Oct. 22, 1929. T. H. WITTLIFF 1,732,872

BRACE FOR WINDSOR CHAIRS AND THE LIKE

Filed April 23, 1925

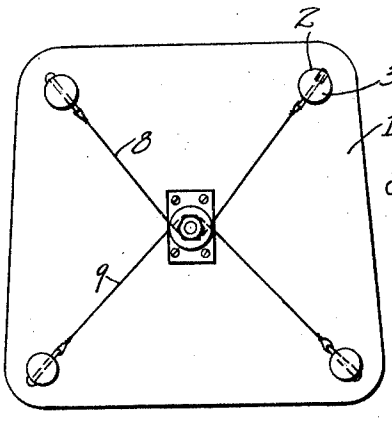


Fig. 1

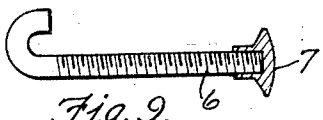


Fig. 9.

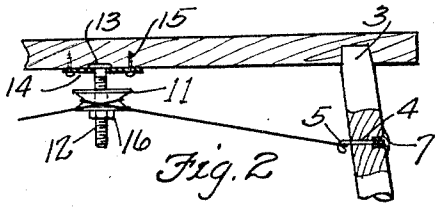


Fig. 2

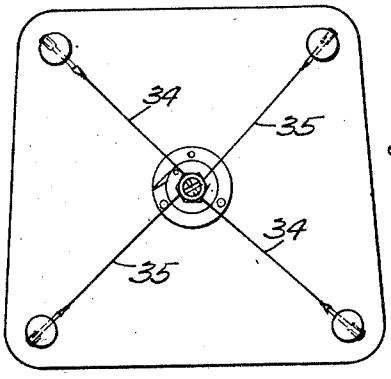


Fig. 3.

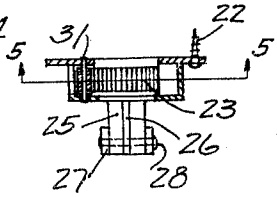


Fig. 4

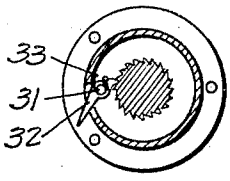


Fig. 5.

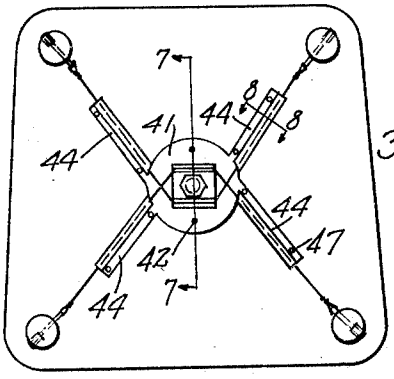


Fig. 6.

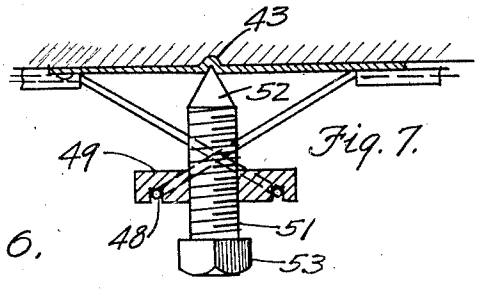


Fig. 7.

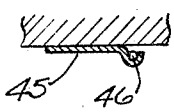


Fig. 8.

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UNITED STATES PATENT OFFICE

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BRACE FOR WINDSOR CHAIRS AND THE LIKE

Application filed April 23, 1925. Serial No. 25,342.

This invention as indicated, relates to a brace for Windsor chairs and the like. More particularly it comprises means for applying a tension adjacent the upper ends of the legs of a Windsor or solid bottom chair which will serve to draw said legs in an upward and inward direction. In a companion application, I have described a somewhat similar device wherein a central tensioning apparatus is provided which is held in floating relation upon the flexible members which serve to apply the tension to the respective legs or corner posts of the article of furniture. In the present case, the central tensioning device is so related to the bottom of the chair or other article of furniture that a push or pull against the chair bottom is utilized to apply the tension.

Chairs of the Windsor type are usually used in public halls and similar places where they are subjected to extremely severe usage and in the course of time lost motion forms between the point of attachment of the upper ends of said chair legs to the seat bottom as well as looseness between the spacing bars or rounds interposed between the respective legs.

The principal object of the present invention is to provide for increasing the rigidity of chair structures of the character described and permitting the taking up of tension upon the bracing device whenever such lost motion as has been described is developed. Other objects of the invention will appear in the course of the following description. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claim.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a bottom plan view of a solid bottom chair of a Windsor chair type showing one form of my improved brace applied thereto; Fig. 2 is a fragmentary side elevation partially in section showing the type of tensioning device disclosed in Fig. 1; Fig. 3 is a view similar to Fig. 1 showing a modified form of tensioning device; Fig. 4 is a side elevation partially in section of the tensioning device shown in Fig. 3; Fig. 5 is a plan view partially in section taken along the line 5—5 shown in Fig. 4 looking in the direction of the arrows; Fig. 6 is a view similar to Figs. 1 and 3 showing still another modified form of tensioning device; Fig. 7 is a side elevation of the modified form of tensioning device shown in Fig. 6 taken along the line 7—7 shown in Fig. 6 looking in the direction of the arrows; Fig. 8 is an enlarged detail view of the guide member taken along the line 8—8 shown in Fig. 6 looking in the direction of the arrows; and Fig. 9 is an enlarged side elevation of one of the fastening elements, the cap or head portion thereof being shown in section.

As is clearly shown in Fig. 1 of the drawing, the seat or solid bottom portion 1 of a chair of the Windsor type is provided at each of the corners with recesses 2 adapted to receive the upper ends of chair legs 3. Each of said chair legs adjacent the under side of the seat is provided with a fastening bolt 4 having a hook end 5 and a screw threaded shank 6 upon the upper end of which a cap nut 7 is engaged. Said cap nut preferably is provided with a curved outer surface so that no obstruction which might catch the clothing of the user of the chair or other article of furniture will be presented.

Said fastening bolts, as indicated, project inwardly diagonally through said respective chair legs and have secured thereto a pair of flexible elements 8, 9, each of which engages two of said hooks upon opposite pairs of chair legs. The length of said tensioning cables or flexible elements is such that they may be engaged upon opposite sides of the flanged wheel 11 which is centrally apertured to fit over a screw-threaded stud 12 having a squared upper end 13 received within a recess in the bottom of the chair and held firmly in position by means of a plate 14 centrally apertured to fit over said bolt-shank. Screws 15, or other suitable fastening elements, may be used to secure said plate to the bottom of said

chair seat. A nut 16 is engaged upon the shank of said stud and adjustment of said nut toward the chair bottom serves to move said flexible elements upwardly and apply tension to the fastening bolts 6 and draw the chair legs in an inward and upward direction, thus firmly holding said chair legs in their respective sockets and against the cross members or rounds which may be interposed between their lower ends.

In the form of construction disclosed in Figs. 3, 4, and 5, the tensioning device comprises a casing 21 having a flanged outer edge which is firmly secured by means of screws 22, or other fastening devices, to the chair bottom. Said casing is centrally apertured to receive an enlarged head 23 formed with ratchet notches 24 about its outer surface, and having formed integrally therewith a cylindrical portion of 25 which projects through a smaller aperture at the front of said casing. Said cylindrical member is provided with transverse slots 26 intersecting each other at right angles. The outer end of said cylindrical portion is adapted to be engaged by a collar 27 having preferably a hexagonal outline and held in position by means of a pin 28 engaged through one of said slots. At one side of the casing a pin 31 is provided upon which a dog 32 is pivotally mounted. A small coiled spring 33 is engaged upon said pin with one end bearing against the casing and the opposite end bearing against the nose of said dog to force the same into engagement with the ratchet notches of the cylindrical member. The flexible elements 34, 35, are preferably connected with diagonally opposite chair legs with their central portions extending through the respective slots of the cylindrical member. The flexible elements are held within said slots by means of the collar 27.

It is obvious that by rotating the cylindrical member the flexible elements will be wound about the exterior surface of the same and tension will thus be applied to the fastening elements seated in the respective chair legs and the upper ends of said chair legs will be drawn securely into their sockets or recesses. The dog will engage the enlarged portion of the cylindrical member and will prevent the flexible elements uncoiling after the requisite degree of tension has been applied thereto.

In the form of construction illustrated in Figs. 6, 7, and 8, the arrangement of the flexible members is substantially the same as in Fig. 1, but the tensioning device is of a more specialized form. In said construction a guide plate comprising a circular central portion 41 is securely fastened by means of screws or other fastening devices 42, to the bottom of the chair or other article of furniture. Said guide plate is provided centrally with a small depression 43 for a purpose hereinafter to be explained. Upon opposite sides of said guide plate extension arms 44 are provided, said arms lying in the paths of the flexible elements as they extend from the center of said chair bottom toward the respective chair legs. Said extension arms, as is clearly shown in Fig. 8, are preferably formed with a flat body portion 45 and a grooved marginal edge 46. They may also be integrally formed with the central body member so that the fastening elements employed in the latter will also serve to hold said arms in rigid relation with the chair bottom. A plurality of fastening elements 47 are engaged through said respective extension arms to hold the same firmly in position.

As is more clearly shown in Fig. 7, the flexible elements extend from the chair legs through the grooved portions of the extension arms to a point adjacent the circular body portion of the guide plate, and their central portions are free to be engaged within transverse slots 48 formed in a block 49. Said block is centrally apertured and screw-threaded to engage upon a hexagonal bolt 51. Said bolt is provided with a tapered lower end 52 which is adapted to be seated within the depression 43 in the guide plate, heretofore described.

From the construction described it will be obvious that when the bolt 51 is rotated by means of its hexagonal head 53 the block 49 will be moved toward or away from the guide plate. Thus, any desired degree of tension may be applied to the flexible elements and the chair legs will be drawn in an upward and inward direction and will be firmly held in their sockets and against the cross frame members which may be inserted between their lower ends.

While the several constructions hereinabove described have been shown as applied to a Windsor chair, it is obvious that they may be also used in connection with other structures, particularly with tables having solid wooden tops of heavy material.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by the following claim or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

A terminal member adapted to be secured to an article of furniture comprising a shank, screw-threaded adjacent one end, cable engaging means adjacent the other end of said shank, and a cap member having an internally screw-threaded recess formed therein and adapted to engage the screw-threaded end of said shank.

Signed by me this 14 day of April, 1925.

THEODORE H. WITTLIFF.