

949,108.

J. ABEL.
FURNITURE CONSTRUCTION.
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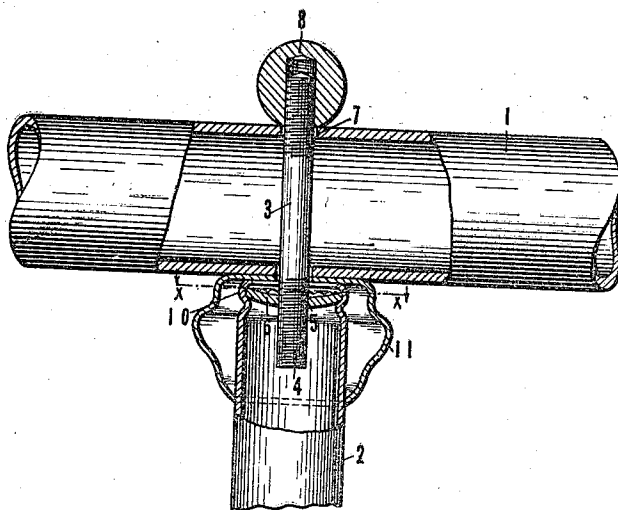


Fig. 1.

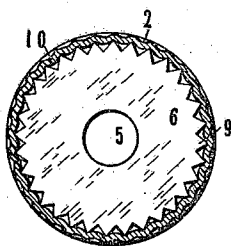


Fig. 2.

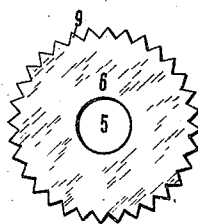


Fig. 3.



Fig. 4.

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FURNITURE CONSTRUCTION.

949,108.

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To all whom it may concern:

Be it known that I, JOHN ABEL, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Furniture Construction, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the connection of tubular members of any shape, as in the manufacture of metal beds and similar furniture.

One of the objects thereof is to provide an efficient fastening device which may be inserted within a tubular member without bulging the same, and which may be placed in position without it being necessary to cut the member externally.

Another object is to provide a fastening device to be used in a construction of this character which may be readily and quickly secured within the end of a tubular member and which will be held firmly against rotation therein during the assembling of the parts.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claim.

In the accompanying drawings is shown one of various possible embodiments of this invention.

Figure 1 represents two tubular members connected to one another, parts thereof being broken away for the sake of clearness; Fig. 2 is a sectional view taken along the line $x-x$ of Fig. 1; Fig. 3 is a plan view of one of the improved nuts; and Fig. 4 is an edge view of the nut shown in Fig. 3.

Similar reference characters refer to similar parts throughout the several views of the drawings.

The general character and objects of the invention will be in a large measure apparent from the drawings without further discussion preliminary to the specific description thereof. It may be noted, however, that in constructions of this character

it has heretofore been usual to employ nuts provided with laterally extending lugs adapted to engage recesses formed in the end of the tubular members. The objection to this construction is that there is a tendency to bulge the sides of the tube when forming the recesses and there is also a tendency to open the seam of the sheathing which is usually placed around the tube, which necessitates the use of a die or other similar means to close the same. In using nuts of this character it was also found necessary to ream the end of the tube in order to remove any bur which may have been formed thereon during the cutting of the same. Attempts have been made to use certain peculiarly shaped nuts but they have proved difficult to place in position and insecure in use. The above and other defects are remedied in the construction hereinafter described.

Referring to the drawings, in which, by way of illustration, a portion of a bed frame is shown, 1 indicates one of the horizontal members of the frame and 2 a vertical member or spindle secured thereto and extending laterally therefrom. The members are retained in assembled position by means of a bolt 3 extending through suitable openings formed in the member 1 and provided with a threaded end 4 extending into member 2 and engaging the threaded opening 5 formed centrally in a nut 6. The outwardly extending end of the bolt 3 passes loosely through an opening 7 and is preferably threaded to receive a spherical knob or head 8.

The nut 6 which is preferably dished as clearly shown in Fig. 1, may be formed of sheet steel. About the edge of this nut are formed a series of teeth 9, for a purpose hereinafter described. These nuts may, of course, be made in suitable sizes for use with tubular members of various diameters, the nut to be used in connection with any particular member being preferably slightly larger than the interior diameter thereof.

To assemble the parts, the nut is first placed upon one end of the tube 2 with its convex surface resting upon the edge thereof, which will assist in correctly positioning the nut with respect to the member, and it is then forced inward by any suitable means, during which operation the teeth 9 will cut through any bur which may have been formed upon the end of the tube, and will also cut into its inner surface to a slight ex-

tent. After the nut is thus positioned in
 the end of the tubular member, the latter is
 subjected to pressure by means of a die or
 any other suitable device by means of which
 5 its walls will be forced inward above and
 below the nut and at the same time some of
 the metal will be forced inward into the de-
 pressions 10 between the teeth, as clearly in-
 dicated in Fig. 2. This construction pro-
 10 vides an extremely firm seat for the nut
 which, it will be seen, is effectually prevented
 from moving longitudinally of the tubular
 member as well as from rotating therein.
 The tubular member with the nut affixed
 15 therein, as described, is then secured to the
 horizontal tubular member 1 by means of
 the bolt 3 in the usual manner, a suitable
 ornamental cap 11 being preferably placed
 20 in position over the end of the tubular mem-
 ber 2 to present a more finished condition to
 the structure. The ornamental head 8 is
 then placed in position upon the exposed
 threaded end of the bolt 3 by means of which
 25 the tubular members are securely retained
 in their assembled position. The rounded
 lower surface of head 8 accurately centers
 the bolt with respect to the opening 7, and
 thus accurately positions the parts.

It will thus be seen from the above de-
 30 scription that the tubular members are effi-
 ciently joined to form a construction in
 which the above-mentioned objections are
 avoided and in which the chance of any
 movement of the nut within its inclosing tu-
 35 bular member is avoided.

As many changes could be made in the
 above construction and many apparently
 widely different embodiments of this inven-
 40 tion could be made without departing from
 the scope thereof, it is intended that all mat-

ter contained in the above description or
 shown in the accompanying drawings shall
 be interpreted as illustrative and not in a
 limiting sense. It is also to be understood
 that the language used in the following
 15 claim is intended to cover all of the generic
 and specific features of the invention herein
 described, and all statements of the scope of
 the invention which, as a matter of language,
 might be said to fall therebetween. 50

Having described my invention, what I
 claim as new and desire to secure by Letters
 Patent is:

In a construction of the class described,
 in combination, a tubular member, a second 55
 tubular member adjacent thereto and dis-
 posed at an angle therewith, fastening
 means passing through one wall of said first
 member and extending into said second mem- 60
 ber, and a dished nut located within said
 second member and provided with means
 co-acting with said fastening means for re-
 taining said tubular members in assembled
 relation, said nut being of a diameter
 slightly greater than the internal diameter 65
 of the body portion of said second tubular
 member and having teeth formed in its pe-
 riphery adapted to point toward said first
 mentioned tubular member whereby when
 said nut is inserted in said second tubular 70
 member said teeth will cut into the interior
 surface thereof to prevent rotative move-
 ment of said nut and prevent withdrawal as
 the fastening means is tightened.

In testimony whereof I affix my signature, 75
 in the presence of two witnesses.

JOHN ABEL.

Witnesses:

ROYAL W. FRANCE,
 DANIEL J. DUNN.