ADJUSTABLY EXTENDABLE AND LOCKABLE TABLE LEG OR THE LIKE

William R. Fryckholm, San Lorenzo, Cali., assignor of one-tenth to Gadget-of-the-Month Club, Inc., Los Angeles, Cali., a corporation of California

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This invention relates to tables and to tables with detachable legs, and more particularly to tables made with folding legs adapted for telescoping and adjustment in length and further adapted for attachment to tables tops of any type and size without the use of special tools or equipment.

In the past there have been many collapsible tables but none which provided adjustability in the length and position of the legs within the range envisioned by this invention.

A table equipped with legs constructed according to this invention could even be used as a lap table or as an easel with one edge level with the work surface and an opposite edge elevated to substantially the height of a conventional coffee table. In addition to being collapsible and easily stored, a table utilizing the extendable legs of my invention could be used for a variety of purposes including a bed table, a cocktail table, a child's adjustable table for a nursery room or school, a utility Sunday school room table, a bedside table, or it could be adjusted to suitable heights for card playing and for dining.

In this manner a single table might cover the needs of the sick room, hotel room, auto court, resort, trailer and home. A table having three or four legs of the type envisioned by my invention would be ideal for camping trips and expeditions since the legs could be individually adjusted on irregular terrain to provide a substantially horizontal table top at any desired height above the average level of the ground.

Therefore, the many different purposes for which tables are used have made necessary the use of equally as many different tables in the home and other places, and it has been with this in mind that the present invention, which will be seen to have a number of important objects, has been made.

One important object of the present invention is the provision of a table adapted with light weight easily adjustable legs.

Another important object of the present invention is the provision of a table leg of the character described which will also be movable into parallel alignment with the table top.

A further object of the present invention is the provision of a light weight table leg of the character described which will be both telescopic in length and foldable against the underside of the table top.

A still further object of the present invention is the provision of a table leg of the character described which is easily attached to the undersurface of any table top without the use of special tools or equipment.

An additional important object of the present invention is the provision of a table leg of the general character described which is adapted for adjustment in length yet, although made of light weight material, will be completely rigid longitudinally.

Another object of the present invention is the provision of a table leg of the character described which will have positive locking means to position the leg at the height desired and to position the leg in the downwardly extended position of use.

In brief, the present invention comprises a table having a flat planar surface of predetermined dimensions attached to which is a plurality of not less than three legs of the particular character covered by this invention. Each of the legs constructed according to this invention consists of a pair of interfitting semicylindrical longitudinally extended channel members, each being semi-circular in cross sectional conformation and terminated along its longitudinally extended edges in inbent coplanar flanges with those of the inner member being extended beyond one end thereof.

The inner of the two channel members has a longitudinally extended U-shaped groove intermediate of its longitudinal edges and a plurality of holes in the bottom of the groove to receive a spring loaded plunger disposed in the other channel member. The flat bottom surface of the U-shaped groove is extended outwardly similarly to the extensions of the inbent flanges.

The three extensions from one end of the inner channel member serve as means for attaching the member to a transverse shaft rotatably retained in two journal members which, in turn, are removable attached to the undersurface of the table top. A spring clip having a notched detent therein is positioned between the journal members and engages an axially aligned outward extension of the shaft to hold the leg downwardly at right angles to the undersurface of the table top.

The semicylindrical outer channel member may be drawn downwardly relative to the inner member which is attached to the rotating shaft, and a spring loaded lock pin is entered in any particular hole in the inner member providing the table height desired.

Other important objects of my invention will be apparent to persons familiar with the general art upon reading the following detailed description of one preferred embodiment thereof with reference to the accompanying drawings, in which:

Figure 1 is a perspective end elevational view of the table constructed according to my invention as it would appear when the legs are equally extended in position for normal use.

Figure 2 is a similar perspective view from the same end showing the table with the legs at one end folded against the undersurface of the table when being utilized as an easel.

Figure 3 is a side elevational perspective view of the table with two end legs folded under the table permitting its use as an easel similarly to that of Figure 2.

Figure 4 is an underview of the table showing the legs telescoped into compact form and rotated against the underside of the table.

Figure 5 is a top plan view of the outer channel member of a typical leg.

Figure 6 is a bottom view of the same channel member taken from the opposite side as that in Figure 5.

Figure 7 is a top plan view of the inner channel member showing the locations at one end of its inbent flanges and its central longitudinal groove.

Figure 8 is an underview of the channel member shown in Figure 7 showing the coplanar inbent flanges and the conformation of the underside of the member.

Figure 9 is a top plan view of the two channel members interfitted one within the other.

Figure 10 is a section view taken through the center of the plunger lock member along the broken line 10—5----10—S in Figure 9 and seen from the direction of the arrows;
Figure 11 is a bottom view of the assembled channel members taken in the direction of the arrows along the line 11-S—11-S in Figure 3 and showing the extensions of the inner channel attached to the pivotal shaft and journal members;

Figure 12 is a through section taken along the line 12-S—12-S in Figure 11 as seen from the direction of the arrows.

Reference is again made to Figure 1 in which the numeral 10 designates a table constructed according to my invention with its flat top 11 and the lower portions of its legs 12, 13, 14 and 15 respectively, and the upper portions of its legs 16 and 17. In Figure 2 the legs 14 and 17 are designated by the numeral 24 and for the sake of clarity, these views, although generally top plan views, have been shown slightly in perspective to show the arcuate contour of the semicylindrical channel and their inbuilt flanges as seen at 25 and 26 in Figure 5.

The top of the spring loaded lock member is seen at 27 in Figure 5 and the underside of the lock at 28 in Figure 6 which is an underview of the same channel member showing more clearly the inbuilt flanges 25 and 26 and the reverse position of the arcuate ends as at 28 and 29.

In Figure 7 one of the inner channel members interfiting with that shown in Figures 5 and 6 is shown generally at 30 together with the extension of the central grooved section 22 as seen in Figure 4. Also the extended portions of the inbuilt flanges are seen at 34 and 35 in their respective positions in this figure and in Figure 8 which is a view of the underside of the same channel member. Also seen in Figures 7 and 8 are several of the central apertures in the band 22 which are spaced longitudinally of the band and adapted to receive the plunger of the lock member 27 seen in Figure 5.

Figure 9 shows the two channel members assembled with the outward extensions of the inner member seen at 32 and 34 and 35 of the lock member 27 and the inbuilt ends of the inner member 30 positioned at 34 and 35 in Figure 9 where they are seen to interfit with flanges 25 and 26 of the outer channel member 24.

Figure 10 is a cross section taken along the line 10-S—10-S in Figure 9 as seen from the direction of the arrows and shows the semicircular sectional contour of the channel 30 and the manner in which it interferes with the sleeve member 24; also seen are the inbuilt flanges 25 and 26 of the sleeve member and 34 and 35 of the inner member. A cross section of the button or cap portion of the plunger type leg extension lock is shown at 27 together with the inwardly extending pin 27-K thereof and the normally closed spring member 27-P which exerts bias to draw the pin 27-K inwardly of the aperture 31 in the longitudinally extended groove 22 of the inner channel member 30.

Fixedly attached to the inner surface of the sleeve channel 24 is a plug portion 27-R which forms a reinforcement for the pin member 27-K of the lock assembly 27, and also serves as a stabilizing guide slideable within the U-shaped central groove 22 in the inner channel member.

The typical manner in which one of the legs is attached to its respective shaft member is shown in Figure 11 which is a sectional view taken along the line 11-S—11-S in Figure 3 and seen from the direction of the arrows. In Figure 11 the shaft 21 is supported by the journal member 36 attached by fasteners such as 37 to the underside of the top which is shown in section at 40, and by the second journal member 38 which is held by fasteners such as 39 to the undersurface 18 of the table top 40. Also seen in this figure are the inwardly bent longitudinally extended flanged members 25 and 26 of the inner member 30 having extensions 34 and 35 fastened by fasteners 44 and 45 to the shaft member 21.

Also seen in Figure 11 is the extension of the shaft, a stud member 41, which is adapted to engage the spring clip detent 42 both of which are better seen in Figure 12 which is a sectional view taken along the line 12-S—12-S as seen from the direction of the arrows in Figure 11. On Figure 12 the detent in the spring clip 42 is clearly seen together with the stud extension 41 of the shaft member 21.

The spring 23 is attached by the fastener 43 to the undersurface 18 of the table top shown in section at 40. Also seen in this figure is a corresponding side view of the lock member 27 with its spring member 27-P. As can be seen, the leg member 24 is prevented from rotating toward the left relative to its shaft 21 by the detent 42 in the spring clip 23 which may be either pressure on the leg 24 or pressure inwardly on the leg 24 permits the leg to be rotated against the inner surface 18 of the table top 40. The lock 27 is operated by pulling the cap member outwardly thereby extending the spring 27-P until the tip of the stem 27-K comes inwardly of the plug 27-R and clear of the aperture 31 in the longitudinal channel 22 of the inner member 30.

As has been said, attachment of a set of the legs to the undersurface of any table top is a relatively simple matter accomplished by entering screws such as 37 and 39 through the journal members 36 and 38 for each leg into the bottom of the table top and attaching the spring clip such as 23 by means of the screw fasteners 43 in a position so the detent 42 of the spring 23 falls in proper alignment with the projection 41 on the shaft 21 of the leg member.

As can readily be seen from the figures in the drawings, the advantages of this leg construction are that the sections of the leg telescope one within the other and lock in any desired position and, secondly, that the leg is rotatable relative to the undersurface of the table and locks firmly in the downwardly extended position.

Obviously, legs of suitable range of extension would be used according to the intended purpose of the table. All the legs are extendable approximately seventy-five percent of the completely telescoped length; consequently legs of eight to ten inches in telescoped length would be employed for generally low tables, and legs of eighteen to twenty inches in telescoped length would be employed on tables intended for use in playing cards and dining. Numerous modifications and variations of the present invention will occur to those skilled in the art after a careful study hereof. All such, properly within the basic spirit and scope of the present invention are intended to be included and comprehended herein as fully as if specifically described, illustrated and claimed herein.

The exact compositions, configurations, constructions, relative positionings, and cooperative relationships of the various component parts of the present invention are not critical, and can be modified substantially within the spirit of the present invention.

The embodiments of the present invention specifically described and illustrated herein are exemplary only, and are not intended to limit the scope of the present invention, which is to be interpreted in the light of the prior art and the appended claims only, with due consideration for the doctrine of equivalents.

1. An extendable leg for a table, comprising: a pair
of interfitting channellar members slidable relative to each other, the inner of said channellar members having a plurality of spaced apertures disposed centrally and longitudinally thereof, the outer of said channellar members having a plunger member entered through a perforation in the center adjacent one end thereof and extendable inwardly through any of said spaced apertures in said inner channellar member, said inner member having a plurality of strap sections extended longitudinally from one end thereof for attachment of said leg to the underside of a table.

2. An extendable leg for a table, comprising: a pair of interfitting relatively telescopic channel members, said channel members being semi-cylindrically conformed and semi-circular in cross sectional contour and having inwardly extended longitudinally disposed edge portions, the inner of said interfitting channel members having a centrally and longitudinally disposed U-shaped groove extending the length thereof; and locking means for securing said channel members in a plurality of relative lineally extended positions.

3. An extendable leg for a table, comprising: a pair of interfitting relatively telescopic channel members, said channel members being semi-cylindrically conformed and semi-circular in cross-sectional contour and having inwardly extended longitudinally disposed edge portions, the inner of said interfitting channel members having a centrally and longitudinally disposed U-shaped groove extending the length thereof and having a plurality of fastening strap sections longitudinally extended from one end thereof; and locking means for securing said channel members in a plurality of relative lineally extended positions; said outer one of said interfitting channel members being provided with an inwardly disposed plug portion dimensioned to fit slidably within said centrally disposed longitudinal groove in said inner channel member.

4. The invention in accordance with claim 3 in which said locking means comprises: a plunger assembly including a cap and pin entered through an aperture in the outer surface of said outer channel member and through said plug portion disposed inwardly thereof, and a spring member biasing said cap and pin inwardly of said aperture; a plurality of spaced holes disposed in longitudinal alignment through the inner surface of said U-shaped groove extended longitudinally in said inner channel member, each of said holes being adapted to receive said pin of said lock assembly when positioned in alignment therewith.

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