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PLATFORM STRUCTURE FOR UPHOLSTERED ARTICLE

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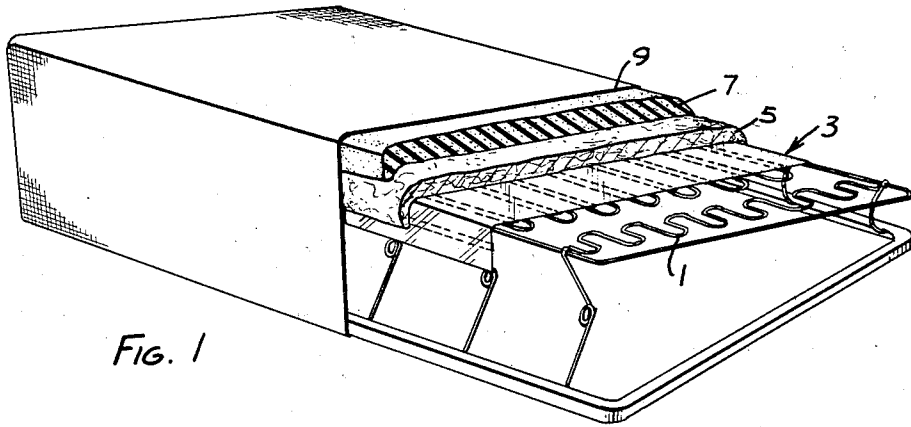


FIG. 1

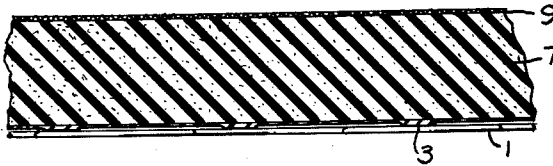


FIG. 2

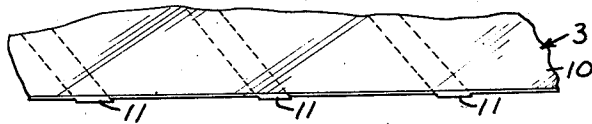


FIG. 3

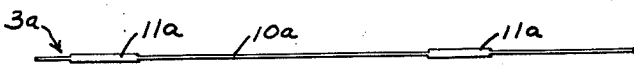


FIG. 4

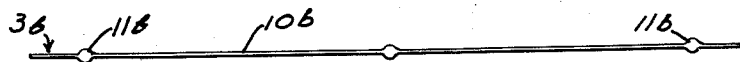


FIG. 5

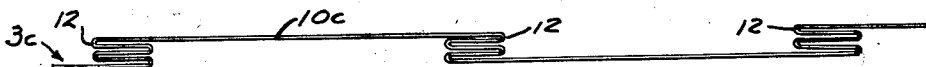


FIG. 6

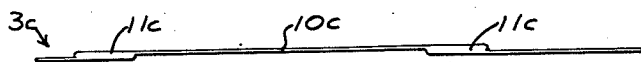


FIG. 7

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1

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PLATFORM STRUCTURE FOR UPHOLSTERED ARTICLE

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6 Claims. (Cl. 155—181)

This invention relates to a platform structure for disposition between underlying metallic spring and the padding, insulating or soft material placed over the springs over an upholstered article.

The invention is adaptable for use in various kinds and types of upholstered articles, such as seats of automobiles, household furniture, mattresses and the like. In construction of this kind it is necessary, in a well-made article, to protect the overlying padding or soft material or insulation, whichever it may be termed, from the springs. The underlying spring structure may be of the usual coil construction or of the so-called zig-zag construction but in any event, the spring construction comprises spaced wire-like elements which, in time, cut into, abrade, scuff, or embed into the overlying material.

This invention relates particularly to a plastic platform for disposition between the springs and the overlying material to protect the overlying material from being scuffed, abraded, embedded into or otherwise harmed. One object of the invention is to provide a sheet of plastic material with integrally formed tensile elements to give the sheet the requisite flexibility and elasticity while at the same time imparting requisite strength thereto.

The accompanying drawings depict the invention:

Fig. 1 is a view partly in cross section and partly cut away illustrating a seat construction.

Fig. 2 is a view similar to Fig. 1 showing modified sheet construction.

Fig. 3 is a view partly in section illustrating one form of platform construction.

Fig. 4 is a view showing another form of platform construction.

Fig. 5 is a view similar to Fig. 3 illustrating a further form of platform construction.

Fig. 6 is a view illustrating one manner of forming the tensile elements in the sheet of the platform.

Fig. 7 is a view similar to Fig. 6 showing the finished form of the article made in accordance with Fig. 6.

The seat construction, as shown in Fig. 1, embodies the underlying metallic spring construction as illustrated at 1 having numerous spring wire elements and the platform of this invention is disposed immediately and in contact with the spring construction, the platform being generally illustrated at 3. In the seat construction shown in Fig. 1 there is a layer of padding or insulating material 5 such as cotton or jute or the like placed over the platform; over the padding or insulating material 5 there may be a layer of sponge rubber 7, while the finish or trim is illustrated at 9 and it may be of suitable fabric. The fabric, of course, may vary as desired, and such fabric for seats of automobiles and household furniture will probably be different from fabric as may be used in an article such as a mattress.

In the form of seat construction shown in Fig. 2, the underlying spring construction may be the same as that shown in Fig. 1 and illustrated by the same reference character as is the platform 3. In this construction, there is no intermediate layer of padding of cotton or jute;

2

to the contrary, the foam rubber layer 7 is placed directly in contact with the platform and the outside trim is illustrated at 9.

The platform may be made in several different ways, as indicated, and in Fig. 1 the platform generally illustrated at 3, is comprised of a sheet of plastic material 10 with integrally formed thickened portions 11 which constitute tensile elements. This platform may be of any one of a number of co-polymers of vinylidene chloride and vinyl-chloride or polyethylene or Saran, or other plastic material which has elastic characteristics and is flexible. Accordingly, the tensile elements are similarly flexible. The tensile elements are spaced from each other, as shown, and are preferably in parallel relationship. When disposed in a seat construction the tensile elements are preferably arranged to extend across the long dimension of the article; for example, in the seat of an automobile it is preferable that the tensile elements extend crosswise of the automobile body. The platform shown in Fig. 3 including the tensile elements or thickened portions may be simultaneously made so that the sheet 10 and elements 11 are integrally formed. This may be done by an extrusion method with an appropriately shaped extrusion die. In the form shown in Fig. 3 the tensile elements have their body portions rising from one face of the sheet 10.

In the form shown in Fig. 4, the platform, as indicated at 3a, is constituted by a plastic sheet 10a with tensile elements 11a integrally formed therewith. In this form the portions or tensile elements 11a are centrally positioned relative to the sheet 10a. In the form shown in Fig. 5 the platform 3b is comprised of a sheet of plastic material 10b with integrally formed tensile elements 11b of more or less rounded or oval form in cross section. In other words, the tensile elements 11b have a lesser width and a greater thickness and this form of tensile element may be desired in some constructions. At this point, it might be said that in the form of construction shown in Fig. 2, tensile elements of a relatively flat nature are preferred to minimize scuffing, abrasion or embedding into the overlying rubber layer.

In Fig. 6, an arrangement is shown wherein the tensile elements are formed by fashioning or folding the sheet material. The sheet 10c is formed with folds, as illustrated at 12. Then the folds are pressed together and the interfaces are united by the application of heat and pressure or by the employment of an adhesive to thus form tensile elements 11c. The extent of the overlap of the folds may be varied to determine the width of the tensile elements 11c, and the number of folds may be varied to determine the thickness of the tensile elements.

A platform construction of this kind, of a flexible elastic sheet of plastic material with the tensile elements to give the sheet the requisite strength while maintaining the flexibility and elasticity, can be placed immediately in contact with the metallic spring structure. Such a platform is capable of withstanding the scuffing or abrading action of the springs and protects the overlying soft rubber or sponge rubber from such action and also prevents the springs from embedding themselves into the overlying soft rubber layer or any other overlying padding or insulation.

The sheet material may be manufactured in long lengths, fashioned into rolls and shipped to the place of usage. If desired or necessary, the platform material may be secured to the overlying layer. For example, it may be stitched to the padding layer 5 of Fig. 1. On the other hand, it may be used without being secured to the overlying layer wherein the seat construction embodies either the structure shown in Fig. 1 or the structure shown in Fig. 2.

In describing the platform, the terms "underlying" and

"overlying" have been used; these terms are not intended, as delimitations, to mean that one element is below or above another, because in the case of the back portion of a seat, or other article, the elements may be positioned in what approximates a vertical plane. Constructionwise, however, the springs underlie the platform.

The platform thus constructed is elastic and flexible and accommodates itself to the flexing action of the springs. In other words, some spring parts of a seat may be deflected incident to load while other parts of the same seat is not subject to load and the spring structure is not deflected. The platform readily permits of this performance and yields and stretches when necessary to permit such spring action.

I claim:

1. A platform for disposition between the underlying spring structure and the overlying layer of padding, insulation or soft rubber of an upholstered article, to prevent the spring structure from scuffing, abrading or embedding into said layer comprising, a single sheet body of elastic, plastic material and a plurality of flexible plastic tensile elements having elastic characteristics all extending along the sheet body in one direction and in spaced substantially parallel relationship, the said tensile elements being formed integrally with the sheet body.

2. A platform for disposition between the underlying spring structure and the overlying layer of padding, insulation or soft rubber of an upholstered article, to prevent the spring structure from scuffing, abrading or embedding into said layer comprising, a single sheet body of elastic plastic material and a plurality of flexible plastic tensile elements having elastic characteristics all extending along the sheet body in one direction and in spaced substantially parallel relationship, said tensile elements being constituted by relatively thickened portions of the sheet material constituting the sheet body.

3. A platform for disposition between the underlying spring structure and the overlying layer of padding, insulation or soft rubber of an upholstered article, to prevent the spring structure from scuffing, abrading or embedding into said layer comprising, a single sheet body of elastic plastic material and a plurality of flexible plastic tensile elements having elastic characteristics all extending along the sheet body in one direction and in spaced substantially parallel relationship, said tensile elements being constituted by relatively thickened portions of the sheet material constituting the sheet body and being relatively wide in the plane of the sheet body and relatively thin in the direction transverse to the plane of the sheet body.

4. A platform for disposition between the underlying

spring structure and the overlying layer of padding, insulation or soft rubber of an upholstered article, to prevent the spring structure from scuffing, abrading or embedding into said layer comprising, a sheet body of elastic plastic material and a plurality of flexible plastic tensile elements having elastic characteristics extending along the sheet body in spaced substantially parallel relationship, said tensile elements being constituted by relatively thickened portions of the sheet material constituting the sheet body, and being of generally of rounded or oval form projecting from both surfaces of the sheet body.

5. A platform for disposition between the underlying spring structure and the overlying layer of padding, insulation or soft rubber of an upholstered article, to prevent the spring structure from scuffing, abrading or embedding into said layer comprising, a sheet body of elastic plastic material and a plurality of flexible plastic tensile elements having elastic characteristics extending along the sheet body in spaced substantially parallel relationship, each tensile element being constituted by a plurality of super-imposed folds formed in the sheet body with the material of the folds lying in close interfacial relationship and interfaces being united together to form relatively thickened portions.

6. A platform for disposition between the underlying spring structure and the overlying layer of padding, insulation or soft rubber of an upholstered article, to prevent the spring structure from scuffing, abrading or embedding into said layer comprising, a sheet body of elastic plastic material and a plurality of flexible plastic tensile elements having elastic characteristics extending along the sheet body in spaced substantially parallel relationship, each tensile element being constituted by a plurality of super-imposed folds formed in the sheet body with the material of the folds lying in close interfacial relationship and interfaces being united together to form thickened portions relatively wide in the direction of the plane of the sheet body and relatively thin in a direction transverse to the plane of the sheet body.

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