July 6, 1948. A. S. GOLDBERG 2,444,873

SECURING DEVICE

Filed March 27, 1947

Fig. 1

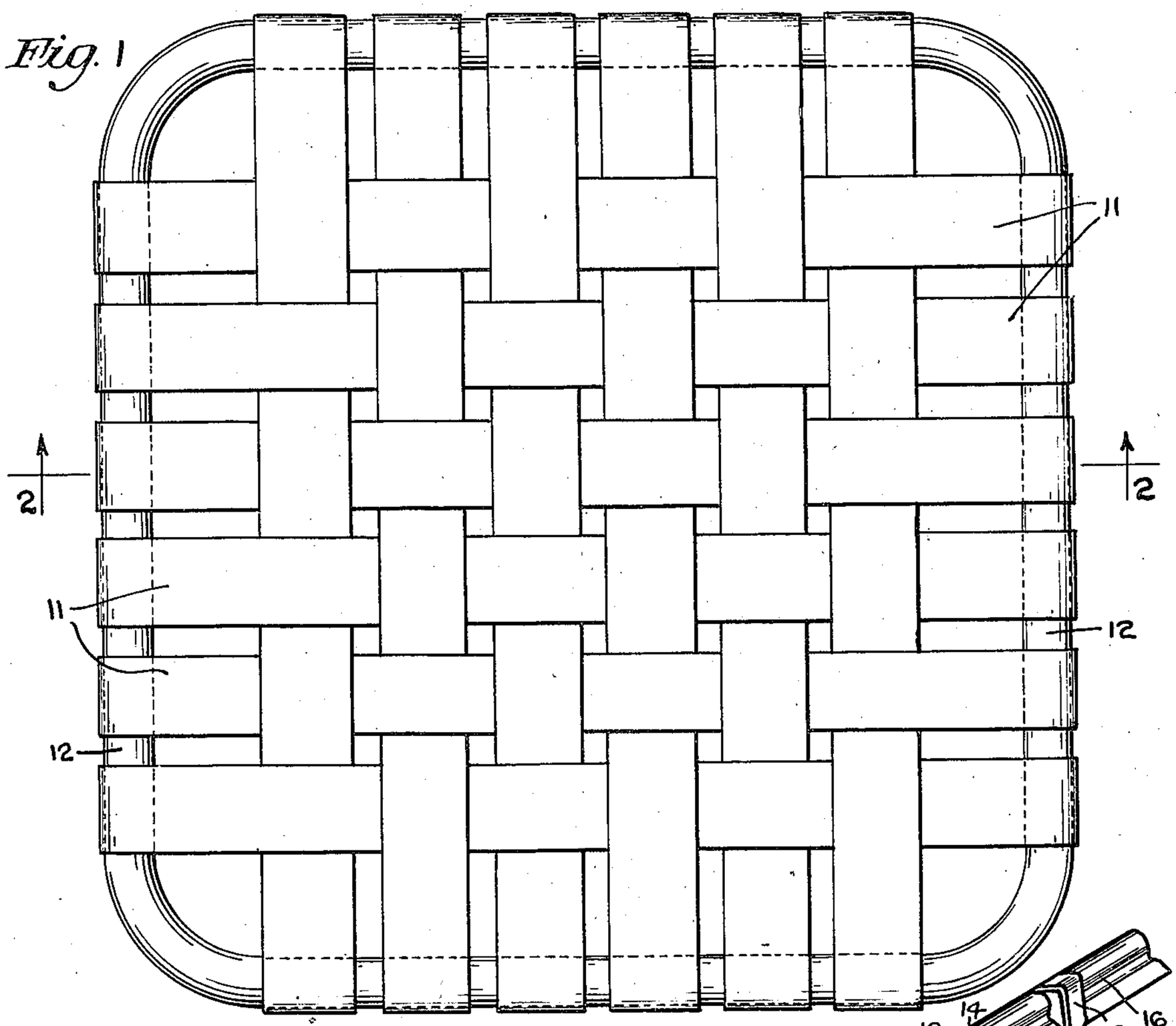

Fig. 2

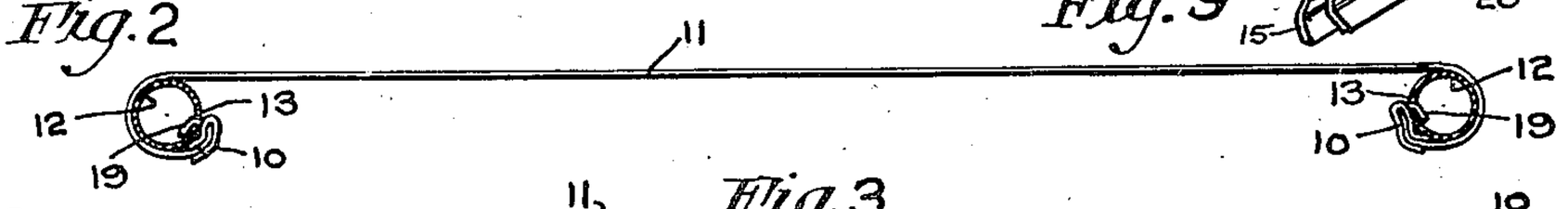

Fig. 3

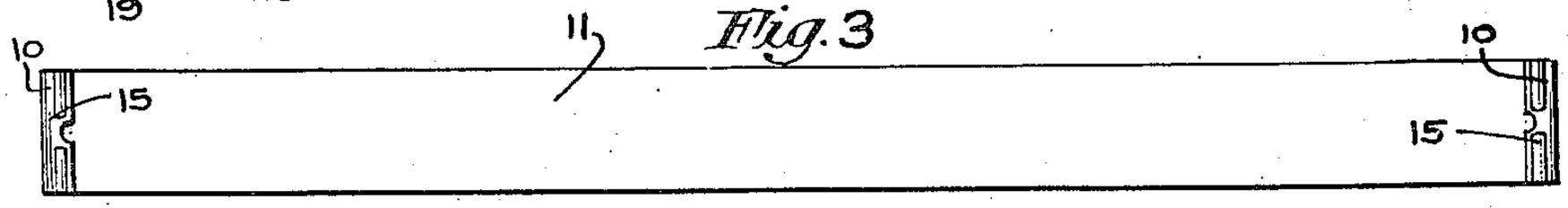

Fig. 9

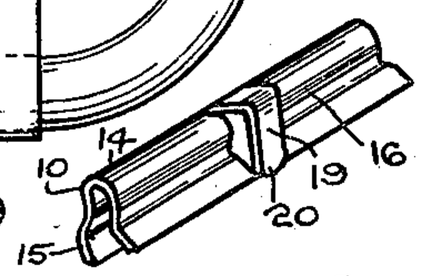

Fig. 4

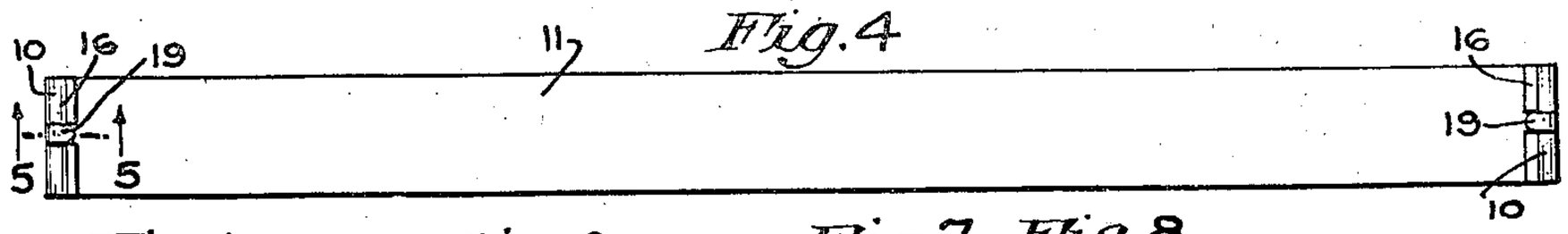

Fig. 5

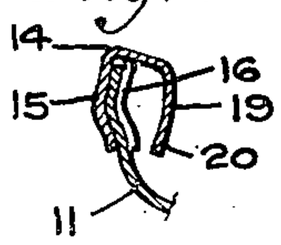

Fig. 6

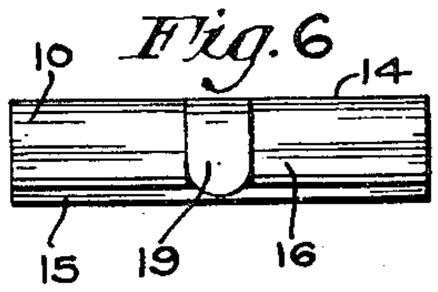

Fig. 7

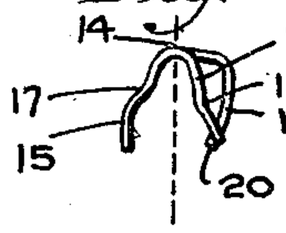

Fig. 8

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SECURING DEVICE

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Application March 27, 1947, Serial No. 737,636

1 Claim. (Cl. 155—187)

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This invention relates generally to seat and back constructions for chairs and the like, and more particularly to an improved construction of clip for securing in taut condition straps or webbing which extend transversely across the open frame of the seat and back units such as are employed in the construction of metal chairs and other such outdoor furniture.

Among the principal objects of the present invention is to provide a simple and economical construction of clip which is especially adapted for securement to straps or webbing of substantial width, the clip being of such form and so quick detachably anchored to the supporting frame for the webbing as to uniformly distribute over the full width of the taut webs all of the strains and stresses to which it is subjected in normal use.

Other objects and advantages of the clip of the present invention will appear more fully hereinafter, it being understood that the present invention consists substantially in the combination, construction, location and relative arrangement of parts, all as described in detail hereinafter, as shown in the accompanying drawings and as finally pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a plan view of a structural unit of an article of furniture such as a metal frame chair, showing the interlaced straps or webbing secured to the frame by the clips of the present invention;

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a top plan view of one of the strap elements having secured to each end thereof one of the clips of the present invention;

Figure 4 is a bottom plan view of the strap element of Figure 3;

Figure 5 is a sectional view taken on the line 5—5 of Figure 4;

Figure 6 is a front elevational view of one of the clips of the present invention;

Figure 7 is an end view of the clip;

Figure 8 is an edge view of an end portion of one of the clip-fitted straps; and

Figure 9 is a perspective view of the clip in its opened condition.

Referring now more particularly to the drawings, it will be observed that the clip of the present invention, designated generally by the reference numeral 10, is adapted to be secured to each end of a suitable length of strap or webbing 11, it being noted that each strap 11 is of a substantial width and of a length somewhat longer than the transverse dimension of the open frame

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12 over which said straps are stretched to form the seat or back surface of a chair, the top surface of a table or the surface of any other article consisting essentially of an open frame across which webbing is stretched to complete the same. In the particular form of unit shown in Figures 1 and 2 to illustrate the use of the clip of the present invention, the unit is in the form of a quadrilateral frame of tubular steel or other metal, the tubular frame being provided along each of its sides with longitudinally spaced apertures 13, these apertures being preferably each located in the inside, lower quadrant of the tube circumference.

The straps 11 may be of any suitable material having the requisite flexible, water-proof and non-stretch characteristics, a preferred material being a plastic the base composition of which is vinylidene chloride and vinyl chloride, although other materials may also be employed for the webbing, such as leather, imitation leather, cloth and even thin flexible strips or bands of metal.

In accordance with the present invention, each of the straps 11 is provided at its opposite ends with a clip member 10 of the form best shown in Figures 5 to 8, inclusive. As is shown in these figures, each clip member 10 is of a length approximately equal to the width of the strap 11 to which it is secured, the full length of the clip being bent along its median line 14 to provide a channel-shaped clip having the side wall portions 15 and 16, each of these wall portions being complementally crimped lengthwise thereof, as at 17 and 18. Struck out from the side wall portion 16 of the clip, approximately midway of its length, is a book-like element 19 having a freely extending terminal end 20 spaced laterally from the longitudinally extending median vertical plane of the clip, this plane being represented by the dotted line in Figure 7 and being that assumed by the strap 12 when it is fully extended between its clip-fitted ends as shown in Figures 3 and 4.

The clips 10 are preferably stamped or die pressed out of suitably rigid sheet metal into the form shown in Figures 6 and 7, the side wall portions 15 and 16 thereof being spread apart. In applying the clips to the straps 11, each terminal end of a strap is inserted into the open mouth of a clip whereupon the crimped side wall portions of the latter are pressed tightly together (see Figures 5 and 8) to securely clamp the strap end therebetween, the crimped walls serving to increase the frictional retention of the clip on the strap. In so crimping the clip upon the strap,

the side wall portion 16 thereof is shifted laterally of the hook-like element 19 so that the terminal end 20 of the latter is freely spaced from the body of the clip, as most clearly appears in Figures 5 and 8. It will be understood, of course, that the clips are secured to opposite ends of the strap in such manner that the elements 19 thereof are disposed to the same side of the strap and present toward each other, as shown in Figure 4.

The hook-like elements 19 of the clips respectively engage in the openings 13 formed in the frame member 12. In consequence of the fact that these openings 13 are located in the inside, lower quadrant portion of the tubular frame member, it will be apparent that when the clip elements 19 engage their respective openings in the frame, the flexible straps 11 are wrapped about the top, outer side and lower quadrant surfaces of the tubular frame members, thus providing adequate support for the straps at the same time that the clips are disposed more or less interiorly of the frame to conceal them from external view.

The several flexible straps 11 employed to form the supporting surface of the seat or back unit may be arranged as desired to provide varying ornamental effects, although it is preferable to interlace them as shown through the use of one set of straps extending from front to rear edge of their supporting frame and a second set of other straps extending from side to side of the frame. In all cases, the straps are secured in place under sufficient tension to reduce any tendency for the supporting surface formed thereof to sag, there being sufficient spring or give in the frame for the opposite sides thereof to be drawn together sufficiently to readily effect interengagement of the clip elements in their respective openings 13. Thereafter, as the opposite sides of the frames spring apart upon release of the compressive pressure thereon, the secured straps 11 become quite taut and their securing clips 10 become firmly seated in position. By virtue of the fact that the clip body extends across the full width of the strap to which it is secured, all of the stresses and strains to which the strap is subject in normal use are uniformly distributed over the full width thereof, in addition to which the clip of the present invention, due also to its extended length width-wise of the strap, adequately supports the strap against any tendency to twist out of its normal flat plane when it is stretched across its supporting frame.

It will be understood, of course, that the present invention is susceptible of various changes and modifications which may be made from time to time without departing from the general principles or real spirit of the present invention. Also, it will be apparent that the construction of the present invention is not limited in its application only to the formation of seat and back units for chairs, but instead may be employed in other articles of furniture wherein a frame is fitted with a set of bands or straps to provide it with a supporting surface. Accordingly it is intended to claim the present invention broadly as well as specifically as indicated in the present claim.

What is claimed as new and useful is:

A furniture structure comprising an open frame of tubular metal having a series of longitudinally spaced openings formed therein, each opening on one side of said frame being paired with an opening on the opposite side of said frame, a plurality of straps extending between opposite sides of the frame, and means for anchoring the opposite ends of each strap to the frame, said means including a channel-shaped clip clamped to the terminal end of each strap, the opposite side walls of each of said clips extending across the full width of the strap and being respectively crimped complementally to each other to securely lock the strap between the walls when the same are clamped together, said clips being each additionally provided with a hook-like element having a terminal end spaced laterally from a wall of the clip and engageable in an opening formed in the metal tubing of the frame aforesaid, the crimp in the clip wall immediately adjacent said hook-like element being in the form of a groove extending the full width of the clip, said groove being adapted to receive therein the external cylindrical surface of the metal tubing aforesaid whereby to maintain the clip securely in position with its axis paralleling that of the metal tubing.

AARON S. GOLDBERG.

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