

March 14, 1967

R. O. BLINK ETAL
ADJUSTABLE TABLE LEGS

3,309,050

Filed May 6, 1965

2 Sheets-Sheet 1

Fig. 1

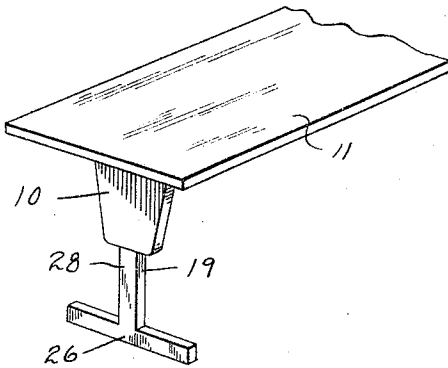


Fig. 2

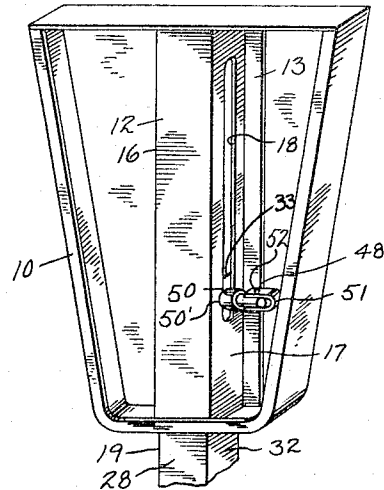


Fig. 4

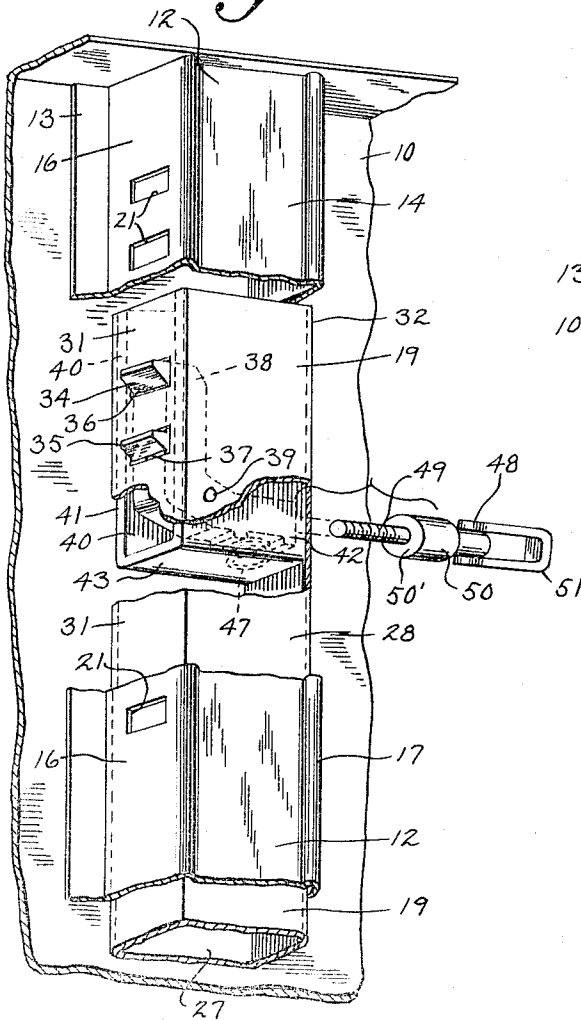
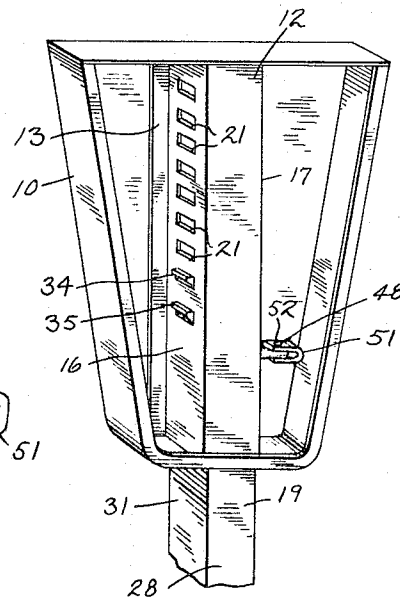


Fig. 3



INVENTORS
ROBERT O. BLINK
FREDERICK H. HOLZ
WILLIAM C. LUTZKE
BY

Morsell & Morsell
ATTORNEYS

March 14, 1967

R. O. BLINK ET AL

3,309,050

ADJUSTABLE TABLE LEGS

Filed May 6, 1965

2 Sheets-Sheet 2

Fig. 5

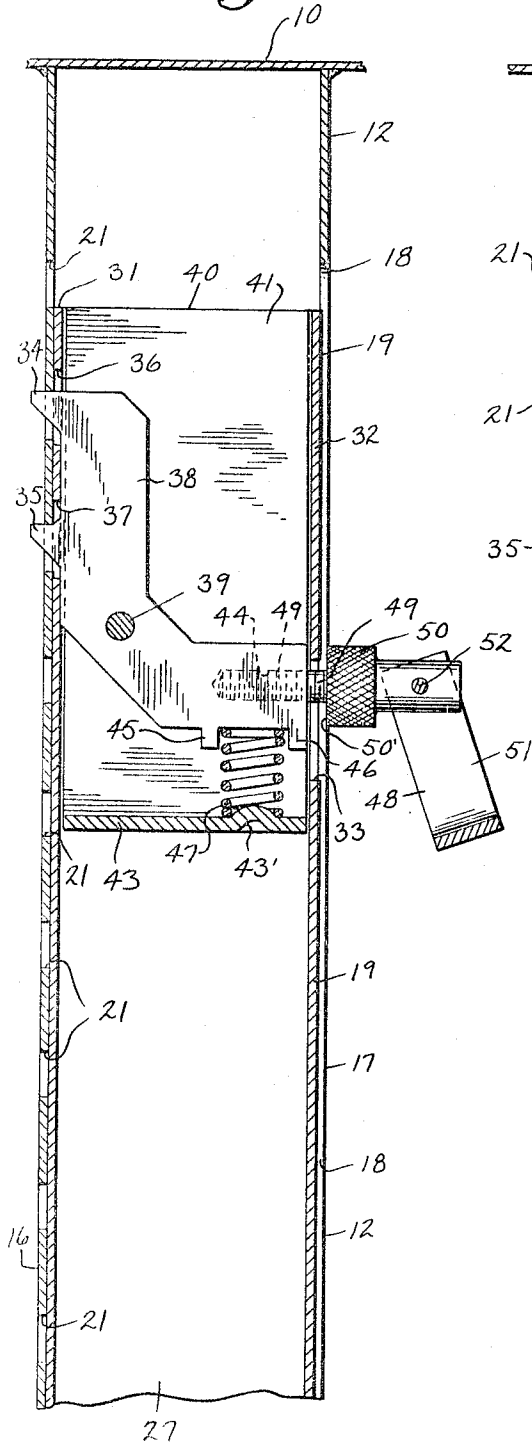
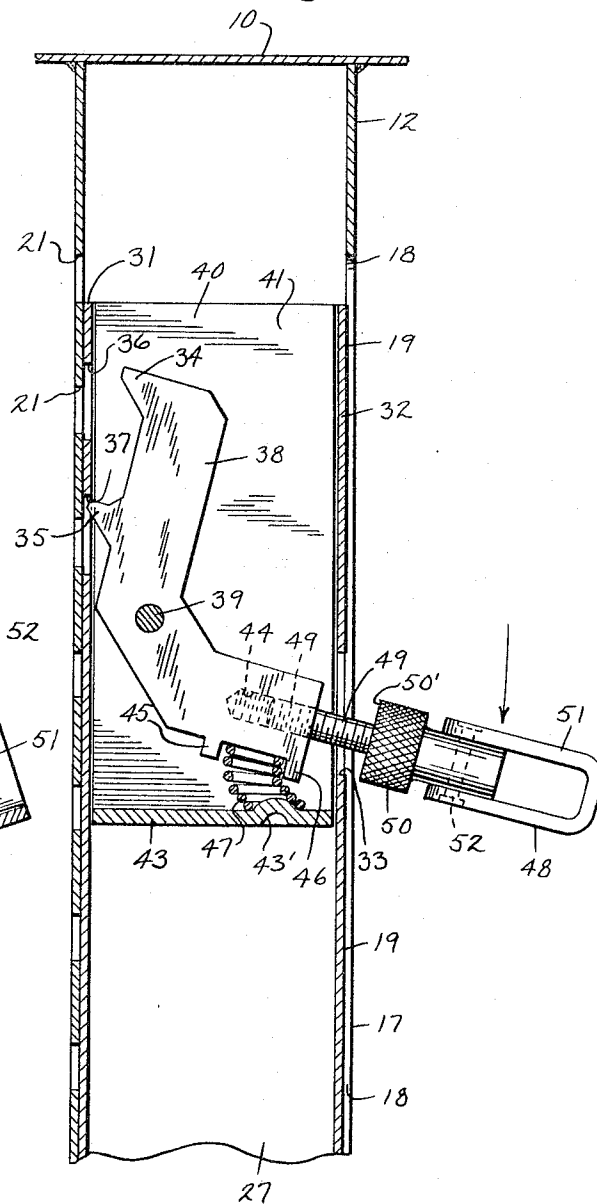


Fig. 6



INVENTOR
ROBERT O. BLINK
FREDERICK H. HOLZ
WILLIAM C. LUTZKE

BY

Morsell & Morsell
ATTORNEYS

3,309,050

ADJUSTABLE TABLE LEGS

Robert O. Blink, Milwaukee, Frederick H. Holz, Wauwatosa, and William C. Lutzke, Milwaukee, Wis., assignors to Mitchell Manufacturing Company, Milwaukee, Wis., a corporation of a Wisconsin

Filed May 6, 1965, Ser. No. 453,698

6 Claims. (Cl. 248—188.2)

This invention relates to improvements in adjustable table legs, and more particularly to a table-supporting leg having novel means therein permitting the table to be adjusted and set at a desired height.

The principal object of the present invention is to provide a table leg having novel height adjustment means, as described, which novel leg assembly is particularly well suited for use with elongated tables of the type used in offices, conference rooms, classrooms, etc., as well as with other types of tables and furniture pieces.

A further object of the present invention is to provide a novel and improved table leg structure which is ornamental and attractive in appearance, the height adjustment and locking mechanism being unobtrusive and substantially hidden from view.

Further important objects of the invention are to provide a novel adjustable table leg structure which is simple and reliable in operation, which is sturdy and dependable, and which is relatively inexpensive to manufacture and assembled.

With the above and other objects in view, which other objects and advantages will become apparent hereinafter, the invention comprises the adjustable table-supporting leg illustrated and described, and any and all modifications or variations thereof as may come within the spirit of said invention, and within the scope of the appended claims.

In the accompanying drawings, wherein there is shown one preferred embodiment of the invention, and wherein the same or similar reference numerals designate the same or similar parts in all of the views:

FIG. 1 is a fragmentary perspective view of a table provided with the improved leg structure;

FIG. 2 is a fragmentary perspective view of the adjustable leg assembly;

FIG. 3 is another perspective view of the structure shown in FIG. 2;

FIG. 4 is an enlarged fragmentary perspective view with portions of the leg broken away to show the locking mechanism;

FIG. 5 is a vertical sectional view showing said mechanism in its locking position; and

FIG. 6 is a similar vertical sectional view showing said locking mechanism in its retracted condition.

Referring now more particularly to FIG. 1 of the drawings, illustrated therein is a fragmentary portion of a conference table utilizing the novel adjustable leg assembly comprising the present invention, the opposite end of said table being provided with an identical leg (not shown), of course. It is to be understood that while the present leg unit is particularly well suited for use in tables of this general type, said leg will also have utility in other types of tables and various furniture pieces, and the invention is by no means to be limited in this respect.

As hereinabove described, the principal purpose of the invention is to provide a novel leg structure which is not only attractive in appearance, but which leg can be readily adjusted and set at a desired height, and locked in said position. Thus, a table can be set at one height for use in a grammar school classroom or library, or it can be raised for use as an office conference table or the like, thereby greatly increasing the versatility of said table.

As will be seen, the present leg assembly includes an

upper member 10 which is fixed to the underside of the table top 11 adjacent the end thereof, and which upper leg member extends downwardly a substantial distance below said table top. In the illustrated form of the invention said upper leg portion 10 is tapered downwardly to provide an attractive, modern design, but it is to be understood that the shape and ornamental appearance of said member can be varied as desired. Similarly, while the illustrated member 10 is preferably formed of steel finished with high grade enamel, or chrome plate, and is provided with rolled edge flanges to provide increased strength and a neat appearance, the material and structural design of said member can be varied to suit particular table requirements, and the invention is not to be limited in this respect.

With reference now to FIGS. 2-4, welded or otherwise rigidly secured on the inner surface of the member 10 is a rectangular tube 12 which is centered on said member 10 and which extends the entire height thereof, said tube preferably being provided with side extensions or flanges 13 on its back face to facilitate the welding of the same to the member 10. Said tube includes a pair of side wall portions 16 and 17, and a front wall 14. Formed in one side wall 17 of said rectangular tube is an elongated slot 18 (FIG. 2), and formed in the opposite side wall 16 are a plurality of vertically-spaced rectangular openings 21 (FIG. 3), the number of which openings can be varied to suit the size or desired range of adjustability of the particular table, as will be described.

Slidably fitted within said rectangular tube 12, and extending telescopically from the lower end thereof, is an inner rectangular tube 19 having a transverse base bar 26 thereon (FIG. 1) which rests upon the floor to provide the table-supporting means. Said inner tubular member 19 includes a back wall 27, front wall 28, and a pair of side or end walls 31 and 32. Formed in the upper portion of the side wall 32 is a short, vertical slotted opening 33 (FIGS. 2, 5 and 6) which is adapted to register with the outer tube slot 18, and formed in the upper portion of the opposite side wall 31 of said inner tubular member are a pair of rectangular openings 36, 37 (FIGS. 4-6), which are registrable with selected pairs of openings 21 in the outer tube.

Welded or otherwise rigidly secured within and adjacent the upper end of the inner tubular member 19 is a U-shaped housing or bracket 40 including a back wall 41, front wall 42, and a bottom 43, the ends of said bracket being open, and carried within said bracket is an L-shaped pawl 38 (FIGS. 4-6). Said pawl is pivotally mounted on a transverse pin 39, and formed on the upright neck portion thereof are a pair of vertically-spaced teeth 34 and 35 which are insertable into the registering rectangular openings in the telescopic tube members 12 and 19, as will be hereinafter described. Said pawl is provided with dual teeth 34, 35 in lieu of the single-tooth design of conventional pawls, in order to minimize the possibility of said pawl teeth being sheared off, even when extremely heavy loads are placed on the table.

The lower, horizontal arm of said L-shaped pawl 38 has a tapped bore 44 (FIGS. 5, 6) in its outer end which is registrable with the aforementioned longitudinal slots 18, 33 in the interfitting tube members 12 and 19, and formed on the underside of said pawl are a pair of spaced shoulders 45, 46. Said lower pawl arm is spaced above the bottom 43 of the U-shaped bracket 40, and fitted within said shoulders and bearing against the underside of said pawl and bracket bottom 43 is a coil spring 47, there being a mounting nub 43' formed in said bracket bottom therefor. Said spring is designed to yieldably urge the lower pawl arm upwardly about the pivot 39, thus urging the teeth 34, 35 into the projecting position illustrated in FIG. 5. As is shown in FIG. 6, pivotal movement of said pawl

in the opposite direction, against the tension of said spring 47, functions to retract said teeth, as will be hereinafter described in greater detail.

The complete assembly characterizing the invention also includes a handle unit, which is designated generally by the numeral 48. Said handle includes a threaded shaft 49 which is screwed into the tapped bore 44 and in the end of the pawl 38, a cylindrical body portion 50, and a handle 51 which can be pivoted about its mounting pin 52 from an outwardly-projecting position to an unobtrusive, upwardly- or downwardly-extending position adjacent the tube member 12.

In the use of the novel table leg structure comprising the present invention, when it is desired to set the table top at a particular elevation, the handle shaft 49 is first turned outwardly somewhat to position the end face 50' of the cylindrical body portion of said handle clear of the outer tube wall 17. The user then manually pushes downwardly on said handle against the tension of the spring 47 to pivot the pawl 38 downwardly about its axis 39, thereby retracting the pawl teeth 34, 35 from their normal, projecting position, as shown in FIG. 6. With said pawl teeth thus retracted, the inner telescopic tube member 19 may be slidably adjusted within the surrounding tube 12 to raise or lower the table top 11 as desired, and said inner tube member is adjusted to position its rectangular openings 36, 37 in registration with the desired pair of openings 21 in said outer tube member 12.

For example, if it is intended to set the table at its lowest elevation, as when it is to be used in a children's classroom, the inner tubular member 19 is slidably shifted to its uppermost position within the tube 12, and with the rectangular openings 36, 37 therein in registration with the top two openings 21 in said surrounding tube. If the table is intended for use as an office conference table, on the other hand, said inner tubular member 19 can be lowered to a position wherein the openings 36, 37 therein are in registration with the lowermost outer tube openings 21, or they can be aligned with any desired intermediate pairs of openings in said surrounding tube, of course, depending upon the intended use of the table.

When the table has been set at a desired height the user merely releases the handle 48, and the spring 47 automatically pivots the pawl 38 upwardly about its axis to insert the teeth 34, 35 thereon into the registering sets of apertures in said interfitting telescopic tube members 12, 19, thereby locking said members in said condition. In addition to the constant tension of the spring 47, the offset position of the pawl pivot point 39 eliminates the possibility of said pawl inadvertently swinging rearwardly to its retracted position when the table is in use, even when a substantial load is placed thereon. Moreover, because two teeth 34, 35 are provided in the present pawl the stress thereon is divided, and the possibility of the same being sheared off under a load is practically eliminated, as hereinabove mentioned.

After the pawl teeth 34, 35 have been inserted into the proper pairs of aligned openings in the telescopic tube members 12, 19, as described, the handle 48 is screwed inwardly until the face 50' of the handle cylindrical portion abuts tightly against the side wall 17 of the outer tube, thereby clampingly retaining the interfitting tube 19 between said outer tube member and the end face of the pawl 38. Moreover, with said handle closely abutting said outer tube member it is impossible to pivot the pawl, thus securely locking the same in position and further ensuring against inadvertent shifting of said telescopic leg members. When the leg has been adjusted and set as described, the outer handle portion 51 may be swung upwardly or downwardly to an unobtrusive position closely adjacent and parallel with the table leg to promote the neat, attractive appearance of the unit.

From the foregoing detailed description it will be seen that the present invention provides a novel and improved adjustable leg assembly for tables and the like which per-

mits a simple and secure setting of the table at any desired height. Moreover said leg unit is attractive in appearance, it is simple in operation, and it is extremely sturdy and dependable.

It is to be understood, of course, that the invention is not to be limited or confined to a structure identical in all respects to that illustrated and hereinabove described. In lieu of the rigid table leg illustrated and described, for example, the entire leg assembly can be pivotally associated with the table top, thus permitting the legs to be swung upwardly against the underside of the table when not in use to provide a compact unit for easy and convenient storage. Moreover, while the telescopic tube members have been described as being rectangular in cross section, they could also be cylindrical or some other cross sectional contour, and the vertically-spaced openings therein could be circular, or some other shape, in lieu of the rectangular openings described. In short, it is contemplated that numerous modifications or variations could be made in the illustrated structure, and it is intended to cover not only the unit shown and described herein, but also any and all modified forms thereof as may come within the spirit of said invention, and within the scope of the following claims.

What we claim is:

1. A table-supporting leg, comprising: a vertical tube member depending from a table top, said tube member having a plurality of vertically-spaced openings, and having an elongated vertical slot; an inner tubular member slidably carried within and projecting telescopically from the lower end of said outer tube and having ground-engaging means on its lower end, said inner tubular member having an opening therein selectively registrable with the spaced openings in said outer tubular member, and said inner tubular member having an opening registrable with said outer tube slot; a pawl pivotally carried in said inner tubular member, said pawl having a tooth thereon adapted to be projected into said registering inner and outer tube openings to prevent relative movement of said telescopic tubes, said pawl being pivotal to a retracted, non-projecting position; and means projected through said outer tube slot and registering inner tube opening operable to pivot said pawl to its non-projecting position when it is desired to slidably adjust said telescopic tube members to adjust the height of the table.

2. A table-supporting leg, comprising: a vertical tube member depending from a table top, said tube member having a plurality of vertically-spaced openings, and having an elongated vertical slot; an inner tubular member slidably carried within and projecting telescopically from the lower end of said outer tube and having ground-engaging means on its lower end, said inner tubular member having a pair of vertically-spaced openings therein selectively registrable with the spaced openings in said outer tubular member, and said inner tubular member having an opening registrable with said outer tube slot; a pawl pivotally carried in said inner tubular member, said pawl having a pair of vertically-spaced teeth thereon adapted to be projected into said registering inner and outer tube openings to prevent relative movement of said telescopic tubes, said pawl being pivotal to a retracted, non-projecting position; handle means projected through said outer tube slot and registering inner tube opening operable to pivot said pawl to its non-projecting position when it is desired to slidably adjust said telescopic tube members to adjust the height of the table; and releasable means for locking said telescopic tubes in their adjusted condition.

3. A table-supporting leg, comprising: a vertical rectangular tube member depending from a table top, said tube member having a first side wall provided with a plurality of vertically-spaced openings, and having a second side wall provided with an elongated vertical slot; an inner rectangular tube member slidably carried within and projecting telescopically from the lower end of said outer tube member and having ground-engaging means on

5

its lower end, said inner tubular member having a first side wall provided with a pair of vertically-spaced openings registrable with a selected pair of spaced openings in said outer tubular member, and said inner tubular member having a second side wall provided with a vertical slotted opening registrable with said outer tube slot; a pawl pivotally carried in said inner tubular member, said pawl having a pair of vertically-spaced teeth which are adapted to be projected into registering pairs of said vertically-spaced tube openings to prevent relative movement of said telescopic tubes, said pawl being pivotal to a retracted, non-projecting position; means for yieldably urging said pawl teeth into their projecting position; handle means on the exterior of said tubes projected through said registering tube slots and associated with said pawl, said handle means being manually operable to pivot said pawl to temporarily retract the teeth thereon from their projecting position when it is desired to slidably adjust said telescopic tube members to adjust the height of the table; and releasable means for locking said telescopic tubes in their adjusted condition.

4. A table-supporting leg, comprising: an upper leg member mounted on and depending from the underside of a table top; a vertical rectangular tube member rigidly secured on the inner face of said upper leg member, said tube member having a first side wall provided with a plurality of vertically-spaced openings, and having a second side wall provided with an elongated vertical slot; an inner rectangular tube member slidably carried within and projecting telescopically from the lower end of said outer tube member and having a ground-engaging element on its lower end, said inner tubular member having a first side wall provided with a pair of vertically-spaced openings registrable with a selected pair of spaced openings in said outer tubular member, and said inner tubular member having a second side wall provided with a vertical slotted opening registrable with said outer tube slot; a pawl pivotally carried in said inner tubular member, said pawl having an end with a tapped bore therein in registration with said tube member slots, and said pawl having a generally upright portion provided with a pair of vertically-spaced teeth which are adapted to be projected into registering pairs of said vertically-spaced tube openings to prevent relative movement of said telescopic tubes, said pawl being pivotal to a retracted, non-projecting position; spring means adapted to yieldably urge said pawl to its projection position; and a handle unit including a shaft adjustably threaded into said pawl end bore, said handle being manually operable to pivot the pawl against the tension of said spring means to temporarily retract the pawl teeth from their projecting position when it is desired to slidably adjust said telescopic tube members to adjust the height of the table, and said handle being adapted to be turned inwardly to a position abutting against the surface of said outer tube member to lock said telescopic tubes in their adjusted condition.

5. A table-supporting leg, comprising: an upper leg member mounted on and depending from the underside of a table top; a vertical rectangular tube member centered on and rigidly secured to the inner face of said upper leg member, said tube member having a first side wall

6

provided with a plurality of vertically-spaced openings, and having a second, opposite side wall provided with an elongated vertical slot; an inner rectangular tube member slidably carried within and projecting telescopically from the lower end of said outer tube member and having a ground-engaging element on its lower end, said inner tubular member having a first side wall provided with a pair of vertically-spaced openings in its upper end portion registrable with a selected pair of spaced openings in said outer tube member, and said inner tubular member having a second, opposite side wall provided with a vertical slotted opening registrable with said outer tube slot; a bracket rigidly mounted in the upper end portion of said inner tubular member, said bracket having a bottom; a pawl pivotally carried by said bracket, said pawl having a lower leg portion spaced above and generally parallel to said bracket bottom, there being a tapped bore in the outer end thereof in registration with said tube member slots, and said pawl having a generally upright neck portion provided with a pair of vertically-spaced teeth which are adapted to be projected into registering pairs of said vertically-spaced tube openings to prevent relative sliding movement of said members, said pawl being pivotal to a retracted, non-projecting position; spring means mounted between said bracket bottom and said pawl lower leg and adapted to yieldably urge said pawl about its pivot point to its projecting position; and a handle unit including a shaft adjustably threaded into said pawl end bore, said handle unit having an intermediate portion, and having a gripping element pivotally mounted on the outer end thereof, said handle being manually operable to pivot said pawl against the tension of said spring to temporarily retract the pawl teeth from their projecting position when it is desired to slidably adjust said telescopic tube members to adjust the height of the table, and said handle being adapted to be screwed inwardly to a position wherein the intermediate portion thereof abuts against the surface of said outer tube member to lock said telescopic tubes in their adjusted condition.

6. The adjustable table leg structure recited in claim 1 and wherein said pawl is pivotally mounted on a transverse pin which is offset relative to the pawl center of gravity to ensure that said pawl will not inadvertently pivot rearwardly when it is arranged in its projecting position.

References Cited by the Examiner

UNITED STATES PATENTS

1,867,763	7/1932	Rose	108—8
2,165,426	7/1939	Tuttle et al.	248—188.5
2,746,822	5/1956	Copenhaver	248—188.5
2,775,497	12/1956	Alvarez	108—146
2,805,906	9/1957	Hoven et al.	108—29
2,947,586	8/1960	Hoven et al.	108—144

FOREIGN PATENTS

480,317	1/1952	Canada.
---------	--------	---------

CLAUDE A. LE ROY, *Primary Examiner.*

W. D. LOULAN, *Assistant Examiner.*

UNITED STATES PATENT OFFICE

Certificate

Patent No. 3,309,050

Patented March 14, 1967

Robert O. Blink, Frederick H. Holz and William C. Lutzke

Application having been made by Robert O. Blink, Frederick H. Holz, and William C. Lutzke, the inventors named in the patent above identified, and Mitchell Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin, the assignee, for the issuance of a certificate under the provisions of Title 35, Section 256, of the United States Code, adding the name of Robert W. Schier as a joint inventor, and a showing and proof of facts satisfying the requirements of the said section having been submitted, it is this 1st day of September 1970, certified that the name of the said Robert W. Schier is hereby added to the said patent as a joint inventor with the said Robert O. Blink, Frederick H. Holz, and William C. Lutzke.

FRED W. SHERLING

Associate Solicitor.