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Delafield

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[54] **TABLE LEG FASTENING MEANS**

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[52] **U.S. Cl.** **248/188;** 108/156; 211/148; 211/182

[51] **Int. Cl.** **A47b 3/06**

[58] **Field of Search** 248/188, 250; 108/111, 108/153, 155, 156, 157; 211/134, 148, 177, 211/182, 183; 403/6, 7, 8, 205, 230, 231, 252, 403/263, 264

[56] **References Cited**

UNITED STATES PATENTS

1,335,554	3/1920	Callahan	403/8
2,304,481	12/1942	Shannon	108/153
2,973,982	3/1961	Elting et al.	248/188 X
3,749,343	7/1973	Marshack	211/134 X

FOREIGN PATENTS OR APPLICATIONS

1,429,641	3/1969	Germany	211/182

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[57] **ABSTRACT**

An article of furniture having improved means for attaching supporting legs thereto and said improved attaching means. Tubular supporting legs are received within cutouts in the body of the furniture article. A cap portion having a flange insertable into a tubular leg depending therefrom caps the upper end portion of each tubular leg. Apertures in the flanges, legs, and cutouts communicate for receiving fastening means therein. The fastening means are preferably bolts threaded along the entire length for threaded engagement with the flange and a nut at the other end of a aperture through each body portion of the furniture article body having a cutout therein. Another larger aperture in the furniture body bottom facilitates placement of the nut on the bolt and subsequent threading of the nut on the bolt for final securement of each leg to the furniture article body.

8 Claims, 4 Drawing Figures

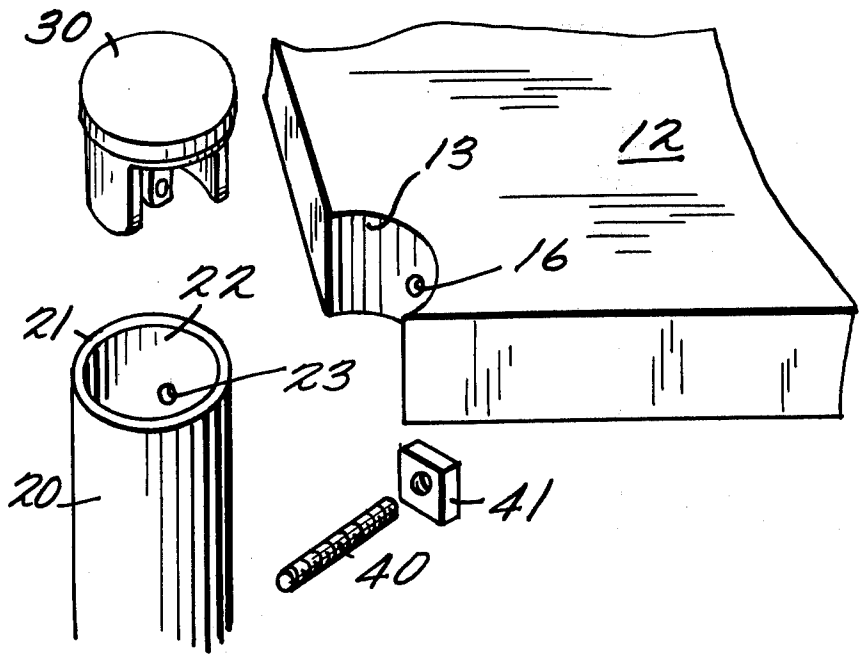


Fig. 1.

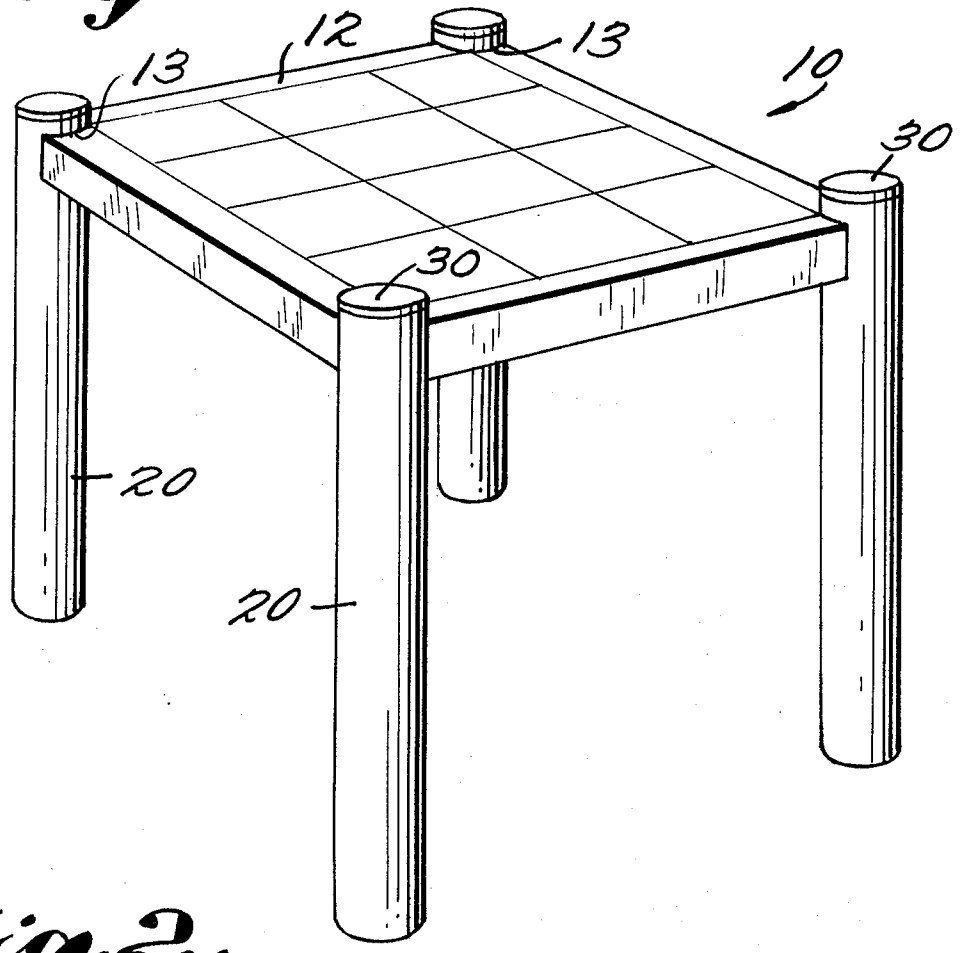


Fig. 2.

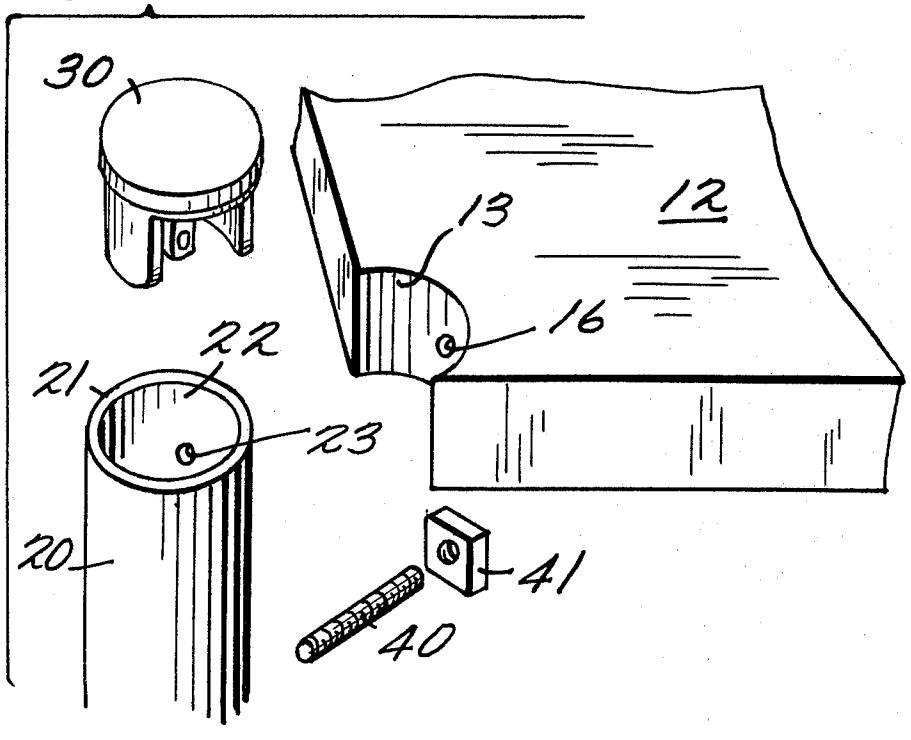


Fig. 4.

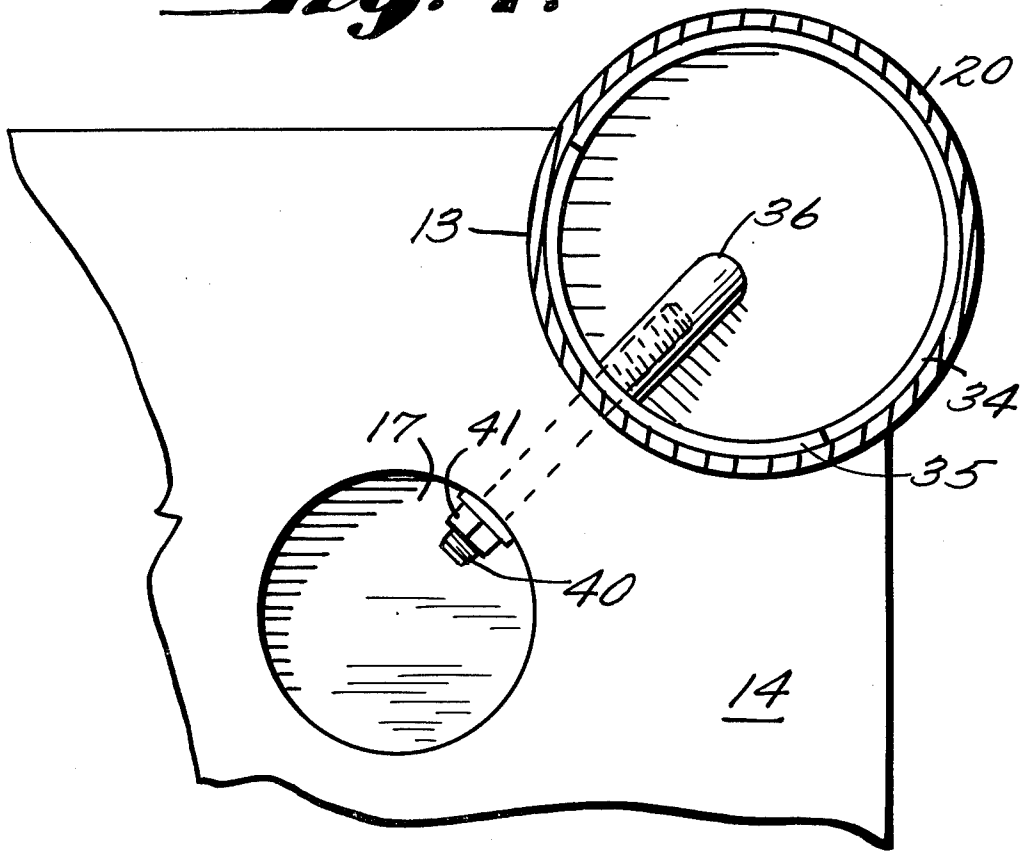


Fig. 3.

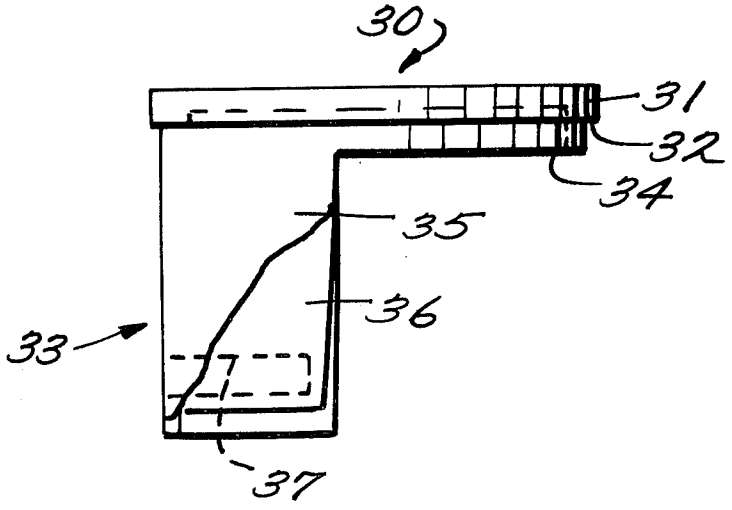


TABLE LEG FASTENING MEANS

BACKGROUND AND SUMMARY OF THE INVENTION

In the furniture art it is always necessary to provide means for securely attaching supporting legs to the furniture article body, whether it be a table, cabinet, chair, etc., so that the legs will indeed firmly support the article. Also, it is desirable to make any such attachments aesthetic since the form of a furniture article is often as important to the user as its functionality. It is additionally desirable to use simple attaching means so that the cost of labor and parts will be reduced, and so that if desirable the article may be shipped disassembled for assembly by a retailer or the ultimate consumer. By so facilitating easy assembly of the furniture article storage and shipping space can also be reduced to a minimum.

Prior art devices concerned with above considerations are disclosed in U.S. Pat. Nos. 2,942,923, 2,973,982, and 1,179,955 among others. The present invention is an improvement thereover for furniture articles having cutouts therein.

It is an object of the present invention to provide improved means for securing supporting legs to furniture articles.

It is a further object of the present invention to provide a furniture article having means for securely, aesthetically, removably, and quickly attaching supporting legs thereto.

It is a still further object of the present invention to provide a furniture article that may be shipped and stored without the supporting legs attached thereto yet easily assembled by an ultimate consumer or retailer.

These and other objects of the invention will become clear upon inspection of the ensuing detailed description and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of an assembled article of furniture according to the teachings of the present invention;

FIG. **2** is an exploded perspective view of the supporting leg attaching arrangement according to the teachings of the present invention;

FIG. **3** is a side view with portions cut away for clarity of the cap assembly according to the teachings of the present invention;

FIG. **4** is a bottom plan view of a leg attachment assembly according to the teachings of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

In FIG. **1** a table having legs attached thereto in accordance with the teachings of the present invention is shown generally at **10.** The table has a top **12,** cutouts **13** at the corners thereof, and a bottom **14** (FIG. **4**). Depending upon the materials used, the cutout may be formed by either casting, molding, stamping, or cutting. Each body surface bordering a cutout **13** has an aperture **16** therein for engagement with a fastening means, as will be further explained below. The bottom surface **14** of the table may have an enlarged aperture **17** therein for allowing access to the end of a fastening means inserted through the aperture **16** of the body surface bordering cutout **13.** The table or other similar

furniture article is preferably made of wood, although other materials are suitable.

Tubular legs **20** support the table. Each leg has a flat end portion **21** at the top thereof extending around the circumference and of the thickness of the material forming leg **20,** and an inside surface **22.** Each leg also has an opening **23** therein for communication with aperture **16** of the table top **12** as well as a fastening means. Legs **20** are preferably formed of brass or other metal although other materials may be suitable.

An end cap assembly, shown generally at **30,** provides for an aesthetic termination of each leg **20,** as well as allowing firm securement of the leg to table top **12.** The cap assembly includes a cap portion **31** having a bottom surface **32** for engagement with surface **21** of leg **20.** A depending flange portion of cap assembly **30** is shown generally at **33** (FIG. **3**). The flange portion includes an inner rim **34** for engagement with inner surface **22** of leg **20,** and an extension **35** of rim **34** extending approximately halfway around the circumference of the rim. The exact dimensions of extension **35** is not critical but it is preferably large enough to properly distribute the forces that will be applied thereto by the fastening means so that it will not break. The rim **34** and extension **35** help insure a firm attachment of the cap assembly **30** to and within leg **20,** as well as providing support for depending solid portion **36.** Portion **36** preferably has a threaded aperture **37** therein for receiving a fastening means. Threaded aperture **37** may extend all the way through solid portion **36.** The cap assemblies are preferably formed of the same material as the legs **20.**

A preferred fastening means according to the teachings of the present invention is shown in FIGS. **2** and **4.** The preferred fastener is a threaded bolt **40** having a nut **41** for receipt thereon. The bolt **40** secures each leg and cap assembly to the table by threadedly engaging aperture **37** in cap assembly **30,** and nut **41** in aperture **17** of table bottom **14.** Other fasteners may be used so long as they provide the necessary compressive forces to tightly hold each leg **20** within its cutout **13** to prevent the table from wobbling, but a threaded fastener is preferred because of ease of assembly.

The individual components of the furniture article and leg attaching assembly having been described, assembly will be apparent to the ordinary skilled artisan. Cap assembly **30** is placed on the top end portion of tubular leg **20,** with depending flange portion **33** and rim **34** extending therein, care being taken to insure that aperture **37** and opening **23** line up. Bolt **40** is then inserted through opening **23** and threaded into aperture **37** of depending portion **36.** Then the leg and cap assembly are placed in cutout **13** of table **12,** the cutout **13** conforming generally in shape to the circumference of leg **20** in the area of aperture **23.** Bolt **40** will extend through aperture **16** in cutout **13** when the leg assembly is so positioned, thereby fastening the leg assembly to the table top. Fastening of the components is secured by placing nut **41** through aperture **17** in table bottom **14** and threading it with bolt **40** until it abuts the surface of the table adjacent to aperture **16** inside aperture **17.**

If the parts are properly dimensioned (including the bottom portion of extension **35** not extending more than halfway around the circumference of rim **34**) assembly may also be effected by first threading bolt **40** into aperture **37** and then running bolt **40** through

opening **23** while placing the cap assembly **30** on the leg **20.** Alternatively, bolt **40** could be made integral with cap assembly **30,** taking the place of depending portion **36** and aperture **37** therein, and/or opening **23** could be in the form of a slot extending up to the top of the leg **20.**

It is apparent that many modifications of the present invention are possible. For instance, the furniture article and legs need not be restricted to any particular shapes so long as the cutouts in the furniture article conform generally to the portion of the legs to be received therein. Similarly the depending flange portion of the cap assembly may be of any desired shape or ornamentation, and may have portions thereof cut away to decrease materials expense, so long as it functions to allow securement of the leg to the furniture article, and to cap the leg. The leg need not be hollow throughout the length thereof but need only be hollow in its top portion to allow receipt of the cap assembly, although a tubular leg is preferred for obvious reasons. Additionally, the fastening means may be of other types, some of which would not necessarily require an aperture such as **17,** and aperture **17** when provided could be located in a side surface or the top surface instead of the bottom as long as the location was aesthetically acceptable. It being recognized that departures may be made therefrom, the invention is not to be limited to the details disclosed, but is to be accorded the full scope of the claims so as to embrace any and all equivalent structures and device.

What I claim is:

1. In furniture a combination for quickly, aesthetically, and securely attaching a supporting leg to a furniture body comprising

a. a tubular supporting leg having a circumference of a given shape with an opening in a portion thereof,

b. a furniture body having a cutout therein for receiving said leg portion, a body surface formed by said cutout being of substantially the same shape as said portion of said leg circumference and having an aperture therein for communication with said opening in said supporting leg portion,

c. means for effecting securement of said leg to said furniture body and for aesthetically capping said tubular leg, said means including (i) a cap portion for capping an open end of said tubular supporting leg and (ii) a flange portion depending from said cap portion for insertion into said tubular supporting leg, said flange portion having a rim for supporting said cap portion on said tubular leg, and

d. fastening means extending from said flange portion through said leg opening and said aperture in said body surface formed in said cutout for holding said securing and capping means, leg, and furniture body securely together in said surface to surface contact.

2. In furniture, a combination as recited in claim **1** wherein said flange portion of said means for securing and capping has a threaded aperture therein and wherein said fastening means comprises a bolt threadable into said flange aperture.

3. In furniture, a combination as recited in claim **2** wherein said furniture body has a bottom surface and an enlarged aperture in the bottom surface, said enlarged aperture communicating with said aperture in said body surface formed by said cutout, and wherein said fastening means further comprises a nut threadable onto said bolt for securing the components together, said enlarged aperture receiving said nut for threading onto said bolt when said bolt is inserted through said aperture in said body surface formed by said cutout.

4. In furniture, a combination as recited in claim **3** wherein said flange portion of said means for securing and capping further comprises an extension of said rim for distributing the forces applied by said bolt when securing the components together evenly over a large surface area of the interior surface of said tubular supporting leg.

5. In furniture, a combination as recited in claim **3** wherein said bolt and said flange portion of said securing and capping means and the location of said opening in said leg are so dimensioned that said bolt may be threaded into said aperture in said flange portion before placement of said capping and securing means onto and into said tubular supporting leg.

6. In furniture, a combination as recited in claim **1** wherein said flange portion of said means for securing and capping further comprises an extension of said rim for distributing the forces applied by said fastening means when securing the components together evenly over a large surface area of the interior surface of said tubular supporting leg.

7. In furniture, a combination as recited in claim **1** wherein said supporting leg is formed of metal and said furniture body is formed of wood.

8. In furniture, a combination as recited in claim **7** wherein said means for securing and capping is formed of the same material as said supporting leg.

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