

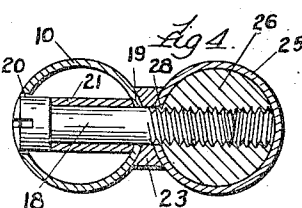
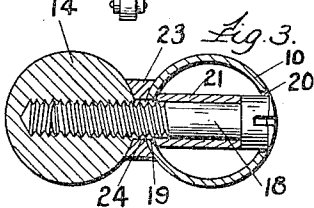
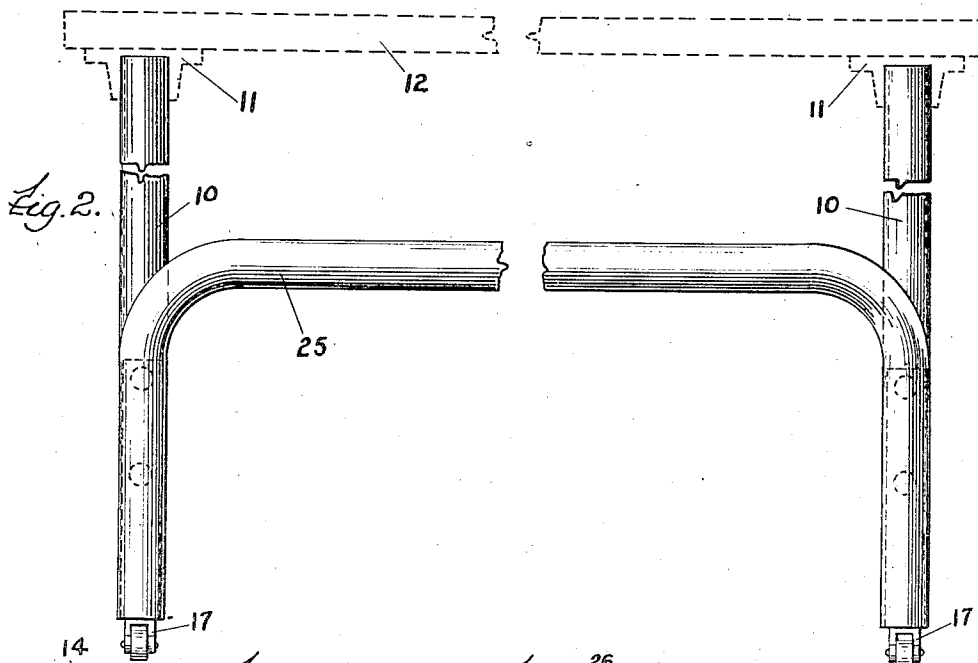
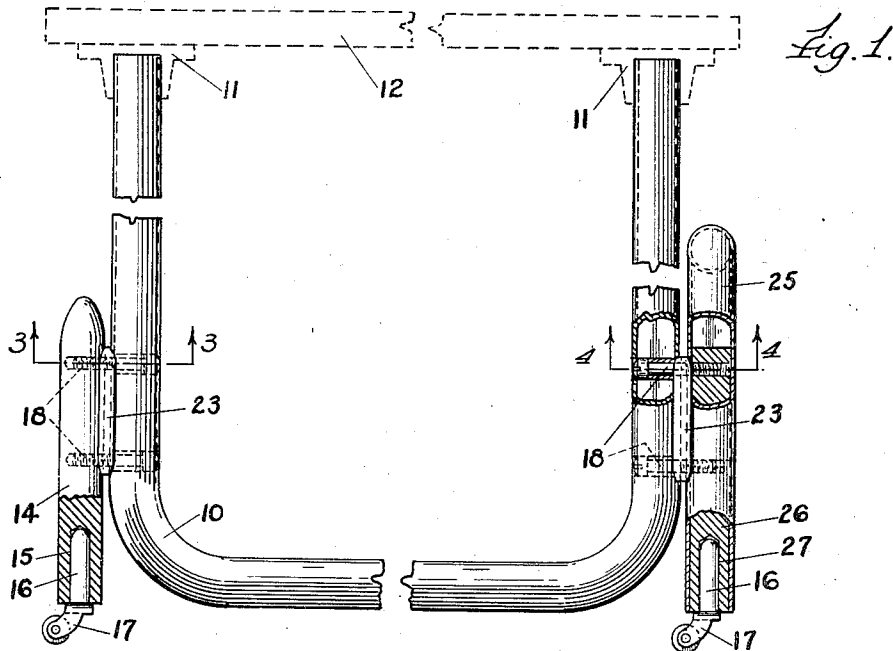
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UNDERFRAME CONSTRUCTION

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UNDERFRAME CONSTRUCTION

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5 Claims. (Cl. 248—163)

This invention relates to under-frame constructions, such as for chairs, tables, and table-like structures for supporting various operating mechanisms, such as household ironers and the like.

More particularly, the present invention is directed to under-frame structures fabricated of tubular elements formed and arranged for receiving casters for direct supporting engagement with the floor or solid surfaces.

The use of tubular elements in under-frame structures has certain well recognized advantages, such as reduction in weight, increased strength, ease and economy of manufacture and novel appearance. Frequently such structures include frame portions formed of a single piece of tubular stock, bent in various forms, such as U-shape and the like. In many structures so constructed the use of supporting casters is highly desirable, but because structures of this type do not readily lend themselves for such use it has been a difficult problem to devise suitable and practical caster mountings.

It is, therefore, one of the primary objects of this invention to devise a novel and practical form of caster mounting for use with under-frame structures formed of tubular stock.

Another object is to provide a novel and improved form of detachable connection for tubular elements of an under-frame structure.

A further object is to provide, in a tubular frame having portions disposed in substantially parallel relation, improved fastening means for said portions, including means tending to maintain said tubular portions in aligned relation.

And another object of this invention is to provide in an under-frame structure of the character indicated, an improved form of caster support and mounting which is of simple, rugged construction, capable of being easily assembled and which may be economically produced.

Other objects and advantages of our invention will appear in the following description, taken in connection with the accompanying drawing in which:—

Fig. 1 is an end elevation of the under-frame structure, embodying the present invention; parts being broken to condense the view.

Fig. 2 is a side elevation, with parts broken to condense the view.

Figs. 3 and 4 are transverse horizontal sections, taken as indicated at lines 3—3 and 4—4 respectively on Fig. 1.

The under-frame structure selected for purpose of illustration in the drawing includes a pair of U-

shaped end frames 10, formed of tubular stock having the upper ends of the respective legs connected in any suitable manner, as by fixtures 11, indicated in dotted outline, to a supporting, table-like element, 12, also indicated in dotted outline.

Each of a pair of corresponding legs of the respective end frames 10, are provided with caster supporting elements, adjacent the lower end thereof, comprising a body, 14, preferably of solid material such as metal, of cylindrical cross-section, disposed in juxtaposed parallel relation to said leg. The lower end of said caster supporting elements 14, terminate substantially flush with the under surface of the middle portion of said end frames, as may be seen in the drawing, and are each provided with an upwardly extending bore, 15, serving as a socket for the shank 16, of a roller caster designated 17. It is to be understood that the term "caster" as used in the claims is intended to also include the types having a flat or convex foot adapted for sliding engagement with the surface of the floor.

The caster supporting bodies 14 are each detachably secured to the respective legs of the end frames by a pair of vertically spaced cap screws 18 which extend freely through a pair of aligned apertures 19 and 20, in the tubular leg and have threaded engagement in the caster supporting body 14, as seen in Fig. 3. Circumscribing the outer portion of each screw, and disposed interiorly of the leg, is a sleeve 21, abutting at opposite ends against the under side of the head of the screw and the opposite inner wall surface of the tubular leg so as to prevent crushing or deformation of the tubular leg, while insuring a rigid connection of the body 14 to said leg. The cap screw desirably is of the fillister head type and the aperture 20 is of such size as to permit passage of the head therethrough, while the sleeve 21 is of such length that when the screw is driven in tightly the head thereof is disposed substantially flush with the exterior surface of the tubular leg.

Interposed between the caster supporting bodies 14 and the corresponding legs of the end frames, are filler blocks 23, having properly spaced apertures 24, for accommodating the screws 18. The opposite faces of these filler blocks are of concave form, as seen in Figs. 3 and 4, which provide seats for and tend to maintain the bodies 14 and the corresponding legs of the end frames in vertical alignment.

It is to be understood that if desired each leg of the end frames may be provided with a caster supporting body as above described. However, in many instances it is desirable to reinforce

and stabilize the end frames by a tie member, and for this purpose we prefer employing a tie member 25, of tubular stock of inverted U-shape with the leg portions thereof disposed in juxtaposed parallel relation to the lower portions of the other corresponding legs of said end frames, as may be seen in the drawing. Because the legs of the end frames 10 and tie member 25 are of tubular stock we preferably insert a plug 26, into the lower ends of the legs of the tie member. The lower ends of said plugs are each provided with a bore 27, for receiving the shank 16 of the roller caster 17. The mode of fastening the respective pairs of legs of the tie member and end frames, with filler blocks 23 interposed, is substantially the same as above described with respect to the bodies 14, except that the cap screws 18 extend through apertures, 28 in the leg of the tie member 25 and have threaded engagement in the filler plugs 26 in said legs.

Although we have shown and described certain preferred embodiments of our invention, manifestly it is capable of modification and rearrangement without departing from the spirit and scope thereof. We do not, therefore, wish to be understood as limiting our invention to the specific embodiments disclosed herein, except as we may be so limited in the appended claims.

We claim:

1. In a frame structure of the character indicated, a tubular frame member, an element adapted to be secured to the tubular member, and means for rigidly connecting said member and element together, comprising a headed screw extending freely through a pair of oppositely disposed apertures formed in the wall of said tubular member and having threaded engagement with said element, and a sleeve surrounding the screw and embraced between the inner wall of said member and the underside of the head of said screw, the aperture in said member, remote from the plane of connection to said element, being of such size as to permit said head of the screw to be disposed substantially within the outer contour of said tubular member.

2. In a frame structure of the character described, a tubular frame member, a support member adapted to be secured to said frame member, and means for rigidly connecting said members together, comprising a headed screw extending

freely through a pair of oppositely disposed apertures in said frame member and having threaded engagement with said support member, and a sleeve surrounding the screw and embraced between the inner wall of said frame member and the under side of the head of said screw.

3. In a frame structure of the character described, a tubular member of substantially circular cross section, a support of circular cross-section including a portion disposed in juxtaposed parallel relation to said tubular member, a filler block interposed between said tubular member and support and having oppositely formed concave surfaces to maintain said member and support in parallel relation, and means extending through said tubular member and filler block, engaging said support for rigidly securing the latter to said tubular member.

4. In a frame structure of the character described, a tubular member of substantially circular cross section, a support of circular cross-section including a portion disposed in juxtaposed parallel relation to said tubular member, a filler block interposed between said member and support and having oppositely formed concave surfaces to maintain said member and support portion in parallel relation, and means extending through said tubular member and filler block, engaging said support for rigidly securing the latter to said member, said means including a headed screw extending freely through a pair of oppositely disposed apertures in said tubular member and aperture in said filler block and having threaded engagement with said support, and a sleeve on the screw, embraced between the inner wall of said tubular member and the under side of the head of said screw.

5. A frame structure of the character described, comprising a pair of U-shaped end frame members of tubular stock, an inverted U-shaped cross frame member of tubular stock adapted to be connected to corresponding legs of said end frame, the lower ends of the legs of said cross member each having a solid plug therein, formed to receive a caster, and means for rigidly connecting said corresponding legs of the end frames to said legs of the cross member.

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