Dec. 15, 1953 W. A. CLARK 2,662,588

CUSHION SPRING STRUCTURE

Filed Sept. 8, 1952

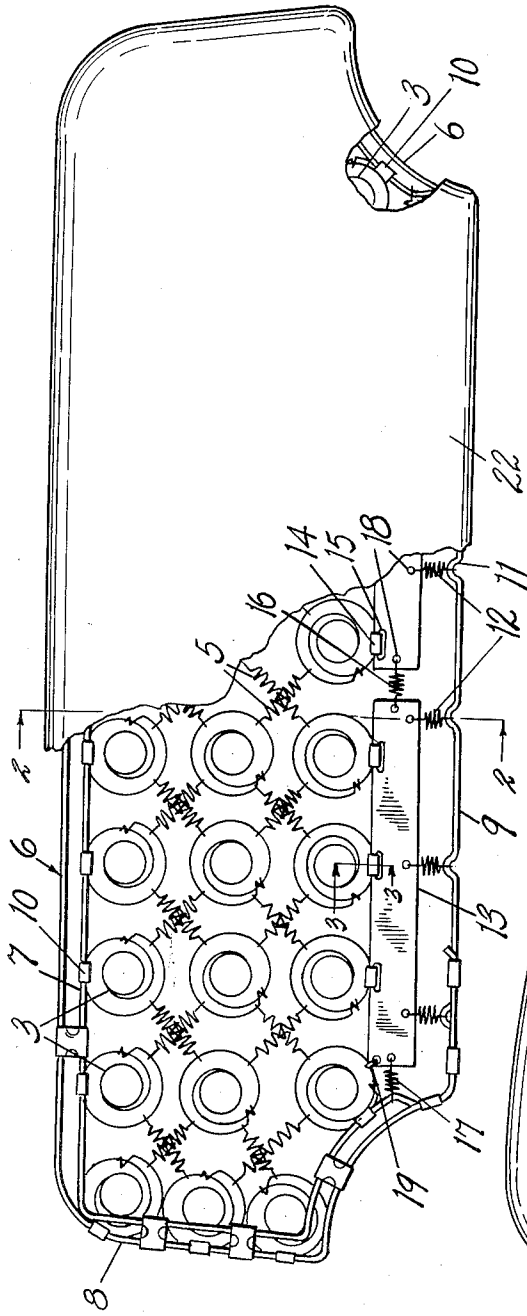


Fig. 1.

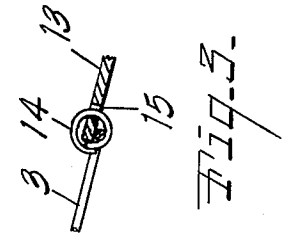


Fig. 3.

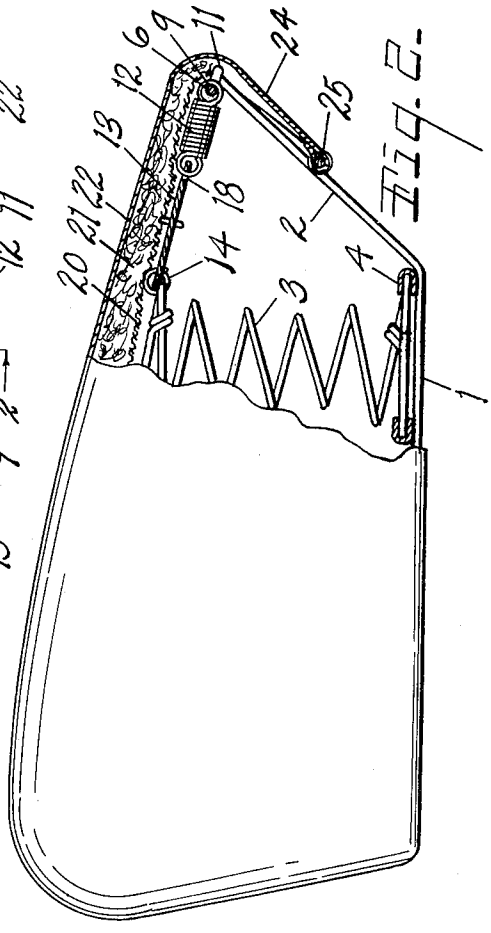


Fig. 2.

INVENTOR.
William A. Clark
BY
Otto A. Earl
Attorney.

Patented Dec. 15, 1953

2,662,588

UNITED STATES PATENT OFFICE

2,662,588

CUSHION SPRING STRUCTURE

William A. Clark, Detroit, Mich.

Application September 8, 1952, Serial No. 308,308

8 Claims. (Cl. 155—181)

1

This invention relates to improvements in a cushion spring structure.

The main objects of this invention are:

First, to provide a cushion spring structure which is well adapted for use as a front seat cushion providing an effective springable upholstery support and at the same time foot room under the rear portion of the cushion.

Second, to provide a structure embodying these advantages in which the upholstery is effectively supported, the upholstered cushion constituting an assembled unit.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary plan view of a structure embodying my invention, the upholstery being partially broken away, the base frame being omitted in the interest of clearness, and the coiled body springs being conventionally illustrated.

Fig. 2 is an end elevational view partially broken away and in vertical section on a line corresponding to line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary view in section on a line corresponding to line 3—3 of Fig. 1.

My present invention is an adaptation of and in some respects an improvement upon my Letters Patent No. 2,634,800 issued April 14, 1953 and No. 2,638,155 issued May 12, 1953.

In the embodiment illustrated in the accompanying drawing, 1 represents the base which is provided with upwardly and rearwardly projecting arms 2 at the rear thereof. The coiled body springs 3 are mounted upon the base, their bottom coils being engaged in the pairs of U-shaped strips 4. The top coils of the body springs are connected by the crossed pairs of helical tie members 5. These parts are shown mainly in conventional form.

The top border frame designated generally by the numeral 6 comprises a front border member 7, end border members 8 and a rear border member or rear rail 9. The front and end border members are connected to the top coils of the adjacent border body springs by the clips 10. The rear rail 9 is spaced substantially rearwardly of the rear body springs and in approximately the plane of the tops thereof although desirably slightly below that plane.

The rear rail 9 is provided with longitudinally spaced bends or offsets 11 with which the rear ends of the extension springs 12 are engaged.

2

The front ends of these extension springs are connected to the upholstery supporting strips 13 which are formed of springably resilient thin sheet metal. The forward edges of the strips 13 are secured to the top coils of the rear body springs by means of clips 14 which are engaged in slots 15 in the front edges of the upholstery supporting strips 13. This provides a vertically swingable connection for the strips 13 to the rear body springs although in use there is very little relative movement as the upholstery supporting strips yield and move with the adjacent body springs to which they are connected.

In the embodiment illustrated there are two of these upholstery supporting strips disposed in end to end spaced relation and connected by the expansion spring 16. The outer ends of the strips 13 are connected to the end members of the top border frame by the expansion springs 17. The springs 12, 16 and 17 are in practice duplicates but separate numerals are used for convenience in description. The strips 13 are provided with holes 18 with which the expansion springs are engaged. The clips 19 connecting the ends of the strips to the adjacent body springs are of the hog ring type.

The upholstery comprises the lining 20, the filler 21 and the covering 22. The rear portion 24 of the cover 22 is drawn downwardly over the rear rail 9 and secured to the rod 25 which is spaced from the bottom of the base so as to provide a foot opening below the rear portion of the cushion. The part 24 of the covering 22 serves to effectively conceal the spring assembly, that is, from the normal line of vision of a person occupying the rear seat of an automobile.

I have illustrated and described a highly practical embodiment of my invention. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A spring structure comprising a supporting frame and body springs carried thereby, a top frame carried by certain of said body springs and comprising fixedly connected front and end members, and a rear rail fixedly connected to the end members and having spaced inward offsets therein, a plurality of flexible sheet metal upholstery supporting strips disposed between said body springs and said rear rail in spaced end to end relation with their outer ends in spaced relation

to the end members of said top frame, clips securing the front edges of said upholstery supporting strips to the top coils of adjacent body springs, extension springs connecting the outer ends of said upholstery supporting strips to the end members of the frame, an extension spring connecting the adjacent ends of said upholstery supporting strips, and extension springs connecting the rear edges of said upholstery supporting strips to said rear rail with their rear ends engaged in the said offsets of the rail.

2. A spring structure comprising a supporting frame and body springs carried thereby, a top frame carried by certain of said body springs and comprising fixedly connected front and end members, and a rear rail fixedly connected to the end members, a plurality of flexible sheet metal upholstery supporting strips disposed between said body springs and said rear rail in spaced end to end relation with their outer ends in spaced relation to the end members of said top frame, clips securing the front edges of said upholstery supporting strips to the top coils of adjacent body springs, extension springs connecting the outer ends of said upholstery supporting strips to the end members of the frame, an extension spring connecting the adjacent ends of said upholstery supporting strips, and extension springs connecting the rear edges of said upholstery supporting strips to said rear rail.

3. A spring structure comprising a supporting frame and body springs carried thereby, a top frame carried by certain of said body springs and comprising fixedly connected front and end members, and a rear rail fixedly connected to the end members and having spaced inward offsets therein, a plurality of flexible sheet metal upholstery supporting strips disposed between said body springs and said rear rail in spaced end to end relation with their outer ends in spaced relation to the end members of said top frame, clips securing the front edges of said upholstery supporting strips to the top coils of adjacent body springs, and extension springs connecting the rear edges of said upholstery supporting strips to said rear rail with their rear ends engaged in the said offsets of the rail.

4. A spring structure comprising a supporting frame and body springs carried thereby, a top frame carried by certain of said body springs and comprising fixedly connected front and end members, and a rear rail fixedly connected to the end members, a plurality of flexible sheet metal upholstery supporting strips disposed between said body springs and said rear rail in spaced end to end relation with their outer ends in spaced relation to the end members of said top frame, clips securing the front edges of said upholstery supporting strips to the top coils of adjacent body springs, and extension springs connecting the rear edges of said upholstery supporting strips to said rear rail.

5. A spring structure comprising an assembly of connected body springs, a top border frame connected to the top coils of the front and end

border springs of the assembly, said top border frame including a rear rail spaced rearwardly of the rear body springs of the assembly, flexible sheet metal upholstery supporting strips disposed between the rear body springs of said assembly and said rail in spaced end to end relation with their outer ends in spaced relation to the end members of the top frame, clips securing the front edges of said upholstery supporting strips to the top coils of the rear body springs, extension springs connecting the outer ends of said upholstery supporting strips to the end members of the frame, an extension spring connecting the adjacent ends of said upholstery supporting strips, and extension springs connecting the rear edges of said upholstery supporting strips to said rear rail.

6. A spring structure comprising an assembly of connected body springs, a top border frame connected to the top coils of the front and end border springs of the assembly, said top border frame including a rear rail spaced rearwardly of the rear body springs of the assembly, a flexible sheet metal upholstery supporting strip disposed between the rear body springs of said assembly and said rail, clips securing the front edge of said upholstery supporting strip to the top coils of the rear body springs, and extension springs connecting the rear edge of said upholstery supporting strip to said rear rail.

7. A spring structure comprising an assembly of connected body springs, a top border frame connected to the top coils of the front and end border springs of the assembly, said top border frame including a rear rail spaced rearwardly of the rear body springs of the assembly, a flexible nonstretchable upholstery supporting strip disposed between the rear body springs of said assembly and said rail, the front edge of said upholstery supporting strip being connected to the top coils of the rear body springs, and extension springs connecting the rear edges of said upholstery supporting strips to said rear rail with their rear ends engaged in the said offsets of the rail.

8. A spring structure comprising an assembly of connected helically coiled body springs, and a top border frame including a rear rail disposed in rearwardly spaced relation to the rear body springs, a flexible resilient sheet metal upholstery supporting strip disposed between the rear body springs and the said rear rail, clips connecting the front edge of the strip to the top coils of the rear body springs providing a vertically swingable but nonextensible connection therefor, and extension springs connected to the rear edge of said upholstery supporting strip and to the rear rail.

WILLIAM A. CLARK.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,395,421	Johnson	Nov. 1, 1921
2,634,800	Clark	Apr. 14, 1953