Jan. 25, 1966 P. H. SECKEL 3,231,008

PLASTIC WEBBED FURNITURE

Original Filed Oct. 4, 1962

FIG. 1

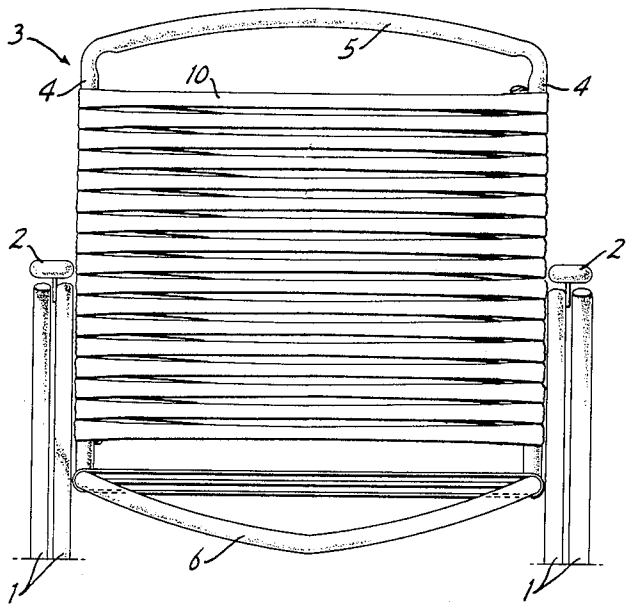


FIG. 4



FIG. 5

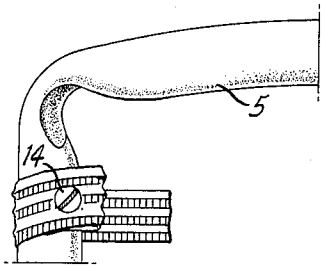


FIG. 2

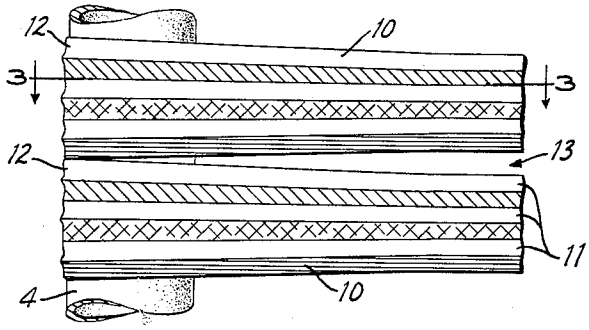
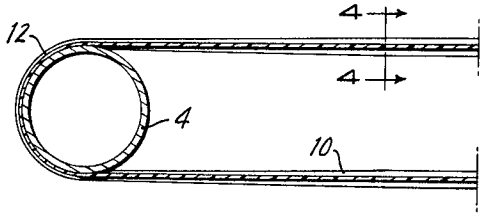


FIG. 3



INVENTOR.
PETER H. SECKEL

BY
Morgan, Finnegan, Durham & Pine
ATTORNEYS

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PLASTIC WEBBED FURNITURE

Peter H. Seckel, Wayne, N.J., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Continuation of application Ser. No. 228,406, Oct. 4, 1962. This application Mar. 1, 1965, Ser. No. 440,995
3 Claims. (Cl. 160—371)

This application is a continuation of U.S. patent application Serial No. 228,406 filed October 4, 1962, now abandoned.

This invention relates to improvements in air-gapped plastic webbed furniture used for seating, e. g., chairs, chaises, loungers and back-rests. In such constructions, the occupant is directly supported by plastic strips. The invention will be described in connection with patio chairs. But it should be understood that the principles of this invention are applicable to all types of open-work constructions utilizing plastic webbing as a means for directly supporting the occupant.

Early patio chairs were webbed with saran woven from monofilament. This woven structure provides desirable "breathing" properties which add to the comfort of the occupant. However it is relatively expensive to manufacture and to secure to the chair frame and it lacks control of elasticity.

Subsequently, air-gapped chairs were developed with webbing consisting of hollow tubular vinyl material. In this construction, the plastic tubing is strung side-by-side, i. e. successively under tension to span the seat and back of the chair's supporting frame. Such a construction provides an important advantage in that the tubes are flattened in these areas where they contact the chair support frame to provide permanent air gaps. Such air spaces between the tubes add to the comfort of the occupant. However, such tubular webbing is bulky as compared with the flat webs of woven saran, and it provides a substantial price differental because of large shipping and warehousing requirements. For example, 1900 feet of webbing requires 1 cu. ft. of space whereas only 350 feet of the tubes will occupy the same space.

For these reasons, attempts have been made to devise patio chairs constructed with webbing comprised of resilient flat extruded strips. However, no desirable air spaces are developed automatically in such an arrangement. Conversely, if the strips are placed on the frame with gaps therebetween, they tend to slide along the tubular supporting frame. Moreover, stripping made with variable width is expensive to manufacture and cannot be applied to the chair with the wider portions in registry with the frame by present automatic equipment.

Accordingly, the object of this invention is to provide furniture constructions having plastic webbing or stripping requiring relatively little space to warehouse and ship, the chairs being inexpensive to manufacture automatically with permanent air gaps for desirable breathing properties.

Briefly, the object of this invention is realized by providing a furniture construction having a support spanned under tension successively by an elastomeric extruded web or strip, each span of the webbing being butted against the next successive span where the spans are in contact with the support. The webbing normally has a uniform width, and it has a solid cross section with corrugations running longitudinally of the webbing, i.e., it has raised ribs longitudinally. When the webbing is placed on the support under tension, by wrapping or clamping, the web flattens and assumes a longer width than these areas when it contacts the support. Nevertheless, the corrugations preserve the original narrow conformation of the web in the space spanned between the chair side supports so

that a variable width and desirable air spaces are inherently and automatically obtained upon application of the webbing to the chair frame without any requirement of registry.

The corrugated strips of this invention may vary in design without departing from the principles of the invention. In the most preferred commercial embodiment of the invention, the design comprises three longitudinally extending corrugations on one side of the strip and two longitudinally extending corrugations on the other side. However, this exact number or relationship of corrugations is not necessary to achieve the advantage of the invention.

While the invention may be embodied in different forms of air-gap chair constructions, the invention is illustrated as embodied in a patio chair in FIGURES 1–5 of the accompanying drawings. In the drawings:

FIGURE 1 is a partial front elevation of a patio chair embodying the invention;

FIGURE 2 is a fragment of the front elevation of FIGURE 1;

FIGURE 3 is a section along the line 3—3 of FIGURE 2;

FIGURE 4 is a section along the line 4—4 of FIGURE 3; and,

FIGURE 5 is a fragmentary view of the patio chair of FIGURE 1 showing an alternative means of attaching the webbing of the invention to the chair frame.

Referring now to the embodiments shown in the drawings for purposes of illustration, the patio chair has the usual support consisting of legs 1 and arm rest 2 which carry a seat-back frame 3. The support and frame are comprised of aluminum tubing which is arranged to form the peripheral outline of the patio chair. The back portion of the frame consists of a continuous aluminum tube which is bent to form two spaced parallel side segments 4 extending generally vertically and a top segment 5 extending generally horizontally in spaced parallel relationship with the bottom segment 6. Similarly, the seat portion of the frame (not illustrated) consists of a continuous aluminum tube bent to form spaced parallel side segments and spaced parallel front and rear segments.

The webbing material is attached to the side segments of the frame in successive spans to span the space therebetween to provide support for the occupant sitting in the chair.

The webbing 10 of the present invention (FIGURES 1–5) is made from the elastomeric plastic material customarily used in patio chairs such as, for example, plasticized polyvinylchloride. It is a generally flat strip having longitudinal corrugations or ridges 11.

The webbing 10 is attached to the frame of the chair under tension. The portion 12 of the webbing which contacts the chair frame is in a flattened and widened condition while the corrugations 11 preserve the original width of the webbing in the areas spanning the chair frame. Thus, the webbing is attached to the chair frame with the flattened areas 12 in successive spans in butted condition but with air gaps 13 between the strip in the spaces spanning the chair frame.

The webbing strips 10 of the invention are attached to the chair frame by a screw 14 (FIGURE 5) or are wrapped around the frame (FIGURE 3) by the usual automatic wrapping equipment, with the flattened condition of the webbing 12 on the chair frame and the contracted condition in the spanning area therebetween.

As shown best in FIGURE 4, the preferred embodiment of the flat webbing strip 10 of the invention has three longitudinally extending corrugations 11 on one side of the strip and two longitudinally extending corrugations on the other side of the strip. However, this exact number or relationship of corrugations is not necessary to

achieve the advantages of the invention. A strip having only one longitudinally extending corrugation will achieve the objects of the invention, although for more advantageous use of the invention it is desirable to have at least two longitudinally extending corrugations.

The elastomeric strips **10** of the invention may be effectively used to create striping effects. For example, as illustrated in FIGURES 2 and 5, each corrugated section of the elastomeric extruded strip may be of a contrasting color. The parallel stripes thus formed during extrusion are preserved without twisting when the strips are riveted to or wrapped around the chair frame because the strips remain flat. They do not tend to twist when the webbing is installed on the chair.

The flat corrugated strips of the present invention are relatively inexpensive to ship and warehouse. The space requirement per linear foot is substantially less than the space requirement of the present practice hollow tubing described above and is generally comparable to the small space requirement of the prior practice saran webbing.

Since variations and departures from the details of the invention illustrated and described above may be made without departing from the principles of the invention, it should be understood that the invention is not limited to the details of the foregoing description and illustration except as appears hereinafter in the claims.

I claim:

1. A furniture construction comprising a pair of spaced, substantially parallel, rigid supports, the space between said supports being spanned by tensioned plastic webbing strips; each of said webbing strips having a substantially uniform normal width and a transverse cross-section having at least one corrugation, each corrugation extending lengthwise the entire length of the webbing strip, each strip being tightly engaged with each support and being substantially flat and devoid of corrugation in at least one complete cross-sectional area in engagement with each support, said one complete cross-sectional area having a dimension transverse to said strip greater than said uniform normal width of the strip, and said strips being in abutment with each other at said one complete cross-sectional area of each strip, such that the strips are spaced from each other between said supports.

2. A furniture construction according to claim **1** wherein said webbing strips are a continuous unit and are wrapped around each support.

3. A furniture construction according to claim **1** wherein each strip has a plurality of corrugations therein.

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HARRISON R. MOSELEY, *Primary Examiner.*