April 19, 1932. D. A. CAIRNEY 1,854,248

COLLAPSIBLE LEG STRUCTURE FOR TABLES

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Fig. 1.

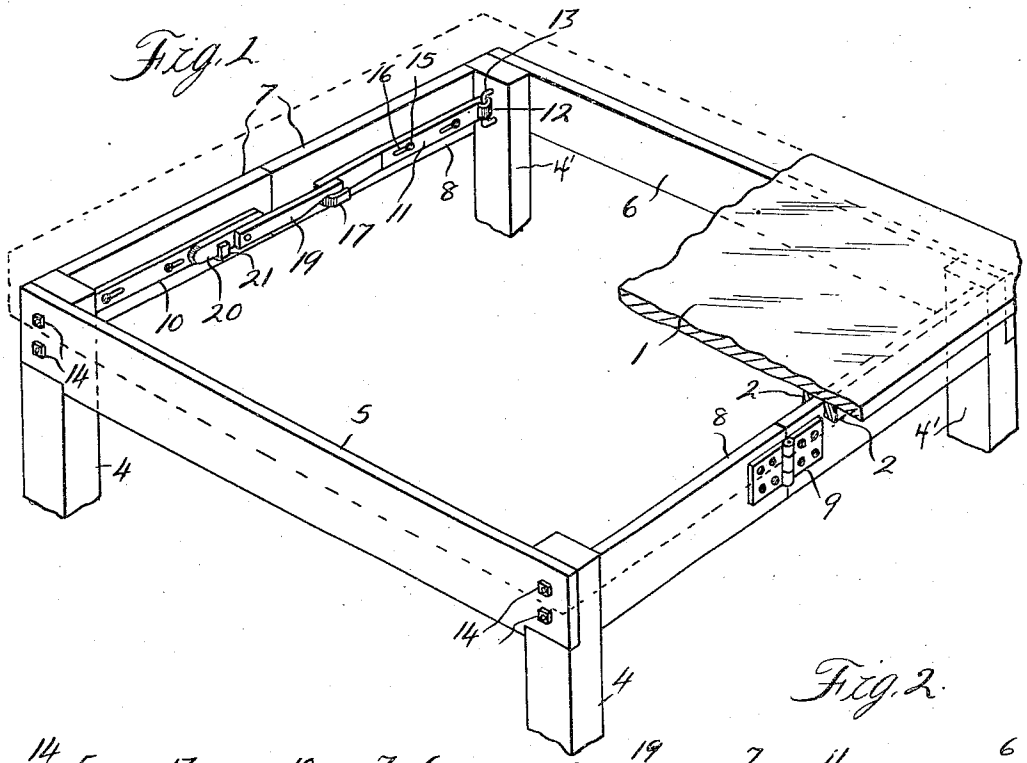


Fig. 2.

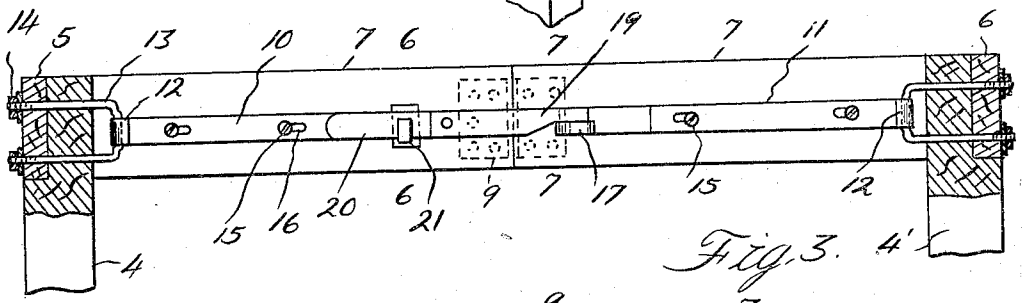
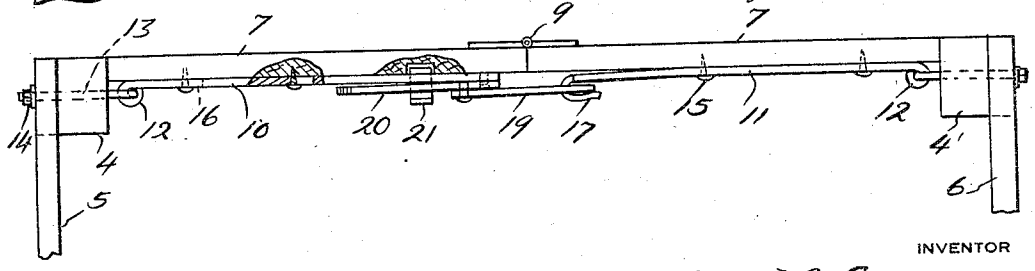


Fig. 3.



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Fig. 4.

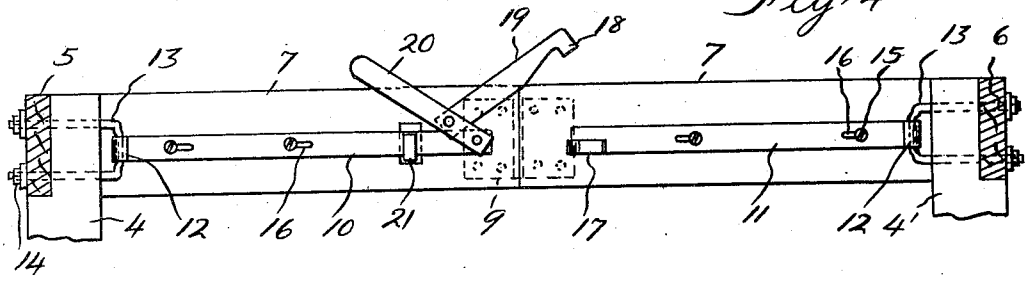
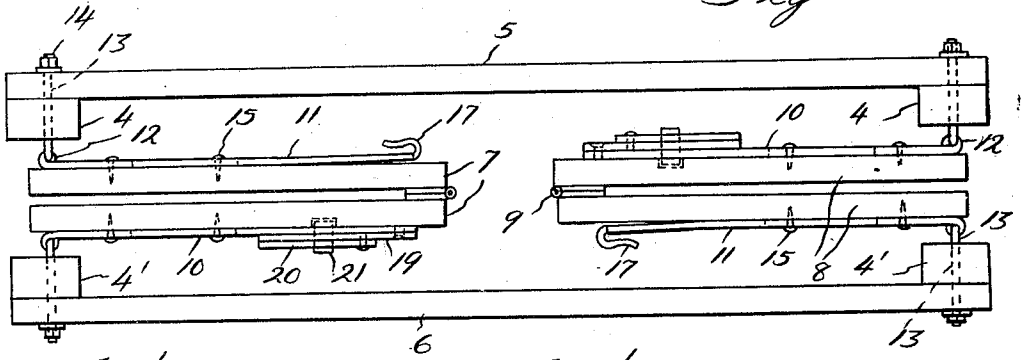


Fig. 5.



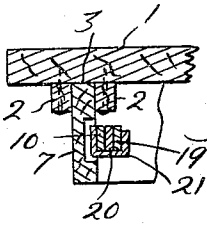


Fig. 6.

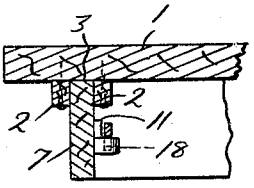


Fig. 7.

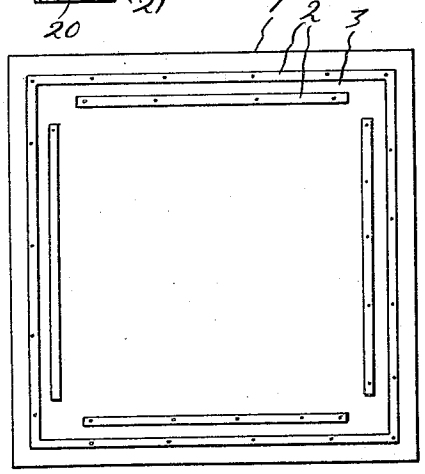


Fig. 8.

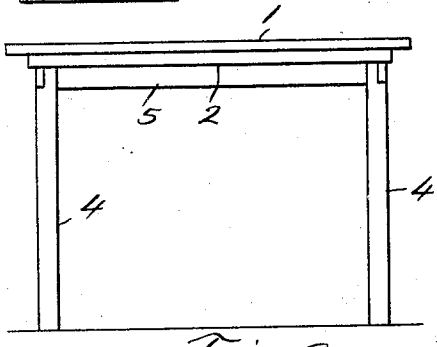


Fig. 9.

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UNITED STATES PATENT OFFICE

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COLLAPSIBLE LEG STRUCTURE FOR TABLES

Application filed April 21, 1930. Serial No. 446,025.

This invention relates to leg structures for tables, and particularly leg structures which may be collapsed upon removal of the table top therefrom to afford compact storage of the table.

Certain types of collapsible table leg structures at present available have not been found entirely satisfactory through lack of a proper rigidity in use, and a consequent tendency to sway and creak.

The present invention has for its object the provision of a collapsible leg structure, assuming a very compact form when collapsed and having in use substantially the same rigidity as a noncollapsible structure.

This and various other objects the invention attains by the construction hereinafter described and illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the improved leg structure adjusted for use, omitting the lower portions of the legs and showing a portion of a table top carried by said structure.

Fig. 2 is a cross sectional view of the same, particularly showing mechanism for clamping relatively movable sections of the leg structure in firm engagement.

Fig. 3 is a top plan view of the same, with certain portions in section.

Fig. 4 is a view similar to Fig. 2, but showing coacting clamping elements of the clamping mechanism disengaged.

Fig. 5 is a top plan view of the leg structure collapsed.

Fig. 6 is a sectional detail taken upon the line 6—6 of Fig. 2.

Fig. 7 is a sectional detail taken upon the line 7—7 of Fig. 2.

Fig. 8 is a bottom plan view of the table top.

Fig. 9 is a side elevational view of the table as assembled for use.

In these views, the reference character 1 designates a table top of any suitable contour and illustrated as substantially square. To its under face at a suitable distance from its margin are secured inner and outer strips 2, spaced to form an endless groove or channel 3.

Said top is adapted to freely seat upon a leg structure, comprising a normally rectangular frame surmounting two pairs of legs 4 and 4′. Said frame consists primarily of a pair of side pieces 5 and 6 nailed or otherwise rigidly secured at their ends to said legs, and a second pair of side pieces 7 and 8, each formed in two equal sections hingedly connected, as indicated at 9. The outer ends of said sections are so pivoted to the legs 4 and 4′ as to provide for their collapse into parallelism with the side pieces 5 and 6, as shown in Fig. 5. Thus the sections forming each side piece 7 and 8 are carried by a pair of metal bars 10 and 11, having their outer ends looped as indicated at 12 to form sleeves engaging U-bolts 13 inserted in the legs. The ends of said U-bolts are engaged by nuts 14 clamped against the outer faces of the side pieces 5 and 6. Attachment of said sections to the bars 10 and 11 is effected by screws 15 entering the sections through longitudinal slots 16 in said bars. This provides for a slight lengthwise play between said bars and sections for a purpose hereinafter explained.

The inner end of each bar 11 is formed with a keeper hook 17 for engagement by the hooked end 18 of a latch arm 19 pivotally carried by the companion bar 10, and it is a primary feature of the invention that this engagement may be established under such a stress as will draw the legs 4 and 4′ strongly toward each other, so as to firmly clamp the paired sections 7 firmly between said legs. Thus each latch arm is pivoted on a clamping handle 20, which is in turn pivoted on the inner end of the associated member 10, so that upon engagement of the keeper hooks by said latch arms, the latter may be stressed very firmly against said hooks by swinging the associated handles 20 to their horizontal clamping positions, best shown in Figs. 2 and 3. Under such conditions, the bars 10 and 11 are tensioned to draw the members 5 and 6 and attached legs 4 and 4′ tightly against the outer ends of the members 7, placing the sections of the latter under compression against each other and establishing an extremely rigid relation between the halves of the leg structure. It will now be evident

that the slight relative longitudinal play between the sections 7 and bars 10 and 11 afforded by slotting said bars to accommodate the screws 15 is necessary to allow the building up of tensional stresses in the said bars while said sections are being subjected by the legs 4 and 4' to resulting compression stresses.

Preferably, a keeper lug 21 is carried by each bar 10, projecting outwardly from its lower edge and then upwardly, so as to snugly accommodate the parts 19 and 20 when the former is disengaged from the hook 17, as best appears in Figs. 5 and 6.

The table top 1, when applied to the described leg structure, is restrained from any lateral play through fitting of the side pieces 5, 6, 7 and 8 snugly into the groove 3 formed by the strips 2 of said top.

The described construction, while inexpensive and readily applied to the leg structure, serves the purpose of completely eliminating looseness and lost motion in said structure when in use, while permitting the desired compact collapsing of the leg structure for storage purposes.

While it is apparent that the illustrated embodiment of my invention is well calculated to adequately fulfill the objects and advantages primarily stated, it is to be understood that the invention is susceptible to variation, modification and change within the spirit and scope of the subjoined claims.

What I claim is:

1. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs, a pair of side pieces extending transversely between the legs of opposite pairs in the position of use of the leg structure, and removable from such position to provide for approach of the two pairs of legs toward each other, and a pair of detachable connections between the legs of opposite pairs, each adjustable in length to clamp said removable side pieces between the opposite legs in the position of use of the leg structure.

2. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs, a pair of side pieces extending transversely between the legs of opposite pairs in the position of use of the leg structure and removable from such position to provide for approach of the two pairs of legs toward each other, a pair of connections between the legs of opposite pairs, each associated with one of said removable side pieces, and each comprising a pair of bars pivoted to the legs of opposite pairs, and means carried by the bars of each connection for interengaging and tensioning said bars to clamp said removable side pieces between the legs of opposite pairs, in the position of use of the leg structure.

3. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs, a pair of side pieces extending transversely between the legs of opposite pairs in the position of use of the leg structure, and removable from such position to provide for approach of the two pairs of legs toward each other, a pair of bars associated with each removable side piece pivoted to legs of opposite pairs, a keeper carried by one bar of each pair, a latch arm engageable with said keeper, and means mounting said latch arms on the other of said bars, adapted to tension the paired bars through engagement of said latch arm and keeper and thereby clamp the removable side pieces firmly between the legs of opposite pairs.

4. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs, a bar pivoted upon each leg, said bars on opposite legs being paired, a pair of sectional side pieces, the sections thereof being mounted each upon one of the paired bars and having a limited longitudinal movement relative to said bars, means hingedly connecting the sections of each sectional side piece, and means carried by the bars of each pair for interengaging said bars under tension to clamp the associated sectional side piece between the legs, the pivotal engagement of said bars with the legs and the hinged engagement of said side piece sections permitting said sections and bars to be swung to a stored position between and parallel to the rigid side pieces.

5. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs, a bar pivoted upon each leg to swing about an axis parallel to that of the leg, said bars on opposite legs forming coacting pairs, a sectional side piece associated with each pair of coacting bars, means attaching the sections of each sectional side piece to the coacting bars, affording a limited relative lengthwise motion between said bars and side pieces, a keeper carried by one of each pair of said bars, latch arms for engaging said keepers, and means mounting said latch arms on the other of said bars adapted to engage said latch arms and keepers under tension and thereby clamp the sections of said sectional side pieces firmly between the legs of opposite pairs.

6. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs, a pair of two-part tensioning connections between the legs of opposite pairs, means pivoting the parts of said connections individually upon the legs, a pair of sectional side pieces, means attaching the sections of said side pieces individually to the parts of said tensioning connections, means hingedly connecting the sections of each side piece, and means for interengaging the parts of each tensioning connection and thereby imposing a tension thereupon for

clamping the sectional side pieces between the opposite legs.

7. A table leg structure comprising two opposite pairs of legs, a side piece connecting each pair of legs and forming with such pair a substantially rigid unit, a pair of side pieces tranversely extending between the legs of opposite pairs in position of use of the leg structure, and removable from said position to permit approach of the two pairs of legs toward each other, and a collapsible connection between said units, comprising leverage means for imposing tension on said connection, whereby said removable side pieces may be clamped between said units.

8. A table leg structure comprising two opposite pairs of legs, a side piece connecting each pair of legs and forming with such pair a substantially rigid unit, a pair of side pieces transversely extending between the legs of opposite pairs in position of use of the leg structure, and removable from said position to permit approach of the two pairs of legs toward each other, a pair of bars, pivoted one upon each of said units, and means carried by said bars for detachably connecting them and drawing them toward each other to stress said units toward each other.

9. A table leg structure comprising two opposite pairs of legs, a side piece rigidly connecting each pair of legs and forming with said pair a substantially rigid unit, a pair of collapsible sectional side pieces, connecting said units and spacing said units apart in the position of use of the table leg structure, and a collapsible connection between said units extending adjacent to the inner face of each collapsible side piece, and adjustable in length to clamp said collapsible side piece between said units, said collapsible side pieces being restrained from collapse, in use, by their proximity to said adjustable connections.

In testimony whereof I sign this specification:

DAVID A. CAIRNEY.