Dec. 24, 1957 M. I. THOMAS 2,817,392

WEB FASTENING

Filed April 1, 1957

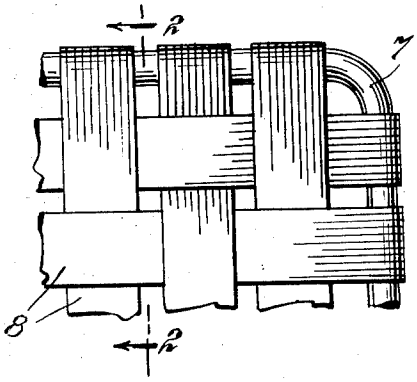


Fig. 1.

Fig. 2.

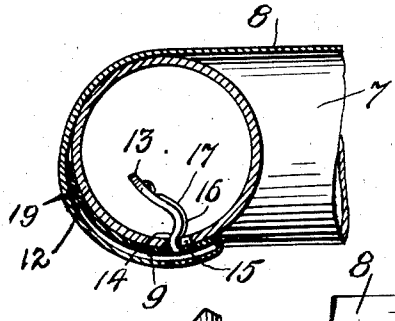


Fig. 4.

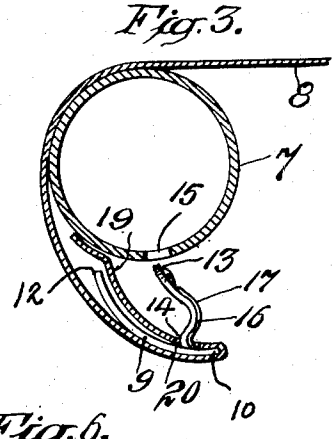


Fig. 3.

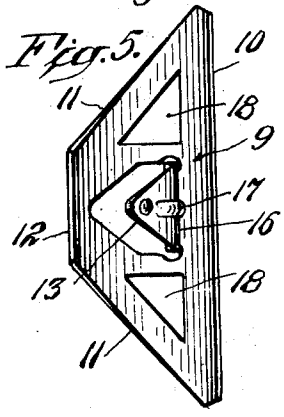


Fig. 5.

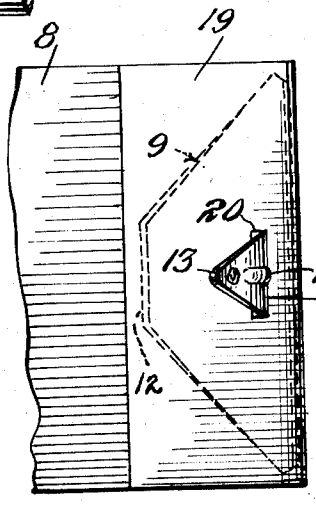


Fig. 6.

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WEB FASTENING

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3 Claims. (Cl. 155—187)

The invention herein disclosed relates to the securing of strips of webbing used on metal furniture.

It has been the practice in the manufacture of such articles as folding chairs made of aluminum tubing, to secure the webbing by looping it about the frame members in various ways and by means of straps and cords and the like.

Such methods have required the exercise of special care and skill and involved considerable time and use of extra and special materials, all resulting in higher costs.

Objects of the present invention are to avoid and eliminate these and other faults and objections and to provide fastenings which can be quickly and easily applied or removed which will be inexpensive and which will actually be stronger and better than fastening means such as heretofore used.

Particular objects of the invention are to provide a light and small form of fastening which can be put on or taken off by hand and which will make a neat connection of the webbing with the frame and be entirely concealed and out of the way.

Other desirable objects and the novel features through which the purposes of the invention are attained are set forth and will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates a present, practical commercial embodiment of the invention. It is realized, however, that structure may be modified and changed, all within the true intent and scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawing is a broken front elevation of a chair-back made up of webbing attached to a tubular frame and incorporating the fastening means of this invention.

Fig. 2 is a broken vertical sectional view of such a chair as taken on a plane indicated by line 2—2 of Fig. 1.

Fig. 3 is an enlarged broken sectional view showing one of the fasteners caught in the doubled end of a length of webbing in position ready to be snapped into locked engagement with the frame.

Fig. 4 is a similar view showing the fastener fully engaged and locked in position securing the webbing. This view may be considered as taken on line 4—4 of Fig. 2.

Fig. 5 is a plan view of the fastener clip.

Fig. 6 is a broken plan showing the clip engaged in the doubled-over end of the webbing.

In Figs. 1 and 2, a folding chair of more or less typical design is illustrated, made up of aluminum tubing 7 and interlaced strips of webbing 8, usually woven plastic or fabric.

The fasteners, as shown in Fig. 5, consist in each case of a single, curved sheet metal plate 9 of approximately truncated, triangular shape providing a long base edge 10, inclined sides 11, and a reduced end edge 12 parallel to the base edge.

This plate is curved from the elongated base edge 10 to the lesser end edge 12 on an arc approximating that of the tubular frame members so as to fit closely against the tubing with a wrap of the webbing about the same.

The fastener is held to the tubing by an integral prong 13 stuck up out of the concave side of the plate at a sharp angle to provide a shoulder 14 for engagement with the front edge of a slot 15 in the tubing, and beyond that reversely bent into a shoulder 16 for overlying the rearward edge of that same slot.

The holding prong is further shown as longitudinally ribbed at 17 for stiffening purposes.

Also it is shown as pointed sufficiently to pass through an opening formed in the webbing.

For purposes of lightness, the plate may be perforated or skeletonized as indicated at 18.

While the triangular shape is desirable for purposes of lightness and for economy in blanking out the plates from strip material, this shape, while desirable, is not essential.

Fig. 6 shows how, in use, the fastener is enveloped in a turned back end portion 19 of the web looped over the elongated base edge of the plate with the holding prong passed through an opening 20 formed in the doubled-over part of the web. This may be a punched or preformed opening or an opening such as would be produced by forcing the holding prong through the web.

The fastener may be approximately as long as the web is wide, or of slightly less length as shown in Fig. 6 so as not to be exposed at all when clamped on the frame.

Fig. 6 also shows how the end of the doubled-over webbing extends slightly beyond the lesser edge of the fastener. This is to enable this end of the fastener plate to bind and clamp the free end of the webbing against the frame.

Fig. 3 shows how the fastener, after being caught in the end loop formed in the webbing, with the prong 13 extending through the opening 20 in the loop of webbing, is positioned over the frame with concave side of the plate and enveloping web toward the tubing in position for the prong to snap through the opening 15.

Fig. 4 shows how with a slight rocking movement, the prong will pass through the wall of the tubing and, in so doing, will clamp the loop of webbing against the outer wall of the tubing.

In this relation, the inner edge 12 of the plate will clamp and bind the overreaching end portion of the web against the tubing and the outer or base edge 10 of the plate will hold and grip the full width of the web with a snubbing action. This snubbing and binding action will increase as tension is applied to the webbing and consequently, the fastener will hold with greater effect as the load is increased.

The fasteners may be applied to the ends of the webbing after or before the webbing is assembled on the frame, and this can be entirely a hand operation.

When the fasteners, nested in the ends of the webbing, are applied to the frame, they will securely hold the webbing against all usual or even extraordinary loads but, at the same time, they may be easily removed usually by hand by applying direct lifting pressure to the base edge of the fastener, only sufficient force being needed for it to snap the shoulder portion 16 of the prong out of interlocked engagement in the tubing slot.

The fasteners are particularly light and small and inexpensive. They do not add bulk to the chair or other piece of furniture. They are entirely out of sight and they are strong and durable. They provide a secure, concealed connection of the webbing with the chair frame, and they can be both quickly and easily snapped into position or be removed without use of special tools or exercise of any special care or skill.

While usually made of sheet steel, the fastener plates, if desired, may be made of lighter material such as sheet aluminum.

In addition to holding the webbing by snubbing it about the base edge **10** and gripping and binding the end by the opposite edge **12**, the clip locates the end **19** where it will be gripped and clamped by the overlying portion of the webbing. This holding effect may be increased by lengthening the end portion **19**, Fig. 4, so that it will underlie the encircling part of the webbing for any desired distance.

What is claimed is:

1. Furniture structure, comprising a tubular member having a slot in the wall of the same, fabric in the nature of webbing and means for attaching said fabric to said member comprising a fastener plate curved to the approximate curvature of said tubular member, said plate having an elongated snubbing edge, said fabric being looped about said snubbing edge and extending in companion inner and outer layers from said snubbing edge back across the inner concave and outer convex sides of the plate, said plate with the fabric looped about the same being disposed in close fitting engagement over the slotted wall of said tubular member with the inner concave side of the same holding the inner layer of looped fabric against the wall of said member, and an inwardly projecting prong on the inner concave side of said plate extending through the layer of fabric on the concave side of the plate into and through said slot in said tubular member and thereby securing said plate and fabric to said tubular member with said fastener plate wholly covered and concealed between said looped layers of fabric.

2. The invention according to claim 1, with a shoulder on said prong projecting over the edge of said slot at the inner surface of the slotted wall for retaining said fastener plate in the fabric securing relation described.

3. The invention according to claim 1, in which said prong is inclined extending at an angle away from said snubbing edge of the fastener plate.

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