angle to its longitudinal axis, a helical track in the wall of said insert and extending from the slanted inner end thereof to about midway along the length of said insert, the slanted end of said insert merging smoothly with the upper end of the track, and a pin secured to the upper end of said inner member and adapted to ride in said track and be locked in position near the end of said track when said leg is extended, said inner and outer members thus being adapted to be secured together by frictional surface contact and by direct mechanical interlocking means.

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