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S. B. RADUNS ET AL

3,175,269

STRAP END GRIP

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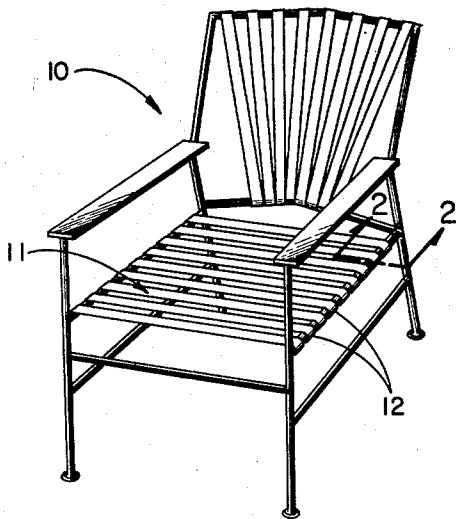


FIG. 1

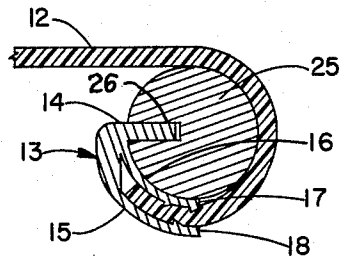


FIG. 2

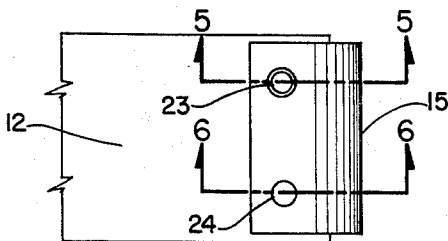


FIG. 4

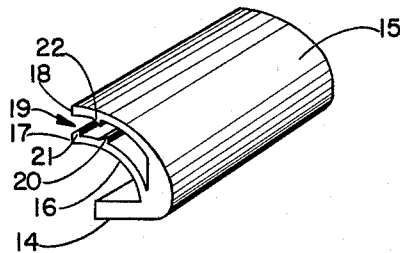


FIG. 3

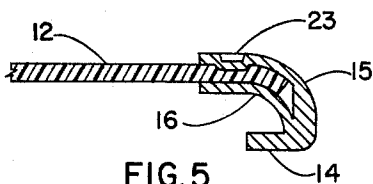


FIG. 5

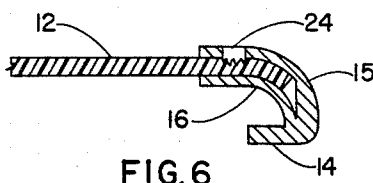


FIG. 6

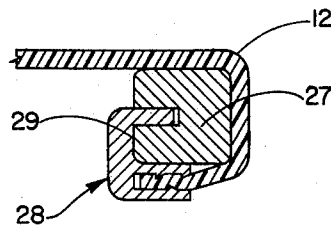


FIG. 7

INVENTORS,
Solomon B. Raduns
Wilbur Neal Willis
BY E. H. Schmidt, atty.

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STRAP END GRIP

Solomon B. Raduns, Miami Beach, and Wilbur Neal Willis, Miami, Fla., assignors to Scroll, Inc., Miami, Fla., a corporation of Florida

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Our invention relates to the fabrication of metal framework furniture and is directed particularly to an improved end grip for flexible straps forming seat elements of metal framework chairs and the like.

It is known, in the manufacture of ornamental or decorative metal frame chairs, benches and the like, to use interwoven or parallel straps of a strong, resilient material applied to the seat frame to provide an attractive and comfortable seat. Our invention has for its principal object the provision of an improved end grip for such straps which will be low in cost, easy to apply, neat and inconspicuous in appearance, and durable and dependable under hard usage.

Another object of the invention is to provide a metal strap and grip of the character described which can be inexpensively manufactured by extrusion.

A more particular object is to provide a strap end grip suitable for use with metal frames of various cross-sectional shape, and comprising means for securely connecting to a strap end at one side of the grip, a hook portion at the other side, and a slot formed along the inside of the metal frame operative to hookingly receive the hook portion upon assembly of the strap to the frame.

Other objects, features and advantages of our invention will be apparent from the following description when read with reference to the accompanying drawings. In the drawings, wherein like reference numbers denote corresponding parts throughout the several views:

FIG. 1 is an oblique view of an ornamental metal frame chair having a seat structure embodying the invention;

FIG. 2 is a cross-section view, taken along the line 2—2 of FIG. 1 and shown in enlarged scale, illustrating structural details of the strap end grip;

FIG. 3 is an oblique view of a strap grip member, shown separately;

FIG. 4 is a top view of a strap grip member shown attached to one end of a strap;

FIG. 5 is a vertical cross-sectional view taken along the line 5—5 of FIG. 4 and illustrating a method of enhancing the securement of the grip member to the strap;

FIG. 6 is a vertical cross-sectional view taken along the line 6—6 of FIG. 4 and illustrating an alternative method of securing the grip member to the strap; and

FIG. 7 is a cross-sectional view similar to that of FIG. 2, but illustrating a modification of the grip member for use with a seat framework of square or rectangular cross-section.

Referring now in detail to the drawings, the numeral 10 in FIG. 1 designates, by way of example, an ornamental metal chair having a seat 11 comprised of flexible, synthetic plastic straps 12, the ends of which are secured to the metal seat frame by end grips 13 embodying the invention. In FIG. 3 one of the metal grips 13 is shown separately, in oblique view and on enlarged scale, the same being of uniform cross-section along its length and adapted to be fabricated by extrusion, preferably of a strong, light-weight material such as aluminum. The grip 13 is provided with an inwardly-extending hook portion 14, of substantially rectangular cross-sectional shape, integrally formed with an arcuate portion 15, the inner surface 16 of which defines a segment of a cylindrical wall. The hook portion 14 extends inwardly, substantially in the radial direction with respect to the inner surface 16. The outer end of the arcuate portion 15 of the grip 13 is bifurcated along its length to provide inner and outer, opposed, gripping jaws 17 and 18, respectively, defining a deep, narrow throat 19 adapted to receive the end of a strap. Preferably, to improve gripping strength, the inner gripping jaw 17 is formed along the inside with spaced, parallel, longitudinally-extending continuous barbs or saw-tooth projections 20, 21, and the outer jaw 18 is provided with a similar projection 22.

In use, the end of a seat strap 12 will be placed fully within the throat 19 of a grip 13, after which the outer gripping jaw 18 will be pressed down, in any convenient manner, such as by use of a power press, so that said strap will be tightly clamped between the opposed gripping jaws. The barb-like projections 20, 21 and 22 within the jaws 17 and 18 will thus be imbedded in the strap end to insure firm gripping, even under very high pulling forces. To enhance gripping action, the outer gripping jaw 18 may also be swaged with a blunt tool to produce a deep indentation, as illustrated at 23 in FIGS. 4 and 5, or with a sharp tool to perforate and drive sharp metal projections into the strap, as illustrated at 24 in FIGS. 4 and 6.

In use, the straps 12 will be cut to proper length and grips 13 applied at each end as described above. As illustrated in FIG. 2, the chair seat frame is fabricated of round, solid metal stock 25, preferably of extruded aluminum, formed with a longitudinal slot 26 extending inwardly in the radial direction (see FIG. 2). The slot 26 faces the inside of the seat frame and is adapted to receive the hook portions 14 of the strap end grips 13. The resiliency of the straps 12 permits first one and then the other end grip 13 to be hooked in place at opposite sides of the chair frame, with the straps extending around the outsides of said frame and the grips 13 disposed inconspicuously beneath the chair seat, as clearly shown in FIG. 2. Frictional contact of end portions of the straps 12 and the cylindrical wall portions of the chair seat frame 25 serves to substantially diminish the pull of the strap ends with respect to the individual end grips 13.

FIG. 7 illustrates a modification of the end grip invention suitable for use with chair seat frames fabricated of square or rectangular stock 27. The end grip 28 of FIG. 7 differs from the grip 13 described above only in that the inner wall surface 29 thereof is of rectangular rather than arcuate shape, to complement the shape of the frame of rectangular cross-sectional shape to which it is applied.

While we have illustrated and described herein only two forms in which the invention may conveniently be embodied in practice, these forms are given by way of example only and not in a limiting sense. The invention, in brief, includes all the modifications and embodiments coming within the scope and spirit of the following claims.

What we claim as new and desire to secure by Letters Patent is:

1. In a furniture structure, the combination comprising, a framework of extruded metal having a circular cross-sectional shape and defining the periphery of an open area, said framework being formed with a radially-inwardly-extending slot along its length, a plurality of straps extending between opposite sides of said framework, and means for anchoring each end of each strap to the framework, said anchoring means including a metal member of uniform cross-sectional shape, one side of said member extending laterally to one side and being longitudinally slotted to provide a pair of opposed jaws

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defining a throat for receiving and connecting to a strap end, a hook at the other side of said member, said hook being laterally spaced from and extending inwardly in substantially the same direction as the open ends of said jaws, the inside surface of said member extending from said hook toward said strap-connecting end defining an arcuate contour conforming to the arcuate surface of said framework, said hook being receivable in hooking engagement in said slot with said inside surface of said member in face-to-face engagement with said arcuate surface of said framework for attaching said member to said framework.

2. A furniture structure as defined in claim 1, including protrusions formed in said jaws and extending into said throat.

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DONLEY J. STOCKING, *Primary Examiner.*

15 ABRAHAM G. STONE, *Examiner.*