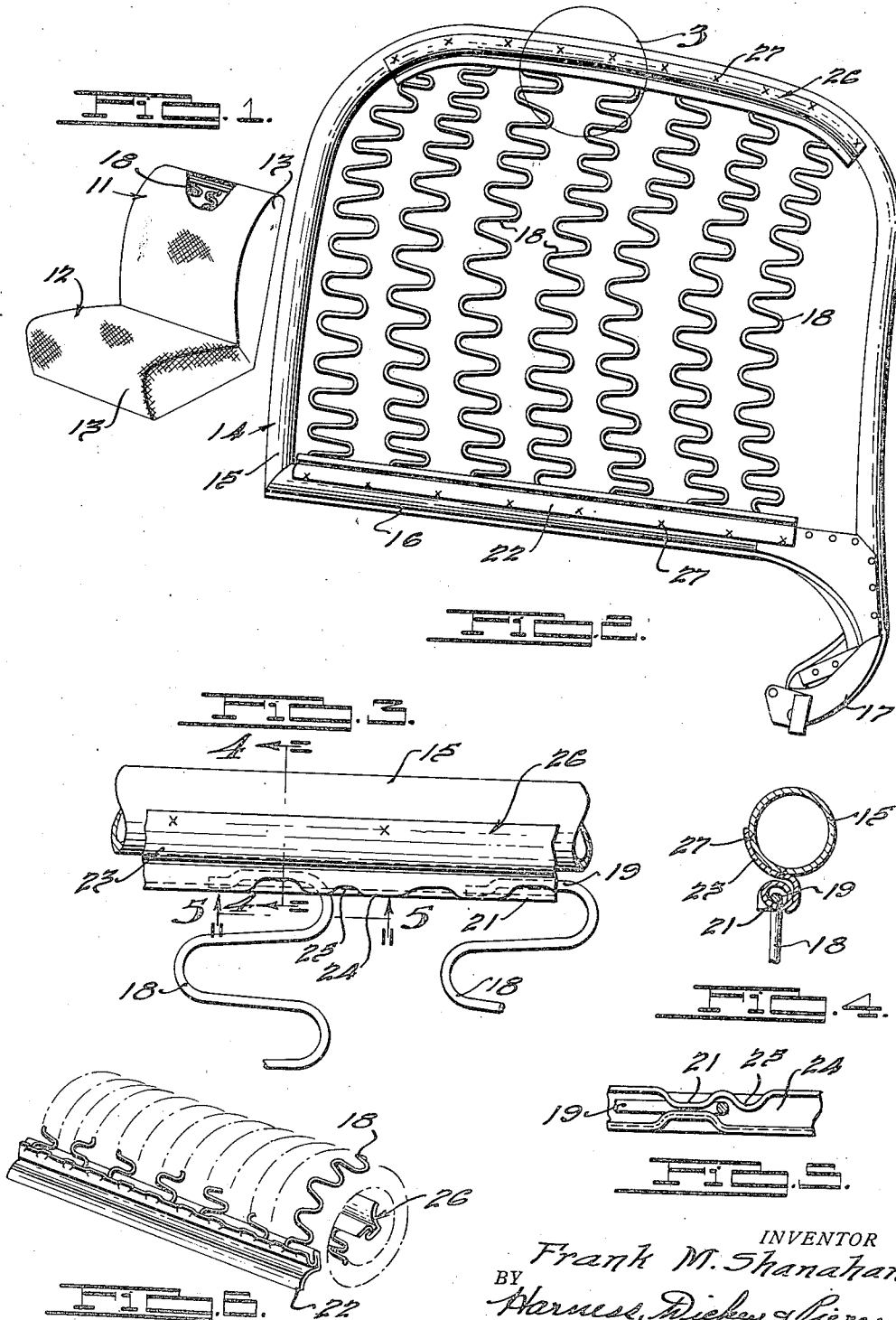


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SPRING CONSTRUCTION
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2,293,566

SPRING CONSTRUCTION

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5 Claims. (Cl. 155—179)

My invention relates to seat constructions and particularly to a new and novel spring assembly which is attachable to the frame of a seat or back cushion in a new and novel manner.

Various means have been provided heretofore for anchoring the ends of zig-zag type of spring strips to the border frame members of seat and back cushions. Clips of various types have been employed while the frame itself has been preformed and have alternate tunnel and channel portions in which the ends of the strips may be inserted and retained. The frame may be formed to include a tacking strip and to provide sufficient rigidity to be useful as a base. In other instances, the preformed strip has been attached first to the frame and the ends of the sinuous springs thereafter secured to the strip.

In practicing my present invention, I provide an anchor strip having one portion thereof flanged to mate with the border element to which it is ultimately secured, and having extended therefrom, a portion in which alternate channel end tunnels are provided for receiving the ends of the sinuous spring strips. The ends of the sinuous spring strips are inserted in the channels and the ends move longitudinally into the tunnels which anchor the spring ends in position. One or both of the walls of the channel may thereafter be crimped to retain the end of the sinuous spring strip against movement out of the tunnel. The springs may be assembled in this manner without any material stretching since the anchoring strips are secured and a compact unit is formed by the assembly when rolled about one of the strips. When a seat or back cushion is to be constructed, the spring assembly is secured to the frame thereof by means of the anchoring strips. The flanges thereof are formed to the contour of the frame both longitudinally and in cross-section and are secured thereto by suitable means such as welding, riveting, nailing, or the like.

Accordingly, the main objects of my invention are: to assemble a plurality of spring strips on anchoring strips or elements which are attachable to the frames of seat and back cushions; to form a spring surface on anchoring elements which mate with the frame and are secured thereto to form a spring surface; to form anchoring elements having a securing flange and alternate tunnel and channel portions in which the ends of sinuous springs are retainable; to secure the ends of sinuous spring elements in anchoring strips which retain the elements in unit relation and which form a spring surface when the flanges

of the anchoring elements are secured to opposite sides of a border frame; and in general to form a separate spring unit which constitutes a spring surface for a border frame when secured to opposite sides thereof, all of which is simple in construction and economical of manufacture.

Other objects and features of novelty of my invention will be specifically pointed out or will become apparent when referring, for a better understanding of my invention, to the following description taken in conjunction with the accompanying drawing wherein:

Figure 1 is a view in perspective of a seat embodying the novel construction of my invention;

Fig. 2 is an enlarged view in elevation of the seat back frame and spring surface constructed and made in accordance with my invention;

Fig. 3 is an enlarged broken view of the structure illustrated in Fig. 2, as outlined in the circle 3 thereof;

Fig. 4 is a section view of the structure illustrated in Fig. 3, taken on the line 4—4 thereof;

Fig. 5 is a sectional view of the structure illustrated in Fig. 3, taken on the line 5—5 thereof; and

Fig. 6 is a view of the spring unit in the form it assumes after assembly.

The seat illustrated in Fig. 1 is of conventional form, having a back cushion 11 and a seat cushion 12, comprising a base frame across which zig-zag spring strips are secured to form a spring surface and over which padding and trim material 13 is disposed and secured. In Figs. 2 to 6, inclusive, I have shown the back construction in detail to illustrate the novel arrangement of elements which constitute my invention.

A back frame 14 comprises an inverted U-shaped tubular element 15 interconnected at the open end of the U at the bottom with an additional tubular element 16 forming a substantially rectangular frame. The frame has an extending leg 17 which is anchored to the seat portion 12 in a conventional manner to be tilted forward thereover to assume an angular position to provide clearance for a person when entering the rear compartment of the vehicle.

A plurality of zig-zag spring strips 18 have their ends 19 secured in a tunnel portion 21 of oppositely disposed anchoring strips 22 and 26. The anchoring strips have a flange 23 of arcuate shape to mate with the arcuate surface of the tubular frame and is shaped longitudinally to mate with the top of the frame portion 15 and the bottom frame portion 16. Adjacent to the tunnel portion 21, the anchoring strips 22 and 26

are provided with a channel portion 24, through which the end 19 of the strip is inserted and moved longitudinally into the adjacent tunnel. Thereafter, one or both side walls are flanged inwardly, as at 25, to prevent the reverse movement of the end of the strip, to thereby lock the end within the anchoring strips.

The strip 26 is formed longitudinally of its length to mate with the curved corners of the inverted U shaped frame element 15. After the spring strips 18 are assembled in the anchoring elements 22 and 26, the assembly coils itself into a compact unit, as illustrated in Fig. 6. The sinuous spring strip 18 of zig-zag formed wire is provided with a set longitudinally of its length on an arc of small radius so as to be provided with an inherent tension against deflection when the flanges 23 of the anchoring elements 22 and 26 are secured to opposite sides of the border frame. In Fig. 2, the flange 23 is illustrated as being welded to the tubular border elements 15 and 16 at various points 27 which is illustrated in cross-section in Fig. 4. It is to be understood that when a frame of wood or other material is utilized that screws, nails, or other anchoring means may be employed for securing the flange 23 thereto.

In this arrangement, the spring surface for the seat back cushion is formed as a unit assembly by having the ends of the strips secured to anchoring elements which are thereafter welded or otherwise secured to opposite border frame members of the seat and back cushion. The inherent set of the springs permits the assembly to be rolled up into a compact unit which is easily transported. The spring assembly may be constructed in the plant of the manufacturer of the spring strips and the unit assembly shipped to the manufacturer of the seat and back cushions wherein the assemblies are then secured in position on the frames.

While I have illustrated and described but a single embodiment of my invention, it will be apparent to those skilled in the art that various changes, omissions, additions, and substitutions may be made therein without departing from the

spirit and scope of my invention, as set forth in the accompanying claims.

What is claimed is:

1. A spring assembly embodying anchoring strips each having a projecting flange mateable with a frame of a seat or back cushion, said flanges having thereon alternately disposed channel and recess portions, and sinuous spring strips having their ends secured in said recess portions to form an independent unit assembly.

2. A spring assembly embodying anchoring strips each having a projecting flange mateable with a frame of a seat or back cushion, said flanges having thereon alternately disposed channel and recess portions, and sinuous spring strips having their ends secured in said recess portions to form an independent unit assembly, said sinuous spring strips having a set on an arc of small radius to have the assembly coil itself into a compact unit.

3. The method of forming a spring surface for a seat or back cushion frame which includes the steps of assembling the elements forming the spring surface to separate anchoring strips, of anchoring one of said anchoring strips to one side of the cushion frame, and thereafter anchoring the other receiving strip to the opposite side of the cushion frame, with the spring strips spanning opposite sides of said frame.

4. A spring assembly for spanning opposite sides of a frame of a cushion embodying separate anchoring strips, sinuous spring elements having their ends anchored to said strips, said spring assembly being rolled about one of said strips to form a compact unit.

5. A spring assembly for spanning opposite sides of a frame of a cushion embodying separate anchoring strips, sinuous spring elements having their ends anchored to said strips, said spring assembly being rolled about one of said strips to form a compact unit, said rolling of the strips being assisted by the inherent sets in said spring elements longitudinally of their length on an arc of small radius.

FRANK M. SHANAHAN.

CERTIFICATE OF CORRECTION.

Patent No. 2,293,566.

August 18, 1942.

FRANK M. SHANAHAN.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 27, claim 3, for "receiving strip" read --anchoring strip--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 27th day of October, A. D. 1942.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)