

SPECIFICATION

Furniture covering for seating structure or the like

The present invention relates to a resilient furniture covering which is especially for, but not exclusively limited to, seats or similar equipment employed in public locations and, more particularly, in public transportation vehicles.

In effect, it has been noted that during constant usage, the seats which are installed in public buildings or public transportation vehicles are frequently subjected to acts of vandalism and, as a result, are often found in a dilapidated condition so as to be rendered unfit for use.

Thus, for instance, the coverings of seats employed in public use are very frequently ripped or lacerated by means of knives, blunt or sharp objects and, as a consequence, must be frequently replaced.

It is presently known that such furniture coverings comprise, in general, an outer covering of fabric or of a plastics material which, in turn, covers a resilient padding or stuffing constituted, for example, of horsehair, kapok, or a foamed plastics material and, according to the thickness and the type of seat under consideration, is supported on either a rigid base, or on some rigid straps mounted on a frame, or even on a spring assembly.

It is apparent, from its properties and its thinness, that the material serving as the outer covering cannot withstand the tearing action of a sharp object and that, due to its very nature, the stuffing which is even less resistant to such an attack, renders it easy for the object to penetrate therethrough.

The present invention contemplates, broadly, the utilization of an outer covering formed of a relatively thick, pliable plastics material, and which is reinforced through the use of a network of tear-resistant fibres, such as, for example, metallic fibres.

According to the invention, there is provided a furniture upholstery covering for a seat or like article of furniture comprising an outer flexible cover layer of solid plastics material, a network of metallic spiral coil springs having their axes parallel with the cover layer in its undeformed state, the turns of each of the springs being intertwined with those of adjacent springs, and an intermediate connection layer of foamed plastics material on the underside of the cover layer in which the turns of the springs are only partly embedded.

An embodiment of the invention will now be described with reference to the accompanying drawings, in which:—

Figure 1 is a transverse sectional view of a portion of a furniture covering according to the invention, and,

Figure 2 is a perspective sectional view of the covering illustrated in Fig. 1.

Having reference to Figs. 1 and 2 of the drawings, the elements of the furniture covering

comprise a resilient outer cover 1 consisting of a layer of sheeting of solid polyvinyl chloride (PVC). This outer cover 1 is reinforced by a network 2 formed by a sheet of spiral metallic springs, such as generally employed in standard metal spring mattresses, through the intermediary of a layer 3 of foamed polyvinyl chloride (PVC). This foamed PVC thus adheres firmly to the outer cover and envelopes the upper portion of the trellis or ring spirals.

In the illustrative example, the network 2 is affixed at its periphery to a frame 4 which is formed of a continuous circular rod element.

It is evident that such an assembly allows for the collective effect of the flexible properties imparted to the outer cover 1, the foamed PVC layer 3, and the resilient network 2. Moreover, the intermediate layer 3 of foamed PVC prevents one from feeling the spirals of layer or springs 2, for example, when one is seated on the furniture or seat. Moreover, it ensures the preservation and the firmness of the outer cover.

In effect, in the instance where this intermediate layer is not present and in which the resilient network is attached directly to the outer cover by the top of its spirals the outer cover tends to become deformed and forms hollows intermediate each of the points of attachment so as to cause the exterior appearance of the furniture covering to become unsightly.

On the other hand, in the furniture covering according to the present invention, the outer cover is evenly supported by the intermediate layer which, due to its resiliency, causes the outer cover after changing shape to return to its original form.

Another advantage of such an arrangement lies in that, because the combination of the elements constituting the outer cover and the intermediate layer is superior to that which would be obtained by using only a single layer, it is possible to provide a less firm and, as a result, a lighter and less expensive resilient network.

In addition, the resistance to laceration of such furnishings is excellent, in essence:

First of all, the piercing action of a sharp object, such as a knife, will be immediately resisted by the relatively thick layer of the outer cover 1;

the penetration of the knife will then be stopped by the metallic network 2.

At this stage, the transverse stress caused by the cutting of the furniture covering will be contained by the spirals of the trellis or springs 2 which will hold back the point of a knife.

Consequently, the damage to which such furniture is subject will consist of slits of limited dimensions which are easily reglueable.

It will be noted that the layer of PVC comprising the outer cover 1 can advantageously be fireproofed so as to thereby impart, by reason of its thickness, an excellent fire resistance to the laminated covering structure of the furniture. This also applies to the layer 3.

In the event of the rupture of one of the metallic spirals of the network or springs 2, the end of this broken spiral will be able to penetrate the outer

cover or surface layer only with great difficulty, thus eliminating the risk of injuring the user of the furniture or seat.

- 5 The methods, previously described, of attaching the furniture covering to a seat can be varied and will depend upon the type of seat under consideration. In particular, the inventive covering can be used as a hammock because of its qualities of suppleness and resiliency, or else it can be
10 utilized as a standard furniture covering mounted on a spring skeleton frame.

It will be noted that the manufacture of this furniture covering can be effected as follows:

- 15 in a first step, the solid layer of PVC (outer cover 1) is moulded into its desired form;
in a second step, a layer 3 of foamed PVC is applied to the inside surface of this layer 1 which bonds together with the solid PVC layer 1;
and in a third step, the metallic network 2, i.e.
20 springs, is applied on the foamed PVC 3, either before or during polymerization, in such a manner that the upper portion of its spires of the springs is embedded in the foam 3.

- 25 These different manufacturing operations can be effectuated automatically, such as by using appropriate equipment, thereby resulting in much lower production costs than would be in making

the standard furnishings by hand.

CLAIMS

- 30 1. A furniture upholstery covering for a seat or like article of furniture comprising an outer flexible cover layer of solid plastics material, a network of metallic spiral coil springs having their axes parallel with the cover layer in its undeformed
35 state, the turns of each of the springs being intertwined with those of adjacent springs, and an intermediate connection layer of foamed plastics material on the underside of the cover layer in which the turns of the springs are only partly
40 embedded.
2. A covering according to claim 1 wherein said cover is made of the layer of polyvinyl chloride.
3. A covering according to claim 1 or 2 wherein said plastics material foam comprises a polyvinyl
45 foam.
4. A covering according to any of claims 1—3 wherein said layer of springs is fixed to a frame.
5. A covering according to any of claims 1—4 wherein said layers of plastics material are
50 rendered fire-resistant.
6. A furniture upholstery covering constructed and arranged substantially as described and shown in the accompanying drawings.



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