July 19, 1966 W. C. MILLER 3,261,584

ADJUSTABLE LEG

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Fig. 1.

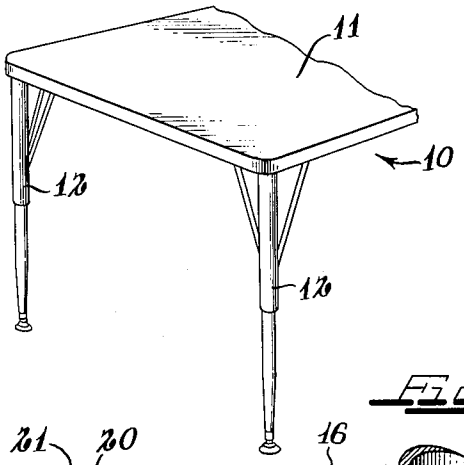
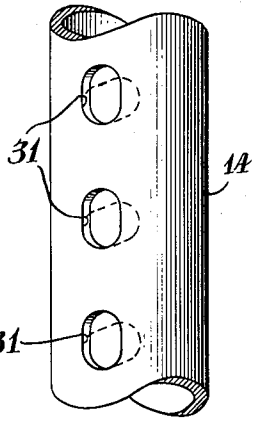


Fig. 5.



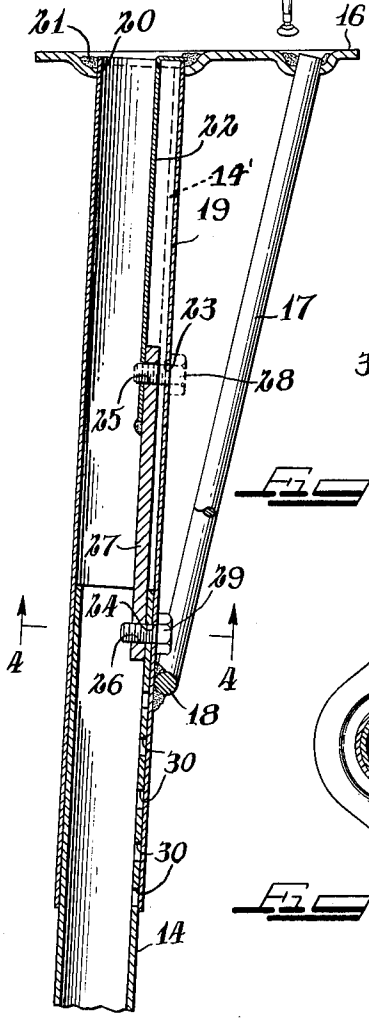


Fig. 3.

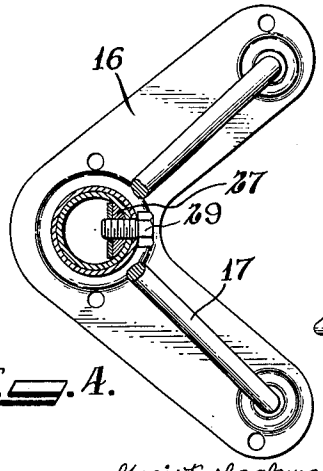


Fig. 4.

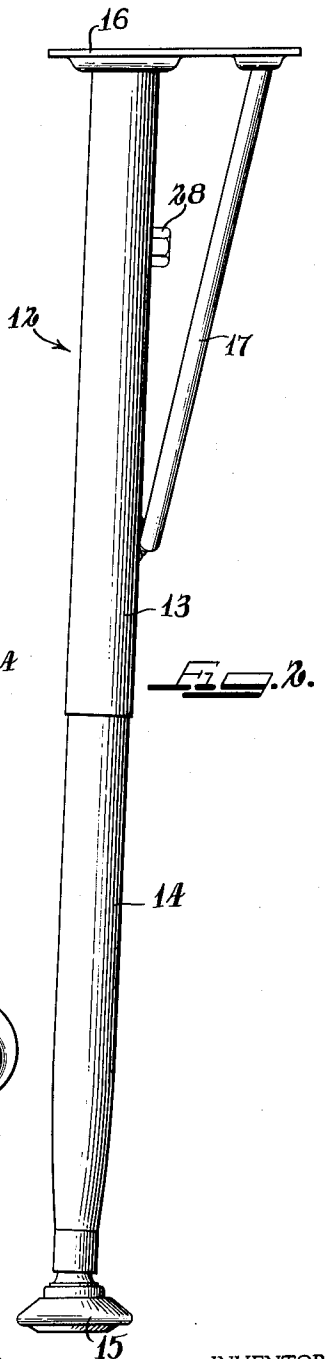


Fig. 2.

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ADJUSTABLE LEG

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This invention relates to improvements in articles of furniture in general and more particularly is directed to a new and improved adjustable support member or leg assembly. In the manufacture of furniture, it is highly desirable to provide a product which is versatile such as being readily adjustable to different elevations in order to serve a wide range of purposes. Applications and uses of different articles of furniture vary with the user, and it is highly desirable to maintain wide flexibility in any design. In the interest of economy of manufacture, it is highly desirable to also maintain uniformity in leg constructions notwithstanding their applicability to different types of furniture such as tables, desks and the like. In addition, by providing adjustability in the article of furniture to which the leg is applied, a wide latitude in potential use is provided, thereby enhancing the marketability of the entire article.

The prior art in adjustable legs or support members is developed to a great degree, however, ample room remains in the field for an adjustable leg assembly which is positively acting, easily adjusted and which is constructed so as to permit adjustment and re-adjustment without fear of failure. The numerous benefits of the present invention will become more apparent upon a consideration of the objects to be achieved and the unique construction of the adjustable leg of the present invention to follow.

It is an object of this invention to provide a new and improved adjustable leg assembly for use in supporting articles of furniture such as tables and the like.

It is a further object of this invention to provide a new and improved leg assembly which is vertically adjustable over a wide range of elevations while keeping all the holes covered which are normally required for adjustability.

It is a still further object of this invention to provide a new and improved leg assembly which adjustably supports articles of furniture at selected elevations and wherein means is provided in the adjustment to compensate for irregularities in the supporting surface on which the article of furniture is placed.

Further and full objects will become readily apparent when reference is made to the accompanying drawings wherein:

FIG. 1 is a fragmentary perspective view of an article of furniture supported by the adjustable leg assembly of the present invention;

FIG. 2 is a free body view in elevation of the adjustable leg in the fully collapsed or telescoped position;

FIG. 3 is a longitudinal fragmentary cross sectional view of the adjustable leg of the present invention with solid lines illustrating the leg in the extended position, and dashed lines to show the shortened position;

FIG. 4 is a cross sectional view taken along the lines 4—4 of FIG. 3; and

FIG. 5 is an enlarged fragmentary view of the telescoping portion of the adjustable leg.

Referring now to FIG. 1, reference character **10** indicates an article of furniture such as a table or the like having a supporting surface **11**. Adjustable leg assemblies **12** are provided at the corners of the table for supporting the same at any desired elevation. Each of the leg assemblies **12** is of identical construction and therefore in the interest of brevity, description will be limited to one of the leg assemblies **12**.

The leg assembly **12** shown in FIGS. 2–4 generally includes a clamping sleeve assembly **13** which telescopically receives an adjustable leg member **14**. A floor engaging glide **15** or the equivalent may be provided at the lower extremity of the leg member **14** if desired, depending upon the particular application of the article of furniture.

The clamping sleeve assembly **13** includes an attaching plate **16** adapted to be fastened to the article of furniture to be supported. As is best seen in FIG. 4, the attaching plate **16** when viewed in plan is generally V-shaped and is connected by welding to a generally V-shaped diagonal brace **17**, welded at the apex of the V as at **18**, to a hollow tubular member **19** forming a part of the clamping sleeve assembly **13**. The hollow tubular member **19** is received in a suitable aperture **20** formed in the attaching plate **16** and is joined thereto by welding, brazing or the like as indicated at **21** in FIG. 3.

The clamping sleeve assembly **13** further includes a clamping bar **22** which is joined to the tubular member **19** and the attachment plate **16** and extends downwardly within the tubular member **19**. The tubular member **19** is provided with radially extending openings **23** and **24** which register with openings **25** and **26** in the clamping bar **22**. The openings **25** and **26** are formed in a thickened portion **27** of the clamping bar **22** and are threaded to receive the threaded shanks of co-operating bolt members **28** and **29**, the former being shown in dashed lines to indicate an alternate position of the leg **14**.

The adjustable leg **14** is of the same cross sectional configuration and is telescopically received in the tubular member **19** with a sliding fit. The wall of the adjustable leg **14** passes between the clamping bar **27** and the inner surface of the wall of the tubular member **19**. A series of apertures **30** are provided in the wall of the adjustable leg **14** and in performing the adjustment, the openings **30** are brought into register with either of the openings **23** and **24** in the tubular member **19** depending on the adjustment desired.

As illustrated in solid lines in FIG. 3, the leg is fully extended necessitating placement of the bolt **29** in the lower holes **24** and **26**. It is important to note that all of the openings **30** in the leg **14** remain covered in this circumstance. When the leg is fully telescoped, as shown in dashed lines at **14'**, the lowest of the openings **30** is brought into register with the threaded opening **25** in the clamping bar **27** and the radially extending opening **23** in the tubular member **19**, and the bolt **29** inserted as shown at **28**. In elevation the leg assembly appears as illustrated in FIG. 2 with the bolt **28** positioned on the inside of the leg closely adjacent the attaching plate **16** where it will be hidden from view.

In FIG. 5, a fragmentary portion of the leg **14** is shown having a modified form of hole **31** which may be elongated instead of round. The hole construction shown in FIG. 5 provides additional adjustability and when the leg members are tubular the major or long axis of the hole may be angulated with respect to the central axis as shown in dotted lines to permit adjustment by rotation. The angle of the major axis is quite flat to keep the major force component acting in a vertical direction. Obviously, the leg members **13** and **14** may assume other shapes such as square, oval, triangular or of cross sectoins other than round, in which case the long axis of the elongated holes **31** will of necessity be vertically aligned.

The elongated hole **31** permits slight vertical adjustment of the individual legs to compensate for irregularities in the supporting surface. For example, if the article of furniture is moved to a non-planar supporting surface, only three of the legs will contact the surface

at any given time. With fine adjustability of each leg available due to the elongated hole construction, it becomes possible to loosen the non-contacting leg and lower it until it is in firm contact with the floor. The clamping bolt **28** or **29** depending on the position of the leg **14**, may then be drawn up tight to maintain the leg **14** rigidly fixed.

This type of adjustability is permitted through the use of the unique clamping bar arrangement of the present invention since substantial friction is developed between the internal wall of the tubular member **19** and the thickened portion **27** of the clamping bar **22** when the clamping bolt is drawn up tight. As seen in FIG. 4, the outer contour of the thickened portion **27** conforms to the curvature of the internal wall of the leg **14** for good clamping action.

Although the present invention has been described in connection with a single embodiment, it will become immediately obvious to those skilled in the art that various departures may be made without departing from the scope of the inventive concepts embodied herein. Therefore, any limitations imposed are to be within the spirit and scope of the appended claims.

I claim:

1. An adjustable leg for use in supporting articles of furniture at pre-selected elevations comprising, an outer clamping sleeve assembly including a plate member adapted to be attached to the article of furniture to be supported, said outer clamping sleeve assembly further including an elongated hollow member attached to said plate member, at least one opening through a wall of said hollow member, a clamping bar secured to one of said members and extending longitudinally within said elongated hollow member and being slightly spaced from the internal wall surface of said hollow member, said clamping bar having at least one threaded bore in register with said opening in the wall of said hollow member, a hollow adjustable leg telescopically received in said hollow member with a wall portion thereof being telescopically received between said clamping bar and said hollow member, a series of axially spaced apertures formed in a wall portion of said adjustable leg, said adjustable leg being longitudinally movable within said hollow member to bring one of said apertures into alignment with said opening in said hollow member and said threaded bore in said clamping bar, and means to draw said clamping bar to said tubular member thereby to clamp and retain said adjustable leg at a pre-selected and adjusted position.

2. The adjustable leg of claim **1** wherein each of said apertures in said adjustable leg is elongated to permit slight adjustment with the clamping bar and hollow member.

3. The adjustable leg of claim **1** wherein each of said apertures in said hollow adjustable leg is elongated and extends at an angle to the axis of said adjustable leg to permit rotary adjustment.

4. An adjustable leg assembly for use in supporting articles of furniture at selected elevations comprising an outer clamping sleeve assembly including a hollow member joined to a mounting plate, a clamping bar joined to said clamping sleeve assembly and projecting longitudinally into said hollow member and being held slightly spaced therefrom, an opening in the wall of said member in register with a threaded bore formed in said clamping bar, an adjustable leg telescopically received within said hollow sleeve in slidable engagement with the internal wall thereof, said adjustable leg having a wall portion slidably received between said clamping bar and the internal wall of said hollow sleeve, said clamping bar having an external contour conforming to the shape of the internal wall portion of said adjustable leg to provide good clamping action, a series of apertures formed in said wall portion of said adjustable leg, said apertures being adapted to be brought into radial alignment with said opening in said hollow member and means urging said clamping bar towards said hollow member to clamp said adjustable leg therebetween.

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