

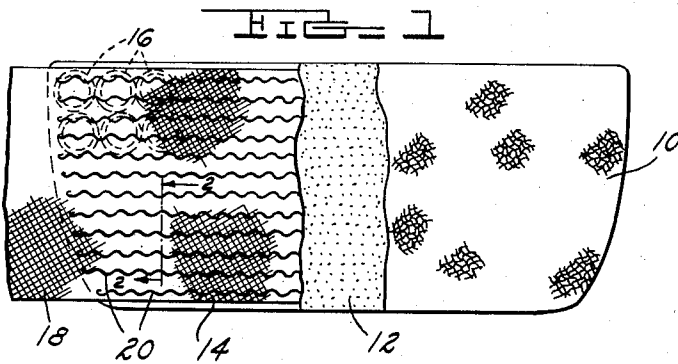
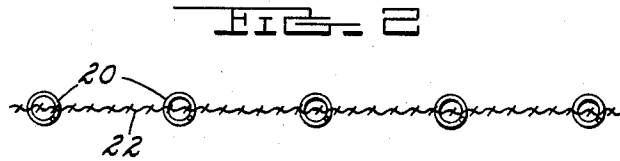
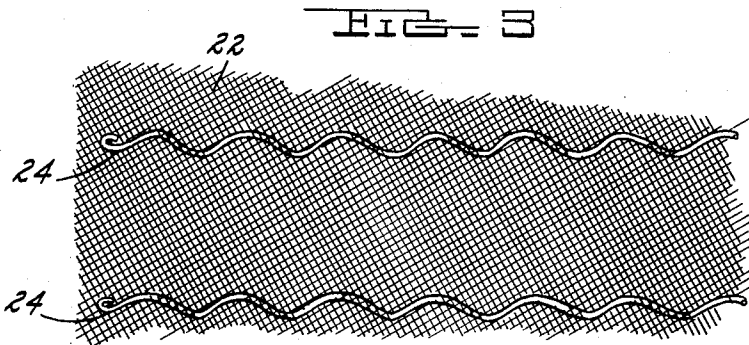
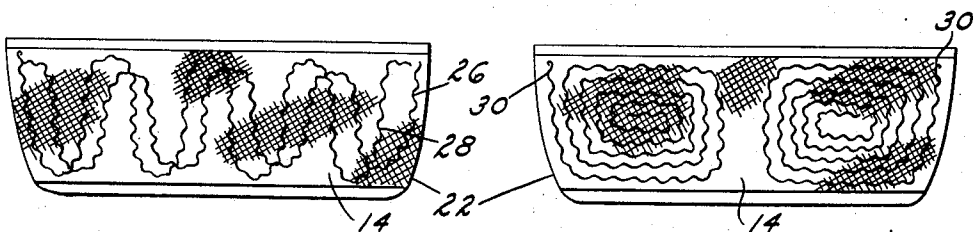
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UPHOLSTERY SPRING COVER

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2,906,320

UPHOLSTERY SPRING COVER

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10 Claims. (Cl. 155—181)

This invention relates to an improved upholstery spring cover or spring liner as such are termed in the industry.

It is common practise in the upholstery industry to provide reinforced spring covers which extend over the upholstery springs underneath the padding or other cushioning material that overlies the springs and underlies the upholstery cloth. Such spring covers are commonly formed of burlap or other cheap, strong, flexible sheet material which has been reinforced with resilient wires or the like threaded through the burlap. This reinforced spring liner for an upholstery spring assembly prevents the padding or other cushioning material which overlies the seat or back spring assembly in a motor vehicle from being pressed down into and between the springs and becoming embedded therein. It maintains such cushioning layer or padding as a layer on top of the spring assembly. It is obviously usable in connection with spring cushion assemblies other than those used in motor vehicles.

An object of this invention is to provide such an upholstery spring cover which is highly effective to perform its intended purpose, which is inexpensive and easily manufactured, which is adapted to be easily installed, and which lends itself to expeditious, inexpensive manufacturing operations and equipment.

Another object is to provide a spring liner of the character described wherein a layer or sheet of flexible fibrous material is reinforced by strand-like wire sections or portions threaded therethrough in such manner that the reinforcing strand portions maintain their position in place within the sheet material against longitudinal shifting during use.

A meritorious feature resides in the fact that the reinforcing wire-like strand portions are of helical contour and are spun through the flexible insulator sheet and due to the helical shape of the reinforcing strands may normally maintain their position within the sheet against lengthwise shifting because removal thereof can be readily accomplished only by a reverse spinning operation to that which is used in inserting the strand portions in place.

Another meritorious feature is that my improved spring cover reinforced with helical strands tends to maintain itself in position on the spring assembly because of the helical character of the reinforcing strands.

Another meritorious feature is that the helical reinforcing strand portions or sections are less likely to bend or kink over the upholstery springs than are the straight wire sections which are commonly used.

A further meritorious feature of the construction is that the helical reinforcing strands possess greater resiliency and serve to better return the insulator sheet to its intended position after use.

A further object is that helical wire strands lend themselves to rapid spinning into position within the insulator material and to simple mechanism for accomplishing such result. They further lend themselves to insertion of the reinforcing wire through the fabric along lines which deviate from a straight line.

Another meritorious feature is that helical wire strands

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spun through a sheet of insulator material not only extends alternately therethrough from opposite sides but because of the helical contour successive helices extend therethrough along spaced or adjacent parallel lines and therefore reinforce to a greater degree and more effectively the insulator sheet.

Other objects, advantages, and meritorious features will more fully appear from the following specification, claims, and accompanying drawing wherein:

Fig. 1 is a broken away plan of an automobile seat structure embodying the invention;

Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary schematic illustration of a portion of an insulator embodying the invention;

Fig. 4 illustrates a portion of the modified form of insulator;

Fig. 5 illustrates a fragment of a modified form of the insulator.

In the drawings a simple seat cushion is illustrated in Fig. 1. The overlying upholstery cloth is indicated by the numeral 10. The pad or layer of wadding or sponge rubber or what ever is desired is indicated by the numeral 12. The spring liner or upholstery cover itself is indicated generally by the numeral 14. The cushion seat structure shown is illustrated as provided with coil springs 16. It is understood, of course, that any type of spring assembly can be covered with this spring cover. Zigzag springs extending fore and aft of the seat structure are commonly used.

The upholstery cover 14 is shown as having a skirt portion 18 which is unreinforced as extending outwardly at one end as indicated in Fig. 1. This skirt portion is adapted to be suitably secured to the bottom border of the spring assembly.

In the construction shown in Fig. 1 a plurality of separate reinforcing spring wires 20 are shown as extending through a layer of flexible insulator material 22. The insulator material may be in any form desired. Burlap is commonly used. Woven fibrous material is generally employed, though any type of flexible material which is suitable could be used.

The reinforcing wires are flexible, resilient, and generally formed of metal though plastic might be suitable. These reinforcing strands are of a helical or spiral contour so that they are spun transversely through the sheet 14 as shown in Figs. 2 and 3. Being spun through the sheet successive helices extend alternately from the top side and the bottom side of the sheet therethrough and also they extend through the sheet along offset parallel lines as illustrated particularly in Fig. 3. Due to the facts that each spiral strand extends through the fibrous sheet along offset or parallel lines, each strand reinforces the sheet throughout a relatively wide path.

The reinforcing strands shown in Figs. 1 and 3 have their ends crimped over as at 24 to positively prevent linear shifting of the strands within the sheet. It has been found, however, that due to the spiral character of the strands, linear shifting is exceedingly rare. Because of its helical contour it is very difficult to shift the strands lengthwise within the insulator sheet other than by a spinning motion. The strands therefore serve to maintain their position very effectively.

Due to the spiral or helical contour of the reinforcing strands, they possess substantial resiliency and springiness. They also rest upon the underlying spring assembly in such a manner that kinking or the like over the spring assembly members during use of the cushion is reduced to a minimum.

In Fig. 4 there is illustrated a construction wherein a helical reinforcing wire is woven back and forth in a zigzag fashion through the fabric sheet. It is woven back

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and forth fore and aft and extends for substantially the length of the fabric sheet except that unreinforced skirt portions may be provided. Such a reinforcing wire is indicated by the numeral 26. Two such reinforcing strands are shown in Fig. 4, the second one being indicated by the numeral 28. The two strands overlap each other. They start from adjacent two opposite edges of the fabric sheet and adjacent to opposite edges thereof. Each of these continuous reinforcing strands 26 and 28 is shown here as embodying a plurality of spaced-apart portions or sections which are so spaced from each other as to reinforce the entire area of the fabric sheet desired to be reinforced. Such portions or sections are shown in Fig. 4 as being portions of a continuous strand. It is obvious that they might be separated into separate sections or portions as shown in Fig. 1 if desired. When the word "sections" or "portions" is used in the claims to describe the reinforcing strands, such are intended to cover separate portions as shown in Fig. 1 or continuous sections as shown in Figs. 4 and 5 except where specifically set forth.

Fig. 5 illustrates another modified form of spring liner in which the fabric insulator 14 has its two opposite spaced-apart end areas reinforced by separate groups of reinforcing strand portions. Each end area of the elongate fabric sheet has its own reinforcing wire assembly. These are here shown as made up of a continuous helical wire 30 spun through the fabric in such a manner as to form a plurality of generally concentric loops of varying diameter as illustrated. That portion of the fabric layer between the two groups is unreinforced. The end portions of the fabric layer beyond the two groups are unreinforced and serve as skirts. It is apparent that if desired each separate end group might consist of separate wire sections instead of a continuous wire shaped or formed to embody a plurality of continuous sections or portions as shown.

What I claim is:

1. An upholstery spring cover adapted to be inserted between an upholstery spring assembly and the padding to support the padding on the spring assembly comprising, in combination, a layer of flexible insulating sheet material and a plurality of flexible reinforcing strand sections extending in spaced-apart relationship thereacross, said sections being of helical conformation and threaded at spaced intervals through said layer of insulating sheet material.

2. An upholstery spring cover adapted to be inserted between an upholstery spring assembly and the padding to support the padding on the spring assembly comprising, in combination, a layer of flexible insulating sheet material and a plurality of flexible reinforcing strand sections extending in spaced-apart relationship thereacross, said sections being of helical conformation and threaded at spaced intervals through said layer of insulating sheet material, successive helices of said sections being disposed on opposite sides of said layer of insulating sheet material.

3. An upholstery spring cover adapted to be inserted

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between an upholstery spring assembly and the padding to support the padding on the spring assembly comprising a layer of flexible fibrous insulating sheet material having a plurality of resilient wire-like reinforcing strand sections extending in spaced-apart relationship thereacross, each strand section being of helical contour and threaded through the layer of insulating sheet material extending therethrough alternately from opposite sides thereof and from alternately spaced-apart parallel lines therethrough.

4. An upholstery spring cover as defined in claim 1 characterized in that said sections extend in spaced parallelism across and through the layer of insulating material.

5. An upholstery spring cover as defined in claim 1 characterized in that said sections extend in spaced-apart parallelism across and through the layer of insulating material and certain ends of the several sections are provided with enlargements adapted to impede withdrawal of the sections lengthwise through the layer.

6. An upholstery spring cover as defined in claim 3 characterized in that said sections extend in spaced-apart parallelism across and through the layer of insulating material and opposite ends of the several sections are bent upon themselves forming enlargements impeding linear movement of the sections through the layers.

7. An upholstery spring cover as defined in claim 1 characterized in that the layer of insulating material extends as loose, unreinforced skirt portions at opposite edges beyond the ends of the reinforcing sections.

8. In combination with an upholstery spring assembly having a plurality of individually acting spring elements, an upholstery spring cover adapted to be inserted between said assembly and the padding for said assembly to give support to the padding upon the weight supporting surface defined by said individually acting spring elements, said cover comprising a layer of flexible insulating sheet material and a plurality of flexible reinforcing strand sections extending in spaced-apart relationship thereacross, said strand sections being of helical conformation and being threaded at spaced intervals through said layer of insulating sheet material.

9. In the combination of claim 8, wherein successive helices of said sections are disposed on opposite sides of said layer of insulating sheet material.

10. In the combination of claim 8, wherein said material is burlap and said strand sections are resilient wire and longitudinally extensible so as to preserve the individual action of said spring elements.

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