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SEAT SPRING CONSTRUCTION

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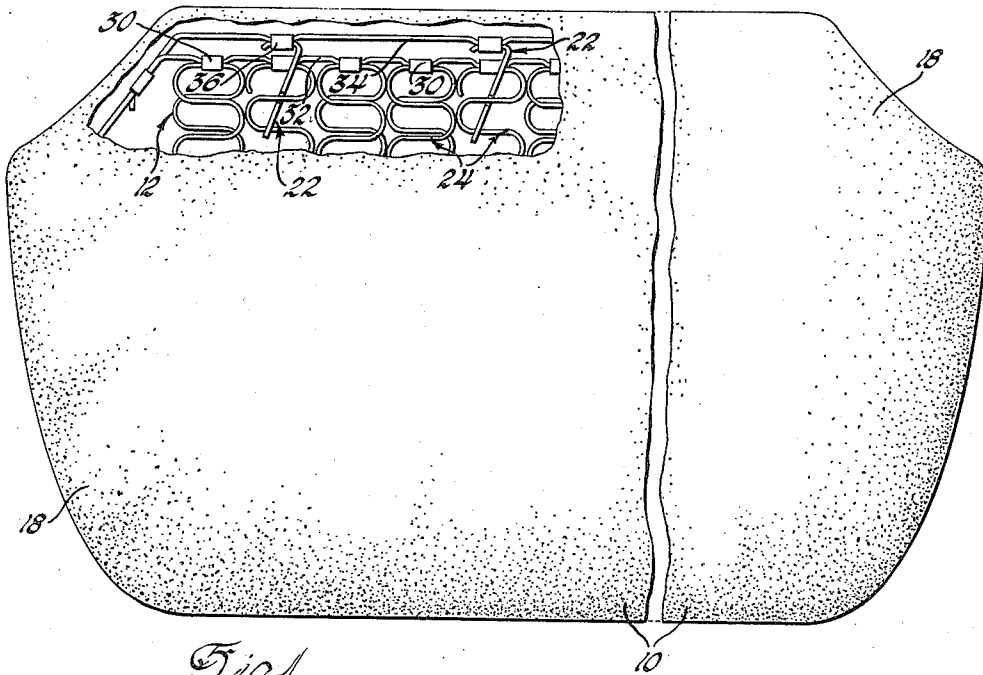


Fig. 1

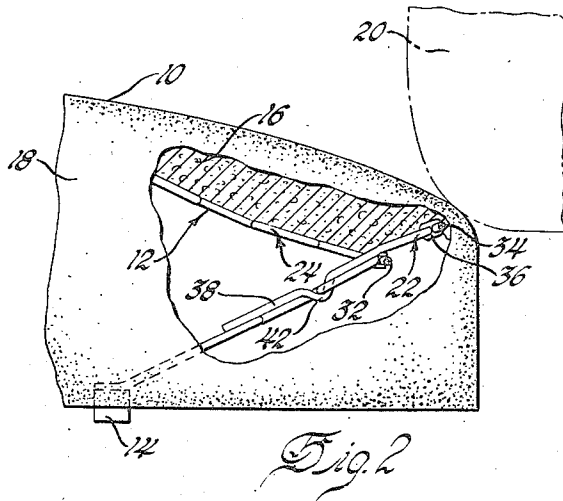


Fig. 2

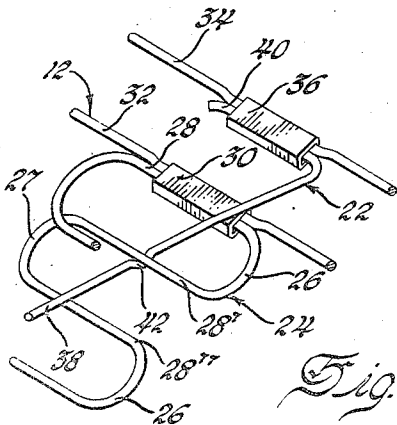


Fig. 3

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SEAT SPRING CONSTRUCTION

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This invention relates to sinuous spring assemblies and more particularly to a means for attaching a border wire or the like to the sinuous spring strips of the assembly.

Sinuous spring assemblies of various types are widely used in the automotive industry because of their economical adaptation to mass production. These sinuous spring assemblies generally comprise lateral rows of arched sinuous spring strips that span a suitable frame. The sinuous spring strips are made by bending a wire to form adjacent oppositely presenting loop portions joined by straight portions. An intermediate section of the spring strips presents a seating surface and depending ends attach to the frame. The depending ends of the spring strips are transversely connected by a border wire to form the edges of the spring assemblies.

For economy reasons it is desirable that a common spring assembly be readily alterable to different widths for installation in different vehicles. The invention contemplates the provision of a secondary border wire that is laterally spaced from the primary border wire of a common spring assembly of minimum width to form an extended auxiliary edge for the spring assembly and thereby enlarge its width to suit various installations.

The invention is particularly concerned with the attachment of the secondary border wire and the spring strips. Adjustable primary border wire attaching elements have been devised prior to the present invention but they are complex in form and present difficulty of assembly.

The border wire attaching elements take the form of L-shaped cantilever springs spaced along an edge of the spring assembly. One leg is secured to the respective spring strip and the other leg is secured to the secondary border wire. The one leg is transversely threaded with at least three straight portions of the spring strip by one section that passes under at least one of the straight portions of the spring strip and by other sections on each side of the one section that each pass over at least one of the straight portions of the spring strip. The attaching elements of the secondary border wire have a cantilever relation with the sinuous spring strips and may be used to provide a soft edge construction for the spring assembly. The primary border wire may be dispensed with for particular installations, if desired.

An object of the invention is to provide the sinuous spring strips with border wire attaching elements that are simple in configuration, that can be formed economically, and that can be readily assembled with the sinuous spring strips.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing, wherein a preferred form of the present invention is clearly shown.

In the drawing:

Fig. 1 is a top plan view, partially broken away, of a seat cushion having a sinuous spring assembly embodying the border wire supporting elements of the invention;

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Fig. 2 is a partial side elevation of the seat cushion partially broken away; and

Fig. 3 is a partial perspective of the spring assembly.

Referring to the drawing in detail, the seat cushion 10 comprises a metallic spring assembly 12 that spans a front frame member (not shown) and a rear frame member 14. Ticking 16 surfaces the spring assembly 12 and fabric 18 provides the cover of the cushion. A similar cushion 20 provides a back for the entire seat assembly.

The spring assembly 12 is of a minimum width and is extended by border wire supporting elements 22 to make the seat cushion 10 of sufficient width to abut the seat back 20. The spring assembly 12 is formed of lateral rows of sinuous spring strips 24 that have a continuous run of adjacent oppositely presenting loop portions 26 and 27 that are joined by straight portions 28. The sinuous spring strips 24 have an arched center that presents a seating surface and depending ends that attach to the frame members. Clips 30 transversely connect a border wire 32 to aligned straight portions 28 of the spring strips 24 to form a rear edge for the spring assembly 12. The border wire supporting elements 22 are connected to the sinuous spring strips 24, as will be described, to project in cantilevered relation from the primary border wire 32, and a second border wire 34 is secured by clips 36 to the supporting elements 22 to form an extended auxiliary edge for the spring assembly.

The border wire supporting elements 22 are L-shaped and one leg 38 is transversely threaded with the three straight portions 28, 28' and 28'' of the spring strip 24 that are nearest the border wire 32. The clips 36 secure the other leg 40 to the secondary border wire 34. The border wire supporting elements 22 are preferably threaded to the spring strips 24 before the attachment of the secondary border wire 34. The leg 38 is inserted downwardly into the loop 26 next the border wire 32 to pass under the straight portion 28' and is then rotated upwardly into the next loop 27 and over the straight portion 28''. The leg 38 is provided with a dip or kink 42 that hooks under the straight portion 28' to lock the border wire securing element in place. The leg 38 is straight except for the dip 42. As may be seen in Fig. 3, the straight portions 28, 28' and 28'' lie in a common plane. The depth of the dip 42 is somewhat less than the diameters of the straight portions 28, 28' and 28'' so that the leg 38 will bear up on the straight portion 28' and bear down on the straight portions 28 and 28''.

While the preferred embodiment of the invention has been described fully in order to explain the principles of the invention, it is to be understood that modifications of structure may be made by the exercise of skill in the art within the scope of the invention which is not to be regarded as limited by the detailed description of the preferred embodiment.

I claim:

1. In a spring assembly of the type comprising lateral rows of sinuous spring strips, each spring strip having a plurality of adjacent oppositely presenting loop portions joined by straight portions, and a border wire transversely connecting the spring strips at aligned straight portions thereof to form a soft edge for the spring assembly; the improvement comprising a second border wire laterally spaced from the first border wire to form an extended soft auxiliary edge for the spring assembly, and means for supporting the second border wire on the spring strips comprising simple L-shaped cantilever spring elements each having one leg secured to a respective spring strip and the other leg connected to the second border wire, the one leg being transversely threaded with at least two oppositely presenting loop portions and with at least three straight portions of the respective spring strip by one

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section that passes between the loop portions and that passes under and bears against one of the straight portions of the spring strip and by other sections on each side of the one section that each pass over and bear against other straight portions of the spring strip.

2. In a spring assembly of the type comprising lateral rows of sinuous spring strips, each spring strip having a plurality of adjacent oppositely presenting loop portions joined by straight portions, and a border wire transversely connecting the spring strips at aligned straight portions thereof to form a soft edge for the spring assembly; the improvement comprising a second border wire laterally spaced from the first border wire to form an extended soft auxiliary edge for the spring assembly, and means for supporting the second border wire on the spring strips comprising simple L-shaped cantilever spring elements each having one leg secured to a respective spring strip and the other leg connected to the second border wire, the one leg being transversely threaded with the two oppositely presenting loop portions and with the three straight portions of the respective spring strip that are nearest the first border wire by a dipped section that passes between the loop portions and that hooks under and bears against the intermediate straight portion and by straight sections on each side of the dipped section that each pass over and bear against the other straight portions.

3. In a spring assembly of the type comprising a frame, lateral rows of sinuous spring strips spanning the frame, each spring strip having a plurality of adjacent

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oppositely presenting loop portions joined by straight portions, and a border wire transversely connecting aligned straight portions of the spring strips to form a soft edge for the spring assembly; the improvement comprising a second border wire laterally spaced from the first border wire to form an extended soft auxiliary edge for the spring assembly, and means for supporting the second border wire on the spring strips comprising simple L-shaped cantilever spring elements each having one leg secured to a respective spring strip and the other leg connected to the second border wire, the one leg being transversely threaded with at least two oppositely presenting loop portions and with at least three straight portions of the respective spring strip by a dipped section that passes between the loop portions and that hooks under and bears against one of the straight portions of the spring strip and by straight sections on each side of the dipped section that each pass over and bear against the other straight portions of the spring strip.

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