Nov. 20, 1928. 1,692,568

G. W. L. PRETTYMAN

FURNITURE BRACE

Filed Aug. 8, 1925

Fig. 1.

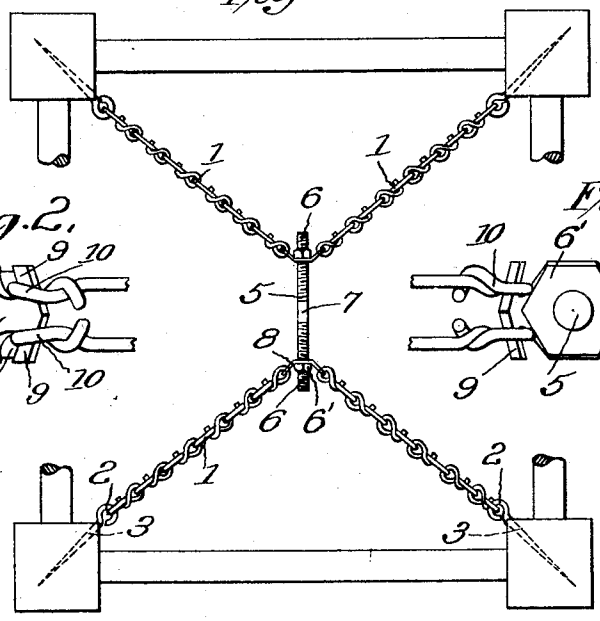


Fig. 2.

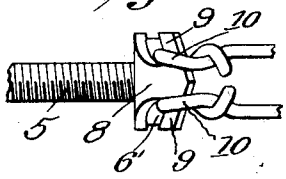


Fig. 3.

Fig. 5.

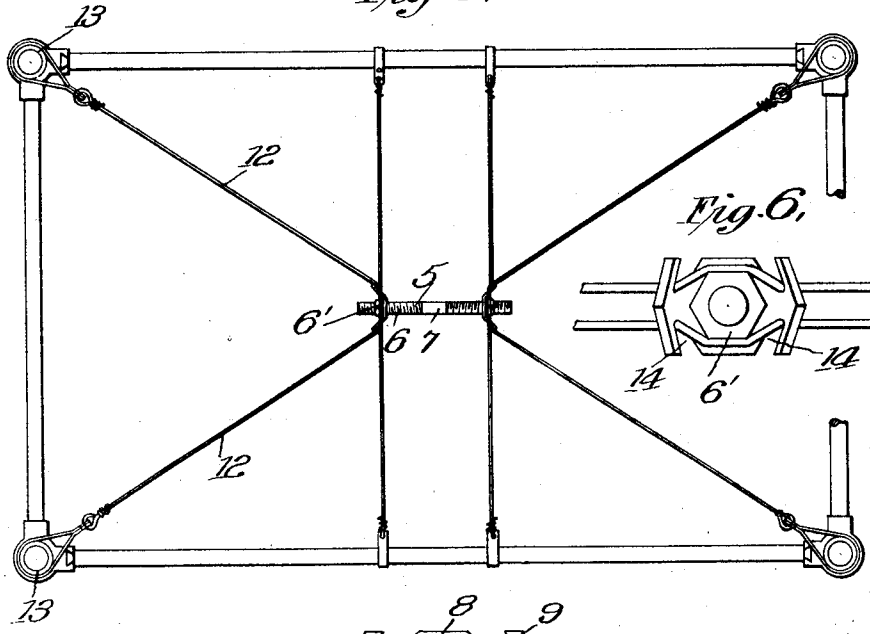
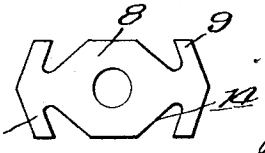


Fig. 6.

Fig. 4.



INVENTOR
George W. L. Prettyman
BY
ATTORNEY

Patented Nov. 20, 1928. 1,692,568

UNITED STATES PATENT OFFICE.

GEORGE W. L. PRETTYMAN, OF BERGENFIELD, NEW JERSEY.

FURNITURE BRACE.

Application filed August 8, 1925. Serial No. 48,932.

The present invention relates to improvements in adjustable furniture brace devices of the tensional supporting type as commonly used for the tightening and bracing of chairs, beds and the like. An important object of the present improvements is to produce a structure that is highly efficient in its intended use and offering substantial advantages with regard to facility of installation over the devices as heretofore employed for the purpose.

Important features of the present invention consist in the employment of an improved form of turn buckle tightening element in combination with flexible tension members comprising chain links of standard wire type, thereby to allow of the parts to be assembled with a desirable and initial adjustment in the length of the tensional elements with respect to the specific installations, this being performed by employing a chain composed of a given number of links as the circumstances may require. The improved structure, accordingly, is readily adjustable to varied spacings without the requirement of skillful operations in securing the tensional elements as is common to the usual practice where single wire strands are employed. The improved turn buckle tightening device is further of a novel and simple form offering material advantages particularly with regard to economy of manufacture and further of a design allowing for the advantageous use of strand wire where the same may be advantageously used as under the conditions of long reaches as in the tightening of bed frame structures.

The described and other valuable features and advantages of the present improvements will be understood by reference to the accompanying drawings, wherein like reference characters are applied to the corresponding parts in the several views.

In the drawings:

Fig. 1 is a plan view illustrating my improved device as installed for the tightening and bracing of chairs.

Fig. 2 is a view in side elevation showing improved features of the turn buckle or tightening device.

Fig. 3 is a view in end elevation thereof, illustrating the method of attaching the chain to the connecting plates or washers.

Fig. 4 is a plan view of the punch blank from which the improved connecter elements or washers are formed.

Fig. 5 is a view in plan illustrating a modified use of my improved coupler member as employed for the tightening of bed structures with wire strands.

Fig. 6 is a view of the coupler member in end elevation illustrating the method of attaching the wire tension elements thereto.

Referring to the drawings, wherein in Figure 1 an approved embodiment of the features of the present inventions illustrated as employed for tightening the legs of a chair, 1—1 indicates horizontally and diagonally positioned connecting members or tensional elements which may desirably be of a standard form of wire chain composed of interlocked double wire loops and connected at their outer ends to the hooks 2 of lag screws 3 having their shanks threaded into the upper portions of the chair legs to be tightened. At their inner ends, the tensional elements or chains are connected to a coupler and tightening device or turn buckle adapted upon manipulation to exert an inward pull upon the tensional elements and simultaneously adjust and secure the tensional elements to exert a tightening pull and tension to the degree as may be desired.

The turn buckle type of tightening device as employed, includes a rod or shank 5, having its opposite end portions reversely threaded at 6—6 and having its central portion squared or shouldered at 7 for the application of a manipulating tool. Fitted upon the opposite end portions of the coupler rod or shank 5 and in threaded engagement therewith, there are provided nuts 6′ which may desirably be of a standard square or hexagonal type as illustrated. Connecting plates or washer members 8, provided with central apertures 8′ are fitted upon the coupler shank member inwardly of the nuts 6 and engaged thereby. The connecting washers 8 are of a form adapted to be economically made from sheet metal and are formed with their outermost portions turned outwardly or in angular relation to the central body portion thereof and at their end portions are formed with cutaways or slots providing upper and lower key shoulder or hook projections 9—9 in oppositely spaced relation and adapted for connecting engagement with the opposite loops 10—10 of a chain link of the tension element.

The construction, as described, thereby affords a simplified means for attaching the chains to the turn buckle or tightening device which is accomplished by the simple operation of closing the chain loop upon the hook shoulders 9 whereby they are retained in proper relation which is advantageous in that it materially simplifies the installing of the bracing device and the tightening thereof.

As a further desirable feature thereof, and as will be best understood by reference to Fig. 3, the washer plates are suitably proportioned and formed so that upon assembling of the chain links thereon, the loops of the latter will be so positioned in juxtaposition to the nuts 6 that by their engagement therewith they will operate as nut locks and participate in securing the nuts against rotation. Also as shown, the spaced relation of the outwardly turned end portions of the washer plates may be such as to similarly function to prevent the rotation of the nuts and, accordingly, determine that upon rotation of the coupler rod 5 that the tightening adjustment shall be made.

My improved device, as disclosed, is of simple and inexpensive construction, allowing of the parts to be assembled in permanently connected relation whereby the handling and installation is materially simplified and may readily be altered or adjusted to accommodate for the varied spacings of specific applications. The improved structure is further designed to readily accommodate for the employment of strand or cable tension members in the desirable arrangement as illustrated in Fig. 5. As therein shown, the tension wires or cables 12 are suitably connected to the bed posts 13, are passed through the oppositely positioned slot 14 of the washer members 8 and have their inner ends connected to the opposite horizontal bed frame members or side bars. The shoulders 9 of the washer, and associated slots related to their formation, are accordingly arranged to accommodate for the attaching of the wire members thereto and in this latter arrangement, by the overlying relation of the wire with reference to the squared surfaces of the nuts 6, the wires will be instrumental in holding the nuts from rotation with a locking effect.

I have thus produced an improved furniture bracing device possessing important commercial advantages including simplified assembling of the parts resulting from the employment of standard chain links for the tensional elements allowing for more readily determining the length of the tension elements and which, moreover, offers greater facility in installation by reason of the unit assembly or connected relation of the parts. A further advantage of my improved brace structure results from the independent and positive connection of each of the tension elements to the turn buckle connector members. In consequence, the bracing effect is similar to that produced by tension elements in crossed diagonal arrangement, from which it follows that upon the loosening of the single tension element, the securing values of the remaining elements will be effected to a negligible degree, if at all. There is thereby eliminated an important objection to many forms of furniture bracing devices wherein upon the loosening of a tension element the effect thereof is transmitted to the remaining elements by reason of the allowable translation or shifting movement of the coupler or turn buckle parts.

While I have illustrated an improved embodiment of the features of my invention, it will be understood that modifications may be made in the form and arrangement of the parts without departing from the scope of the invention as defined in the appended claims. It is, therefore, intended that all matter herein shall be interpreted as illustrative and not in a limited sense.

Having described my invention, I claim:

1. A furniture bracing device comprising tension elements, an adjustable coupler member therefor, comprising a coupler shank having its opposite end portions reversely threaded and having an intermediate shoulder portion for the engagement of a manipulating tool, nuts threaded to the shank end portions, connector members fitted to the shank inwardly of the nuts, said connector members being formed of stamped metal with their outer portions bending outwardly in angular relation to the body thereof and having their opposite sides slotted to form key shoulders for securing engagement with the tension elements in position whereby the latter are positioned to operate as locks for the nuts, substantially as described.

2. A furniture bracing device comprising tension elements, an adjustable coupler member therefor, comprising a coupler shank having its opposite end portions reversely threaded and having an intermediate shoulder portion for the engagement of a manipulating tool, nuts threaded to the shank end portions, connector members fitted to the shank inwardly of the nuts, said connector members being formed of stamped metal with their outer portions bending outwardly in angular relation to the body thereof and having their opposite sides slotted to form key shoulders for securing engagement with the tension elements and said tension elements comprising chain links engaging with said shoulders and positioned to be engaged by the nuts to operate as locks therefor, substantially as described.

3. A furniture bracing device comprising tension elements, an adjustable coupler member therefor comprising a coupler shank hav-

ing its opposite end portions reversely threaded and having an intermediate shoulder portion for the engagement of a manipulating tool, nuts threaded to the shank end portions, connector members fitted upon the shank inwardly of the nuts and having securing engagement with the tension elements and said tension elements comprising chain links positioned to be engaged by the nuts to operate as locks therefor.

Signed at New York city, in the county of New York and State of New York, this 29th day of April, A. D. 1925.

GEORGE W. L. PRETTYMAN.