July 15, 1952 M. GREITZER 2,603,513

JOINT FOR TUBULAR METAL FURNITURE FRAMES

Filed Oct. 22, 1948

Fig. 1.

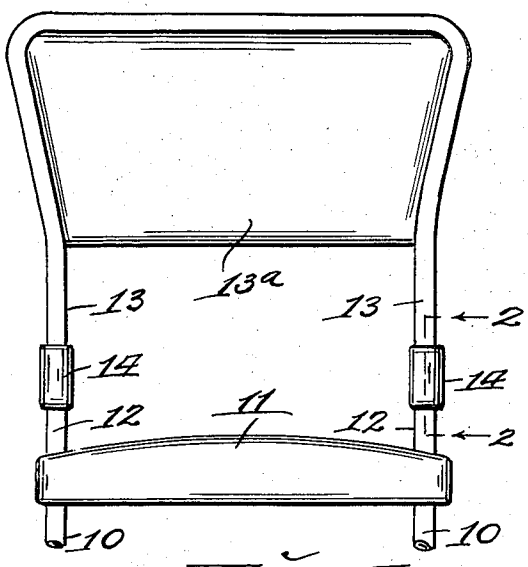


Fig. 2.

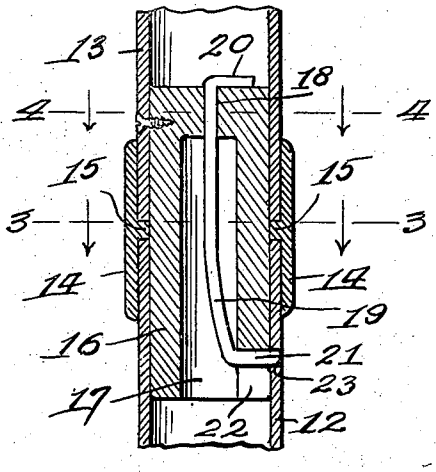


Fig. 3.

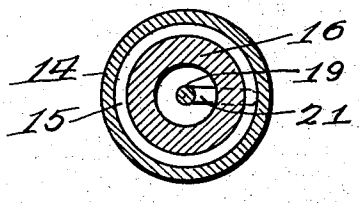


Fig. 4.

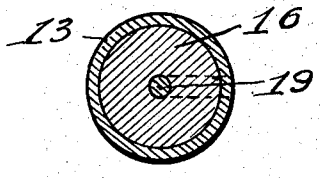


Fig. 5.

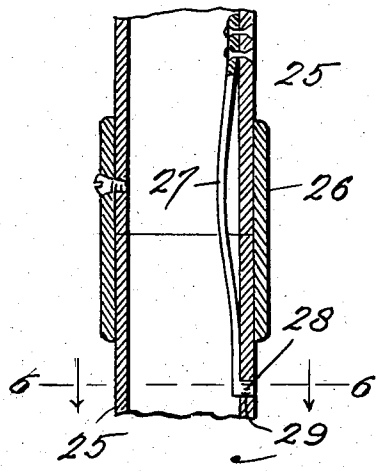
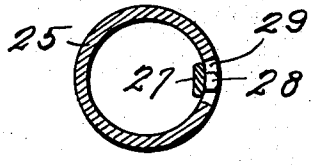


Fig. 6.



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2,603,513

JOINT FOR TUBULAR METAL FURNITURE FRAMES

Meyer Greitzer, Los Angeles, Calif.

Application October 22, 1948, Serial No. 55,990

1 Claim. (Cl. 287—119)

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My invention relates to a joint structure for metal tubes, particularly those tubes used in the production of chairs and like articles of furniture, and the principal object of my invention is to provide a joint for metal tubing which is simple in structure, inexpensive of production, having a high degree of strength and stability, and which is capable of being easily and quickly disconnected when the assembled parts are knocked down for storage and transportation.

A further object of my invention is to provide a joint of the character referred to which may be readily connected and disconnected without the requirement of special tools, wrenches, pliers or the like, and the joint, when properly connected, presenting a neat and finished appearance.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts which will be hereinafter more fully described and claimed and illustrated in the accompanying drawing, in which:

Fig. 1 is a front elevational view of the upper portion of a metal frame chair and with my improved joints in the upright back supporting members.

Fig. 2 is an enlarged vertical section taken on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2.

Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 2.

Fig. 5 is a vertical section similar to Fig. 2 and showing a modified form of the joint.

Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 5.

Referring by numerals to the accompanying drawing, particularly Figs. 1 to 4, inclusive, 10 designates the front legs of a tubular metal chair frame, 11 the chair seat, 12 short upright tubular frame members at the rear of the seat frame, 13 upright tubular back supporting members which are detachably connected to members 12 by my improved joints and 13a, the chair back. Surrounding the adjacent ends of members 12 and 13 are collars or short sleeves 14, each having an internal circumferential flange 15 which fits snugly between the ends of the corresponding tubes 12 and 13.

Suitably secured by screws or otherwise in the upper portion of each member 13, is a plug 16 of metal, plastics or the like, provided in lower portion with an axial bore 17 and in its upper portion with a smaller bore 18.

Fitting snugly in bore 18 is the upper portion of

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a resilient arm 19, preferably wire, the upper end portion 20 of which is bent at right angles and positioned on top of plug 16. The lower end portion of this arm is bent at right angles to provide a finger 21, which projects through a notch 22 formed in the lower end portion of plug 16 and into an aperture 23, formed in the wall of tube 12. Thus arm 19 provides a resilient hook that serves to latch and secure tubes 12 and 13 to each other. To assemble the joint, tubes 12 and 13 are fitted into collar 14, with their ends bearing on flange 15, with finger 21 seated in aperture 23, thus providing a firm and substantial connection between tubes 12 and 13, with no portion of the latching means other than the end of finger 21, exposed on the exterior of the joint. To disconnect the joint, it is only necessary to push finger inwardly until it clears aperture 22, thus enabling tube 13 to be withdrawn from collar 14 and upper portion of plug 16.

In the modified form of joint shown in Figs. 5 and 6, the abutting ends of tubes 25 are seated in a ferrule or sleeve 26, and disposed within the adjacent ends of said tubes is a resilient arm 27, one end of which is suitably secured to the wall of one of said tubes and the free end of said arm carrying on its outer face a stud 28 adapted to enter a short horizontally disposed slot 29 formed in the wall of the adjacent tube.

In this form of joint, sleeve 26 is suitably secured by screws, rivets or welding to one of the tubes 25, preferably the one to which arm 27 is secured.

To disconnect this form of joint, it is only necessary to push pin 28 inwardly out of slot 29 and then pull the tubes 25 apart. While my improved joint is especially designed for detachably connecting parts of tubular metal chair frames, it may be used with equal advantage in connecting tubes of various structures where a strong, compact and readily connected and disconnected joint is required.

The tubular joint structure herein disclosed is an improvement which may be advantageously employed in the chairs disclosed in my co-pending patent applications filed June 30, 1945, Ser. No. 602,531, now Patent Number 2,461,055, issued February 8, 1949, and Ser. No. 768,452, filed August 13, 1947, now Patent #2,525,126, issued October 10, 1950, also Patent #2,306,878, issued December 29, 1942, to me, the assignee of Morris Greitzer.

Thus it will be seen that I have provided a tube joint that is simple in structure, inexpensive of manufacture and very effective in performing the functions for which it is intended.

Minor changes in the size, form and construction of the various parts of my improved tube joint may be made and substituted for those herein shown and described, without departing from the spirit of my invention, the scope of which is set forth in the appended claim.

I claim as my invention:

In a tubular joint construction, the combination with a pair of aligned tubes spaced slightly apart, of a plug secured within one of said tubes and projecting into the other, said plug being provided throughout its length with an axial bore, and at one end with a smaller bore, the end of the plug having said axial bore being provided with a notch, with the end of the tube into which said plug projects provided with an aperture registering with said notch, a spring latch having one end secured in the smaller bore in said plug, with the free end of said latch entering said notch and registering aperture when the tubes are connected, a collar surrounding the ends of the connected tubes and an internal flange on said collar fitting in the space between said tubes when same are connected.

MEYER GREITZER.

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