Aug. 21, 1956 G. BARKER, JR 2,759,780

COLLAPSIBLE CROSSED LEGS TABLE SUPPORT

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Fig. 1.

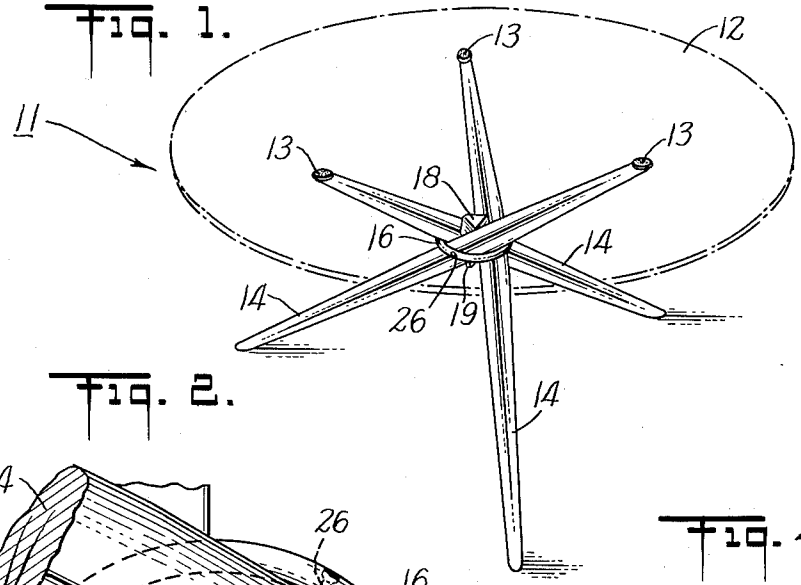


Fig. 2.

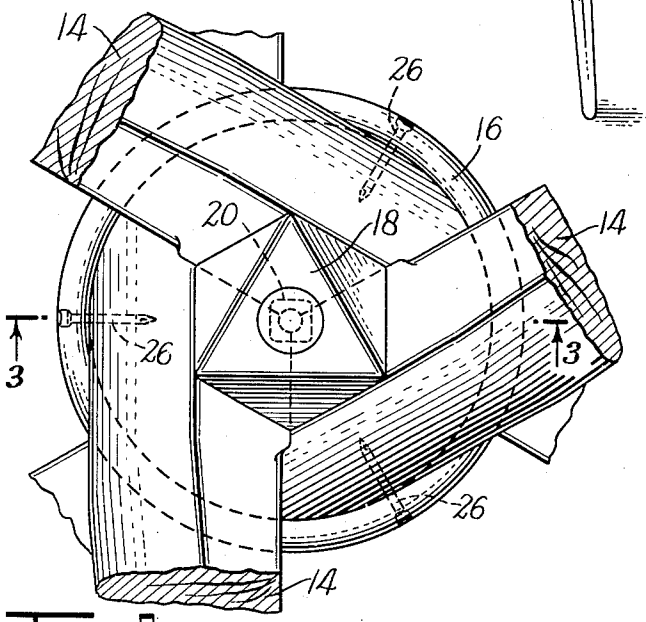


Fig. 3.

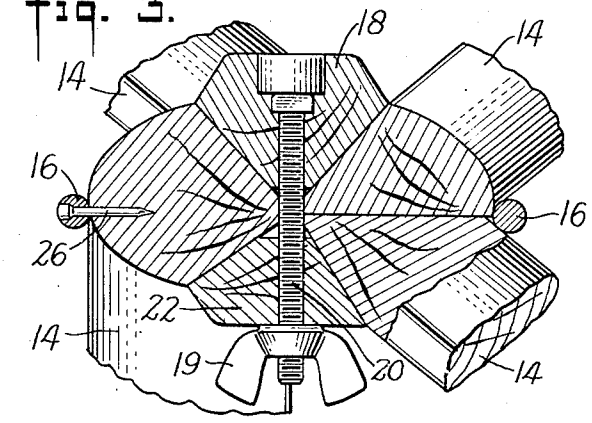
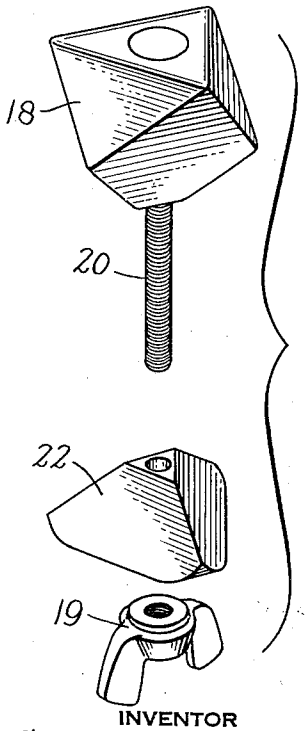


Fig. 4.



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Fig. 5.

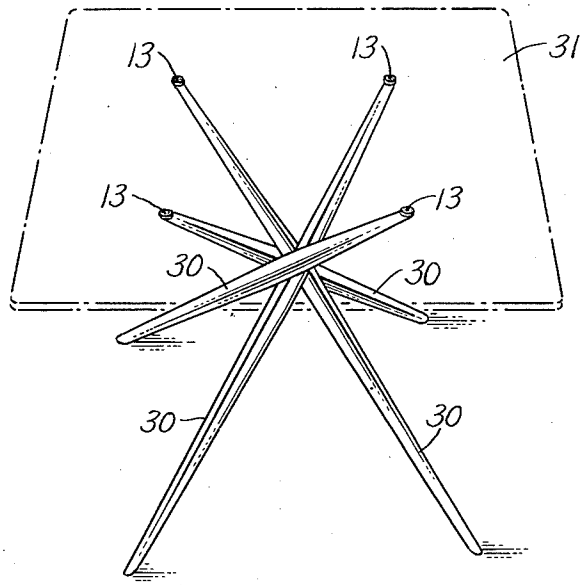


Fig. 6.

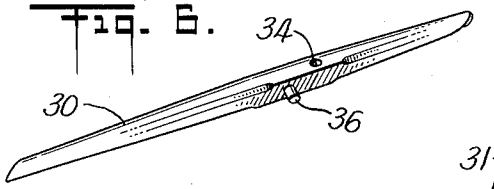


Fig. 7.

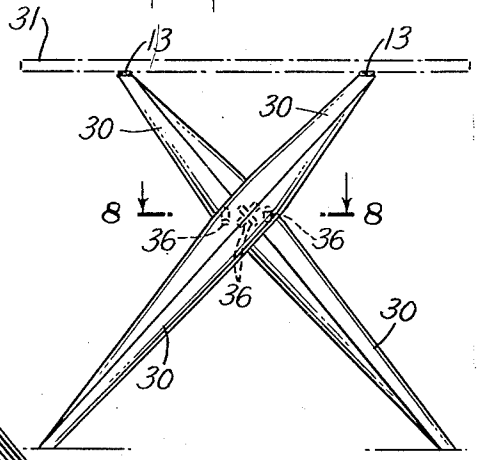
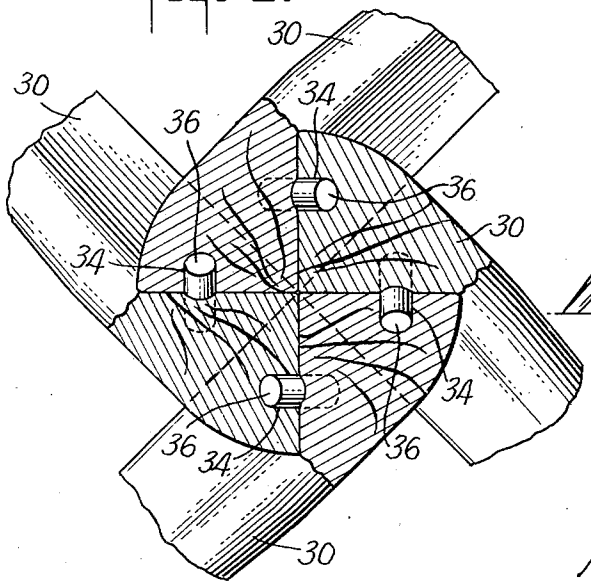


Fig. 8.



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Fig. 9.

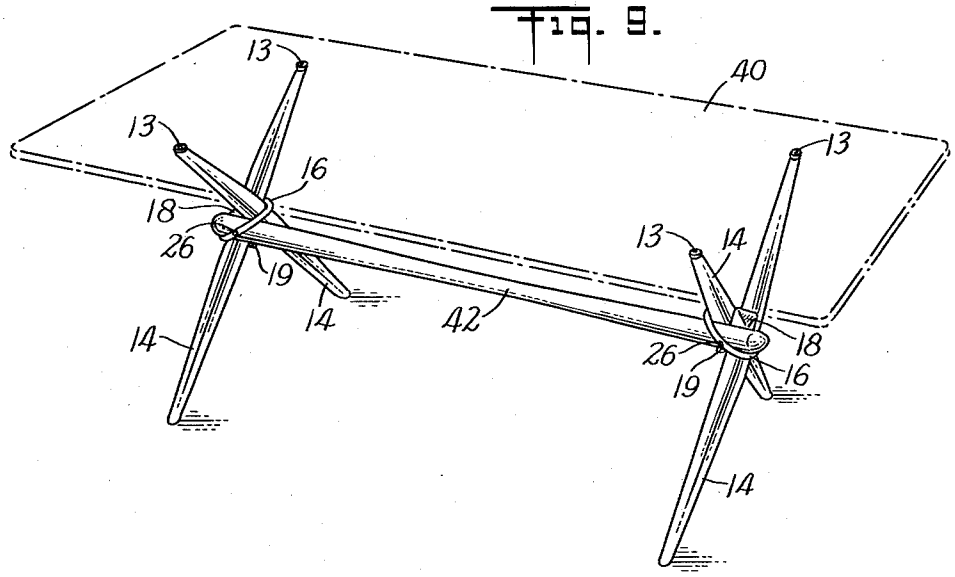


Fig. 10.

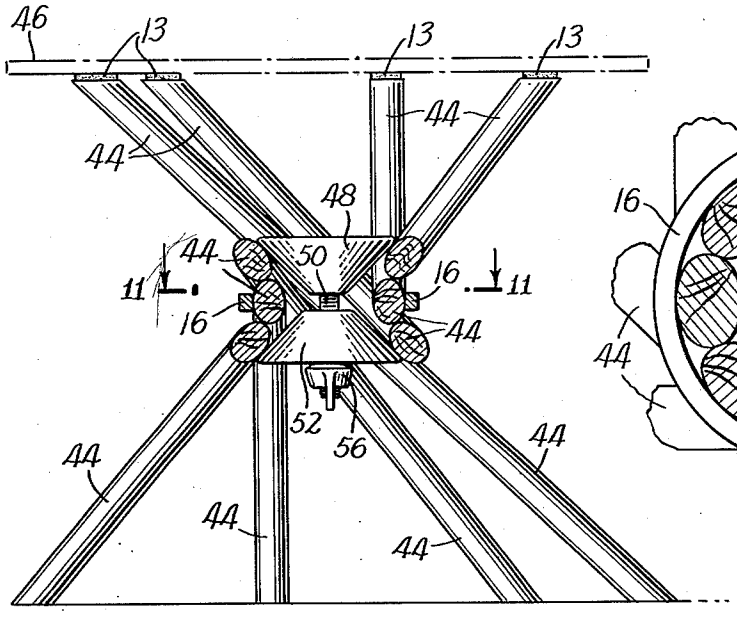
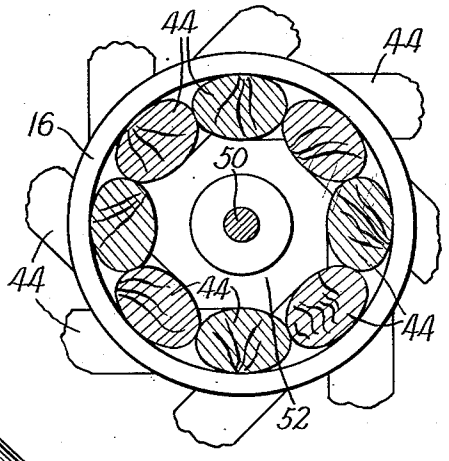


Fig. 11.



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COLLAPSIBLE CROSSED LEGS TABLE SUPPORT

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Application February 29, 1952, Serial No. 274,229

1 Claim. (Cl. 311—83)

This invention relates to structural members which are detachably fastened together. In one of its more specific embodiments the invention relates to devices adapted to support a weight, such as furniture and the like.

Several types of structural members and arrangements thereof have been known. For example, tables and chairs have been commonly made of upright members, often cross-braced, which are glued or otherwise fastened to horizontal members. In some instances, arrangements have been made for folding the members as by providing hinges or pivots; or they may be made so as to telescope together. Each arrangement heretofore known has certain advantages and certain disadvantages.

Prominent among the disadvantages has been the difficulty of providing easily manufactured, sturdy articles which may readily be assembled or disassembled and yet which are simple and attractive in appearance.

In one of the broader aspects of the present invention I provide structural members which are fastened together so as to be sturdy, adjustable in position relative to one another and yet easily assembled and taken apart for storage or shipment. While the invention is adapted for many uses and aspects, detailed reference will be made in regard to furniture, and particularly to table structures.

In a simple form of the present invention, I provide three elongated rigid members which are of substantially the same dimensions and shape. The three members are then surrounded by a narrow rigid ring of metal which fits loosely over the three members. The members are spread in criss-cross fashion so that a double tripod is formed, each member or leg being confined by contacting the ring at its upper and underside respectively. The upper ends of each leg are thus spread to receive a weight such as a table top. In order to keep the double tripod in the same relative position, I provide a notch in each leg at the region where the ring is to be positioned; as the legs are crossed, the notches provide a central aperture through which I pass a fastening mechanism so that the double tripod is held securely or may easily be taken apart. In one of its preferred forms I use a fastening mechanism which comprises a wedge and bolt assembly which is adapted to pass through said aperture where it removably engages a cooperating wedge member and a locking nut, such as a wing nut.

From the simple unit described above more complicated arrangements of multiple units or a plurality of structural members may be constructed to meet a special or desired requirement.

The invention may perhaps be better understood and appreciated by reference to the accompanying drawings which depict specific embodiments thereof.

In the drawings:

Fig. 1 is a perspective view of a glass topped table having three elongated structural members or legs;

Fig. 2 is a partial horizontal sectional view of the legs shown in Fig. 1;

Fig. 3 is a partial vertical sectional view of the legs shown in Fig. 1, taken along the plane 3—3 of Fig. 2;

Fig. 4 is a perspective view of the wedge shown in Fig. 1, but in disassembled form;

Fig. 5 is a perspective view of another embodiment of this invention wherein a glass table top is supported by four legs and the ring structure is "internal";

Fig. 6 is a perspective view of one of the legs shown in Fig. 5;

Fig. 7 is a side view of the table shown in Fig. 5;

Fig. 8 is a partial horizontal sectional view of the leg arrangement shown in Fig. 5, taken along the plane 8—8 of Fig. 7;

Fig. 9 is a perspective view of another embodiment of the invention wherein the glass top is supported by four legs and one cross-member;

Fig. 10 is a partial sectional view of still another embodiment of the invention wherein the top member is supported by eight legs;

Fig. 11 is a horizontal cross-sectional view through the ring structure of the table shown in Fig. 10, that is through the plane 11—11 of Fig. 10.

More particularly in the drawings, in Figs. 1–4 there is shown the details of construction of a table **11** having a glass top **12** and supported by three rigid elongated structural members or legs **14**. In this embodiment legs **14** are constructed of wood, are tapered and are symmetrical although other types of legs and shapes thereof may be employed. A rubber or other non-skid tip **13** is on the upper or flat end of each of the legs **14**. The legs **14** are confined by girdle or retaining ring **16** which in this embodiment of the invention is narrow and preferably of rigid metal. Non-rigid retaining rings or girdles may be used, such as yieldable plastic or rubbery materials as well as lashings made of fibers; the primary requirement on the retaining ring is that it be strong enough to securely confine the elongated structural members. Passing through ring **16** are three alignment pins **26**, each of which extends into its adjacent leg **14** so that said leg **14** may pivot about its pin **26**. These pins **26** are not essential but are a feature which facilitates maintaining the legs properly aligned both for assembling and for disassembling the structure.

Wedge **18** is positioned at the intersection of the three legs **14** and on the upper surface thereof. Bolt **20** which is secured to wedge **18** passes through the central aperture formed by the notch on each of legs **14** (not shown). Wedge **18** is shown as basically a pyramid structure having the upper or flat surface truncated and rounded at several points to give a more decorative effect. Co-operating wedge **22** is positioned on the underside of the intersection of the three legs and detachably secured to bolt **22** by means of thumb screw **19**. While I have shown wedges **18** and **22** as being preferably of a general pyramid shape other wedge shapes are also suitable in this invention.

In making the assembly of table **11**, the three legs **14** are maintained substantially parallel and retaining ring **16** passed over them to the desired position—which position is governed by the ultimate pitch and spread desired for legs **14**. Then alignment pins **19** are passed through ring **16** and into legs **14**. Next, legs **14** are pivoted about their respective pins **26** so that they intersect and form an upper and a lower tripod. Thereafter wedges **18** and **22** are positioned above and below the intersection and tightened into place by thumb screw **19**.

While I have shown wedges **18** and **22** as maintaining legs **14** in a locked position, other arrangements may also be used. For example, in some instances the wedges may be eliminated if a weight is permanently affixed to the tops of legs **14**. Thus, if table top **12** is attached to said

legs and is of sufficient weight, the wedges may be avoided. However, this makes ready detachment and assembly of the table **11** more difficult. Similarly, even if the top **12** is not securely attached to the top of legs **14**, the wedges may be eliminated if the table is not likely to be moved often or accidentally disturbed.

In Figs. 5–7 are shown the details of construction of another embodiment of this invention wherein an external retaining ring is absent. Herein, the four symmetrical, tapered legs **30** support a table top **31**, however, each leg **30** has on one side thereof a pin **36** and on an adjacent side a pin-receiving channel **34**. When the four legs **30** are crossed to the position as shown in Fig. 5, each pin **36** fits into the pin-receiving channel **34** of the adjacent leg. Preferably, an adhesive substance such as glue is placed on each of said pins so that it is firmly secured in its respective pin-channel. While this embodiment of the invention is not as readily detachable as the previously described embodiment, the omission from sight of the external retaining ring may be considered preferable by some.

One alternative to the pin and hole arrangement shown in Figs. 5–7 is the use of an internal flexible continuous cable-member such as wire or rope (not shown) which passes through continuous channels from one leg to another. This internal ring or girdle has the advantage of being detachable and yet the ring is concealed from ready view.

Fig. 9 shows still another embodiment of this invention as applied to a table. Herein the table top is supported by two pairs of legs **14** which are connected together by rigid cross-member **42**. The left pair of legs **14** are rigidly (but detachably) secured together with one end of cross-member **42** by means of retaining ring **16** and wedge **18**. Similarly, the right pair of legs **14** are secured to the opposite end member **42** by means of retaining ring **16** and wedge **18**. This basic structure makes it possible to support elongated objects; it is to be noted that by varying the number of units such as each pair of end members of Fig. 9, one can multiply said units to form different types of basic building structures, e. g., a square or rectangular unit suitable as the skeleton or frame of a building.

Figs. 10 and 11 depict another form of table wherein a large number of round members **44** are bound together within retaining ring **16**, thereby providing support for top **46**. Round members **44** are held detachably together by top "wedge" **48** and lower "wedge" **52**, which in turn are bound together by means of bolt **50** and nut **56**.

As indicated above the elongated structural members used in this invention need not be all of the same size and/or shape. Thus, one may employ members of diverse length, of various rigid materials and of different shape and cross-section to fit a particular requirement.

Additionally, when one uses a retaining ring such as is shown in Figs. 1–4, various internal diameters may be used depending on whether one desires greater or less pitch in the structure.

Turning now to the use of the "wedges," it is to be noted that variations in wedge structure may be employed through generally I presently prefer the wedge arrangement of Figs. 1–4. For example, one may simply have a lower wedge which is permanently or adjustably secured to the uppermost member or top. This type of structure is suitable for chairs and stools. Alternatively, as with fishing chairs and tables useful on board vessels (and which may be detachably secured to the decks of said vessels), one may employ only an upper wedge at the intersection or crossing of the structural members and secure said wedge by means of a rod or cable or line to the deck. This latter arrangement is particularly advantageous for shipboard use and other purposes wherein storage of the structure is desirably made in a small space, yet wherein the structure when in use must be compact, sturdy and firmly affixed to a deck or floor.

It is not intended that the recitation of specific embodiments of this invention be construed as limiting the invention which is defined in the appended claim.

Having now particularly described my invention, what I claim is:

An article of furniture for easy assembly and disassembly which comprises at least three leg members positioned within a rigid confining metallic ring so that said leg members are substantially parallel when disassembled but cross at a mutual region when assembled, a substantially flat top member positioned on the upper ends of said leg members and a confining wedge-member positioned on the upper side of the mutual region of crossing on said leg members, means for detachably and adjustably tightening said wedge member against each of said leg members, said means comprising a second wedge member detachably positioned on the underside of the region of the mutual region of crossing of said leg members.

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