June 1, 1926.

1,587,199

W. F. STOUFFER ET AL

SEAT BACK

Filed May 29, 1922

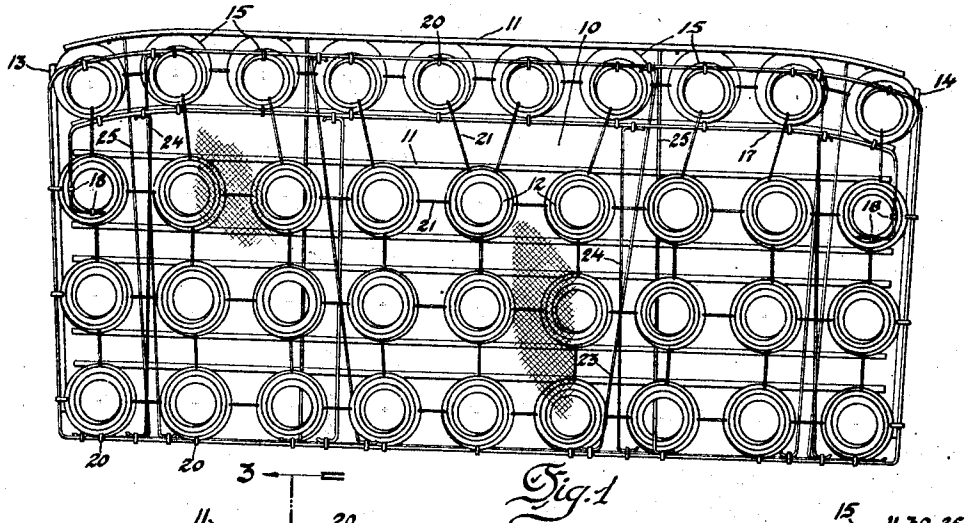


Fig. 1

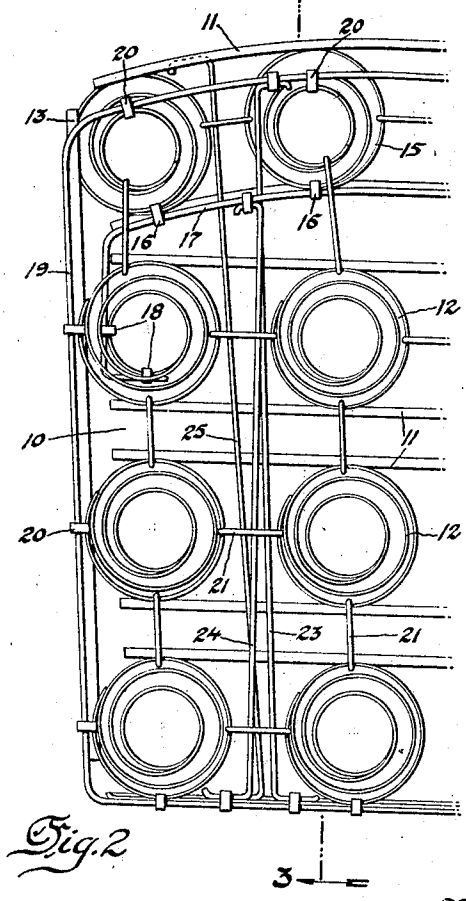


Fig. 2

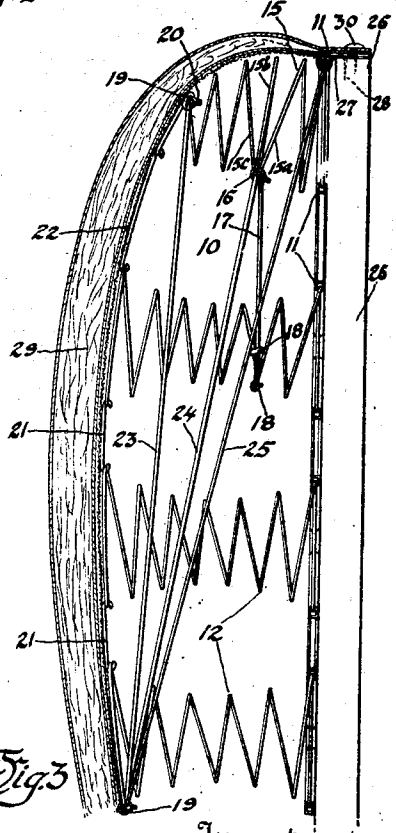


Fig. 3

Inventors
W. F. Stouffer &
Brazil E. Lambert

By Their Attorneys
Blackmore, Spencer & Flint.

Patented June 1, 1926. 1,587,199

UNITED STATES PATENT OFFICE.

WILLIAM F. STOUFFER AND BRAZIL E. LAMBERT, OF FLINT, MICHIGAN, ASSIGNORS TO GENERAL MOTORS CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF DELAWARE.

SEAT BACK.

Application filed May 29, 1922. Serial No. 564,510.

This invention relates to seats and more particularly to the upholstery or cushions therefor.

One of the objects of the invention is the provision of new and improved means for rendering the cushions for seats, especially seats for vehicles, soft and resilient.

Another object of the invention is the arrangement of springs to form seat cushions and the provision of means for shaping the springs to the proper contour and for maintaining them in proper position while in use.

Other and further objects and advantages of the invention will appear as the description proceeds.

Fig. 1 is a front elevation of a seat back cushion, detached from the seat, with the finishing padding or upholstery proper removed;

Fig. 2 is a similar view on an enlarged scale, with parts broken away; and Fig. 3 is a vertical section on line 3—3 of Fig. 2, and showing portions of the seat back and upholstery padding.

Similar reference characters refer to like parts throughout the several views.

It is common practice in the construction of cushions for the backs of seats to provide a padding in the upper portion of the cushion for the purpose of giving the same the proper curve or contour. We have discovered that the padding within the cushion may be dispensed with and that the springs may be so arranged that they will not only form the desired curve for the upper portion of the cushion but will maintain the same in proper form to provide the desired resiliency under all conditions of use to which the cushion may be subjected.

On the drawing, the numeral 10 designates a spring cushion which has a plurality of longitudinally extending C-shaped supporting bars 11 that constitute supports for the springs 12. The springs 12 are preferably helical or coiled springs smallest in diameter at their middle portions and thus of double conical form and have their bases secured to the spring supports 11 in any suitable manner as by being clamped in said supports. Transverse supports 13 and 14 extending across the ends of the cushion are also provided and are secured to the springs in a similar manner as is usual in such constructions; these transverse supports in connection with the longitudinal supports 11 constitute a rear or back frame for the spring structure as a whole; which frame is in a substantially vertical position when the device is in use, as will be appreciated.

For convenience of description those portions of the figures toward the top of the drawing will be referred to as the upper portions. The springs (which may be referred to as substantially "barrel shaped") 15 along the upper portion of the cushion are coiled spring and each may be in the form of a single cone. The intermediate springs may be of any suitable form or shape, those shown being what might be termed double helical or double conical.

The upper portions of the conical springs 15 are adapted to be so arranged that they form the proper curvature for the upper portion of the cushion. This is considered an important feature of the invention and may be accomplished by securing together the lower portions of a plurality of the intermediate coils of these springs. As shown, the intermediate coils 15^a, 15^b and 15^c are secured in this position by any suitable means such as the clips 16, which also engage the tie member 17. The ends of the tie member 17 may extend downwardly and inwardly about the adjacent end springs and are adapted to be secured thereto by any suitable means such as the clips 18 as is clearly shown in Fig. 2.

Extending about the outer ends of the marginal springs of the cushion is a positioning member 19 which may be in the form of a closed loop. This member 19 may with equal propriety be referred to as a front or inner frame, the same being arranged in a substantially vertical position similar to that of the rear frame aforesaid, in the spring structure regarded in its entirety, the same being curved transversely in its front surface, as shown. The positioning member 19 is secured to the outer ends of the springs by clips or similar fastening means 20. The springs are positioned relatively to each other by suitable connectors 21 which connect each spring to the adjacent ones, as is usual in such constructions. A suitable cover such as the reticulated member 22, such for example as a closely woven piece or sheet of wire cloth or fabric, is adapted to extend over the front of the spring cushion.

Attached to the lower portion of the positioning member 19 are a set of braces or radius rods 23 and a plurality of sets of braces or radius rods 24 and 25, all of which with equal propriety may be referred to as stays or stay rods or wires. The braces 23 have their upper ends secured to the upper portion of the positioning member 19 as clearly shown in Fig. 3, and are adapted to brace said member. The upper ends of the braces or radius rods or stays 24 are secured to the tie member 17 and the braces or radius rods 25 have their upper ends secured to the upper supporting bar 11. These braces or stay rods maintain the cushion in proper shape while the same is being used and also prevents undesirable distortion of the upper springs 15.

Attention is directed to the fact that the radius rods 24 not only position the upper springs but also serve to prevent them from buckling when the same are collapsed. This is considered an important feature of the invention since it insures the proper shape or contour to the upper portion of the cushion under all conditions of use.

The spring cushion 10 is adapted to be secured to the back of the seat in any suitable manner. As shown in Fig. 3 of the drawing the cushion is secured to the back of the seat 26 by any suitable means such as the loops 27 which extend about the upper support 11 and are secured to the back of the seat by fastening means such as the tacks 28. Suitable upholstery padding 29 extends over the spring cushion and is adapted to be secured to the back of the seat 26 by the fastening members such as the tacks 30.

It is thought from the foregoing taken in connection with the accompanying drawings that the construction and operation of our device will be apparent to those skilled in the art, and that various changes in size, shape, proportion and details of construction may be made without departing from the spirit and scope of the appended claims.

What we claim is:—

1. In combination, a seat back, springs secured to said back, the springs along the upper edge of said back being coiled, means for securing together a plurality of intermediate coils at the lower portion of each of said coiled springs, a spring connecting member to which said means are secured, a spring positioning member, means for securing the outer ends of the springs at the top and bottom of said back to said positioning member, a plurality of sets of radius rods secured to the lower portion of said positioning member, the upper ends of the rods of said sets being connected to the members that connect the top, bottom and intermediate portions respectively of said upper springs.

2. In combination, a seat back, a plurality of resilient members, means for mounting said members on said back, said members including coiled springs along the upper portion of said back, a tie member, clips for securing the lower portion of a plurality of the coils of each of said coiled springs to said member, a spring positioning member, means for securing the outer ends of said resilient members to said spring positioning member, radius rods having their lower ends secured to the lower portion of said positioning member and having their upper ends secured respectively to said first named means, to said tie member and to the upper portion of said positioning member, reticulated material over said springs and upholstery padding over said material.

3. In a spring structure for the back of car seats or the like, a substantially vertical back frame, a substantially vertical front frame, superimposed rows of double conical springs extending forwardly from the back to the front frame and connected to the frames, a row of substantially barrel shaped springs disposed over the aforesaid rows of springs, a wire connected to the latter springs intermediate their ends, and stay wires connected to said wire and to the lower edge of the front frame to stay and prevent sagging of the first mentioned wire or said upper row of barrel shaped springs.

4. In a spring structure for the back of car seats or the like, a back frame, a front frame, rows of horizontally disposed double conical springs between and connected to the frames, a row of horizontally disposed substantially barrel-shaped springs, arranged over the uppermost row of the aforesaid springs a wire connected to the latter springs intermediate their ends, stay wires connected to said wire and to the lower edge of the front frame to stay and prevent sagging of the first mentioned wire or said upper row of barrel-shaped springs, and diagonally disposed stays between the front frame and the rear frame.

5. In a spring structure for the back of car seats or the like, a back frame, a front frame, rows of double conical springs between the frames, a top row of substantially barrel-shaped springs, a wire connected to the latter springs intermediate their ends, stay wires connected to said wires and to the lower edge of the front frame to stay and prevent sagging of the first mentioned wire or said upper row of barrel-shaped springs, diagonally disposed stays between the front frame and the rear frame, and stay wires connecting the upper and lower edges of the front frame.

6. In a spring structure for the backs of car seats, or the like, a rear frame, a front frame, a row of substantially barrel-shaped

springs connected to the upper edges of said frames, the coils of said springs extending in a direction transversely of the structure, a wire connected to a plurality of coils of said barrel shaped springs at the under sides of said barrel-shaped springs intermediate the ends of the latter, stay wires connected to said wire and to the lower edge of one of the frames to prevent sagging of the top edge of the structure, and other springs arranged between the said frames.

7. In a spring structure for the backs of car seats, or the like, a rear frame, a front frame, a row of substantially barrel-shaped springs connected to the upper edges of said frames, the coils of said springs extending in a direction transversely of the structure, a wire connected to the under sides of said barrel-shaped springs intermediate the ends of the latter, stay wires connected to said wire and to the lower edge of one of the frames to prevent sagging of the top edge of the structure, other springs arranged between the said frames, bracing stays connected to the opposite side edges of the front frame, and bracing stays connecting the upper edge of the back frame with the lower edge of the front frame.

8. In a spring structure, two spaced frames, rows of springs between the frames, means connected to one of the outermost rows of springs intermediate the ends of the latter to maintain the springs of such outermost rows in a sprung condition, and a stay connection between said means and one of the frames.

9. In a spring structure, two spaced frames, rows of springs between the frames, a wire connected to the springs of one row and having connection with the end springs of the adjacent row and terminating thereat, and a bracing stay connected to said wire and to one of said frames.

10. In a spring structure, a front frame, a rear frame, substantially parallel rows of springs connected to said frames, the springs of the upper row being coiled and formed to provide a curved foundation for a resilient rounded upper edge of the structure downward and forwardly from the rear frame to the front frame and means connected to a plurality of intermediate coils of the upper row of springs to maintain the latter in a sprung condition.

In testimony whereof we affix our signatures.

WILLIAM F. STOUFFER.
BRAZIL E. LAMBERT.