June 10, 1930. C. F. HESS 1,762,623

AUTOMOBILE SEAT CONSTRUCTION

Filed Oct. 22, 1928

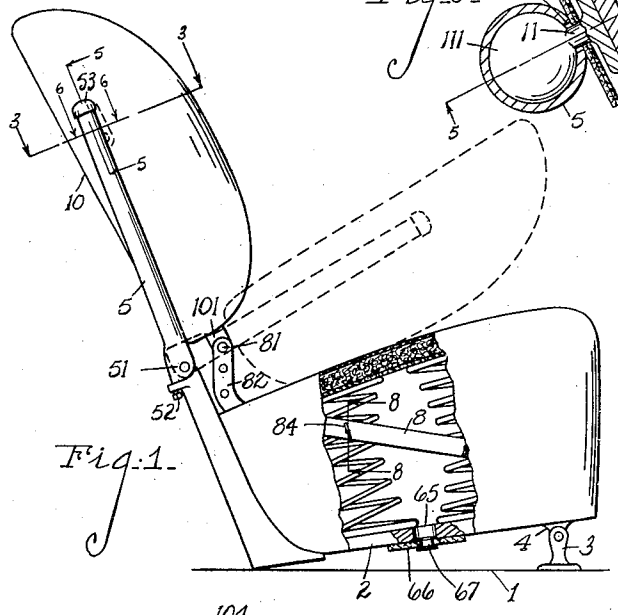


Fig. 1.



Fig. 6.

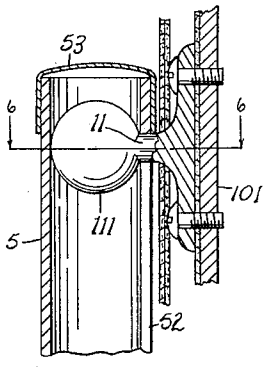


Fig. 5.

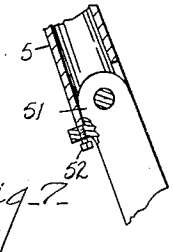


Fig. 7.

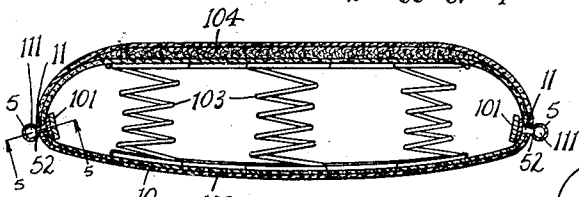


Fig. 3.

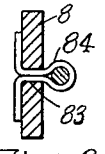


Fig. 8.



Fig. 2.

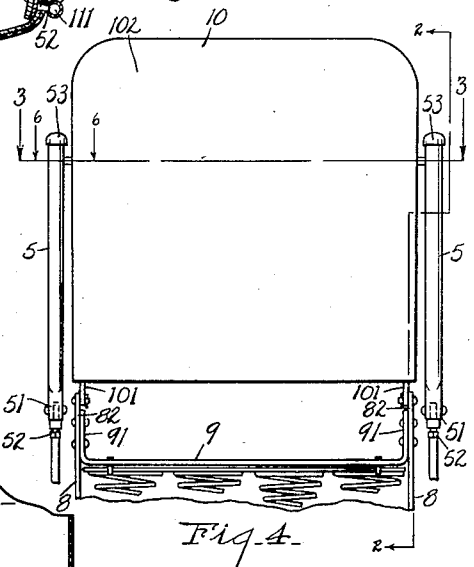


Fig. 4.

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# UNITED STATES PATENT OFFICE

CARL F. HESS, OF COMSTOCK PARK, MICHIGAN

## AUTOMOBILE SEAT CONSTRUCTION

Application filed October 22, 1928. Serial No. 313,980.

This invention is an improvement and development of the structure of my United States Patent No. 1,523,591, issued January 20, 1925. The objects of this invention are:

First, to provide an improved combination seat and back structure in which the back will cooperate with the depression of the seat cushion and move therewith.

Second, to provide such a structure which is foldable or collapsible.

Third, to provide an improved sliding connection for the seat back to the seat posts.

Fourth, to provide such a structure which is compact, of light weight, and very strong and economical to build.

Fifth, to provide an improved back in such a structure.

Objects pertaining to details of construction and operation will appear from the detailed description to follow. A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a detail side elevation view of my improved seat, portions of the seat covering being broken away to show details, parts being shown in dotted lines, and the collapsed position of the back being also indicated by dotted lines.

Fig. 2 is a side elevation sketch, with the cushions in section on line 2—2 of Fig. 4 and the springs omitted, the action when the seat is compressed being shown by dotted lines.

Fig. 3 is an enlarged detail transverse sectional view on line 3—3 of Figs. 1, and 4, showing the relation of the back cushioning and upholstering and the slide connections of the back to the side posts.

Fig. 4 is a fragmentary rear elevation outline sketch of the back and side posts.

Fig. 5 is an enlarged detail sectional elevation view, parts being in full lines, taken on line 5—5 of Figs. 1, 3 and 6, showing the detail of a ball slide in the slideway of a back post or column.

Fig. 6 is an enlarged detail cross sectional view on line 6—6 of Figs, 1, 4 and 5.

Fig. 7 is a detail vertical sectional view of the rule joint at the bottom of the tubular back support or post.

Fig. 8 is a detail sectional view of the side attachment for the outer side springs taken on line 8—8 of Fig. 1.

The parts of the drawings will be identified by their numerals of reference which are the same in all the views.

1 is the floor of an automobile. 2 is the bottom board of the seat. 3 is a hinge bracket secured to the floor 1 which may be adjustable. 4 is the hinge member on the under side of the front part of the bottom 2, whereby the entire seat is hinged to swing forward. This of course is usual construction and may be omitted and the seat fixed directly on the floor 1. 5 are the hinged back supporting posts tubular in form, one at each rear corner of the seat, which are provided with rule joints 51 at the proper elevation for folding the back of the seat forward to horizontal position above the seat. The lower part 55 of each post is an upright and is secured to the rear of the seat frame and supported thereby. The tubular post is collapsed and slotted to pivot as seen in Fig. 7 and an adjusting screw 52 is provided.

A hole 65 in the seat bottom 2 covered by a leather valve 66 having a small perforation 67 at the center whereby, when the cushion is collapsed under the weight of the occupant, the air freely escapes and the ingress of air is obstructed when the cushion springs react. This controls the seat cushion and avoids rebound.

Within the seat cushion at each front corner is an upright 7 bolted or otherwise secured to the seat bottom. Oblique members 8 are pivoted to the upper ends of the posts and extend out through the rear upper corner of the seat cushion where they are upwardly curved at 82 and are secured by pivots 81 to the lower ends of the side bars of the seat back 10. The oblique members 8 are extended upwardly at 82 to form back supports, and a cross bar 9 of heavy metal with upturned ends 91 is riveted be-

tween the ends 82 and rigidly connects the same.

10 is the seat back composed of a bar 101 extending down at each side and curved over the top forming the general framework of the structure. The lower ends of these bars 101 are pivoted at 81 to the oblique bars 8. The back 102 carries the springs 103 which are upholstered with a pad 104 in the usual well-known way.

The top of the tubular back supporting posts 5 are slotted at 54 and are provided with removable caps 53. Secured to each side of the back at the upper portion thereof is a projecting lug 11 terminating in a slide ball 111 fitting the interior of the tubular post 5, the reduced lug portion 11 playing in the slot 54.

It will thus be seen that the back 10 is supported by a side post 5 at each side and is free to reciprocate up and down by the slide balls 111 traversing the upper portion, the contracted lug portion 11 playing in the slot 54. The seat back is thus effectively supported without any special incumbrance, a pair of comparatively small round posts at each side affording the support and permitting the back to reciprocate up and down under the action of the springs, without any parts being exposed to injury or, on the other hand, being in any way liable to injure the user.

The structure will be effective in operation if the back support 5 is not provided with the rule joint 51, but when that is located in correct relation to the pivotal connection of the extensions of the oblique bars 8, the seat is readily foldable and collapsible, which is of distinct advantage in such a structure.

The oblique bars 8 contain perforations 83 opposite the high coiled springs at each side and intermediate coils of the springs are coupled to the side bars by loops of wire 84 extending into the said perforations with the ends expanded as seen in Fig. 6. The springs are thus maintained in proper relation when the cushion collapses and cannot rub and squeak or get out of place.

A simple telescoping slide might be provided in place of the ball slides but they would, of course, lack the advantage of the ball slides. I have not attempted to illustrate all the slides in this behalf. I wish to claim the slide broadly and also to claim the particular ball slide on account of its particular advantage.

I desire to claim the invention in the specific form in which it is illustrated, and also broadly, as pointed out in the appended claims.

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

1. In an automobile seat structure, the combination of a seat bottom pivoted to the floor of an automobile, a deep spring cushion with flexible sides, valved to retard rebound action, upright posts at each front corner within the cushion casing, oblique members pivoted to the upper ends thereof and extending rearwardly to the upper rear edges of said cushion with upturned ends extending into hinge members at each side, a rigid cross bar with upturned ends at the back and top of said seat cushion connecting the rear portions of said oblique members, a back having a supporting bent bar frame with its lower ends pivoted to said oblique members, a tubular back supporting post having a slot at the top and containing a rule joint opposite the hinge at the lower part of said back disposed at each side of said back, an upright at each back corner of the seat frame for each post, and a laterally projecting lug at each side of the back terminating in a ball slide at the upper portion of said back, each said ball slide adapted to reciprocate in the said hollow post, as specified.

2. In an automobile seat structure, the combination of a seat bottom, a deep spring cushion with flexible sides, valved to retard rebound action, upright posts at each front corner within the cushion casing, oblique members pivoted to the upper ends thereof and extending rearwardly to the upper rear edge of said cushion with upturned ends extending into hinge members at each side, a rigid cross bar with upturned ends at the back and top of said seat cushion connecting the rear portions of said oblique members, a back having a supporting bent bar frame with its lower ends pivoted to said oblique members, a tubular back supporting post having a slot at the top and containing a rule joint opposite the hinge at the lower part of said back disposed at each side of said back and secured to the seat bottom, and a laterally projecting lug at each side terminating in a ball slide at the upper portion of said back, each said ball slide adapted to reciprocate in the said hollow post, as specified.

3. In an automobile seat structure, the combination of a seat bottom, a deep spring cushion with flexible sides, upright posts at each front corner within the cushion casing, oblique members pivoted to the upper ends thereof and extending rearwardly to the upper rear edge of said cushion with upturned ends extending into hinge members at each side, a rigid cross bar with upturned ends at the back and top of said seat cushion connecting the rear portions of said oblique members, a back having a supporting bent bar frame with its lower ends pivoted to said oblique members, a tubular back supporting post having a slot at the top and containing a rule joint opposite the

hinge at the lower part of said back disposed at each side of said back and secured to the seat bottom, and a laterally projecting lug at each side terminating in a ball slide at the upper portion of said back, each said ball slide adapted to reciprocate in the said hollow post, as specified.

4. In an automobile seat structure, the combination of a seat bottom, a deep spring cushion with flexible sides, upright posts at each front corner within the cushion casing, oblique members pivoted to the upper ends thereof and extending rearwardly to the upper rear edge of said cushion with upturned ends extending into hinge members at each side, a rigid cross bar with upturned ends at the back and top of said seat cushion connecting the rear portions of said oblique members, a back having a supporting bent bar frame with its lower ends pivoted to said oblique members, a tubular back supporting post having a slot at the top disposed at each side of said back and secured to the seat bottom, and a laterally projecting lug at each side terminating in a ball slide at the upper portion of said back, each said ball slide adapted to reciprocate in the said hollow post, as specified.

5. In an automobile seat structure, the combination of a seat bottom, a deep spring cushion with flexible sides, upright posts at each front corners within the cushion casing, oblique members pivoted to the upper ends thereof and extending rearwardly to the upper rear edge of said cushion with upturned ends extending into hinge members at each side, a rigid cross bar with upturned ends at the back and top of said seat cushion connecting the rear portions of said oblique members, a back having a supporting bent bar frame with its lower ends pivoted to said oblique members, a tubular back supporting post having a slot at the top disposed at each side of said back and secured to the seat bottom, and a laterally projecting lug at each side terminating in a slide at the upper portion of said back, each said slide adapted to reciprocate in the said hollow post, as specified.

6. In an automobile seat structure, the combination of a seat bottom, a deep spring cushion with flexible sides, upright posts at each front corner within the cushion casing, oblique members pivoted to the upper ends thereof and extending rearwardly to the upper rear edge of said cushion with upturned ends extending into hinge members at each side, a rigid cross bar with upturned ends at the back and top of said cushion connecting the rear portions of said oblique members, a back having a supporting bent bar frame with its lower ends pivoted to said oblique members, a back supporting post having a slideway at the top disposed at each side of said back and secured to the seat bottom, and a laterally projecting lug at each side terminating in a slide at the upper portion of said back, each said slide adapted to reciprocate on said slideway, as specified.

7. In an automobile seat structure, the combination of a seat bottom with a deep spring cushion with flexible sides, an upright post at each front corner within the cushion casing, an oblique member pivoted to the upper end of each post and extending rearwardly to the upward rear edge of said cushion and outwardly and upwardly to form a hinge member at each side, a rigid cross bar with upturned ends at the top and back of said cushion connecting the rear portions of said oblique members, an upholstered back independent of said seat having a bar frame with downwardly projecting ends forming hinge members connecting to said oblique members, a back supporting post having a slideway at the top disposed at each side of said back with upright support at the back of the seat frame, a lateral projecting lug at each side of the back terminating in a slide adapted to reciprocate in the said slideway in said support, as specified.

8. In an automobile seat structure, the combination of a seat bottom with deep spring cushions with flexible sides, an upright post at each front corner within the cushion casing, an oblique member pivoted to the upper end of each post and extending rearwardly to the upward rear edge of said cushion and outwardly and upwardly to form hinge members at each side, an upholstered back independent of said seat having a bar frame with downwardly projecting ends forming hinge members connecting to said oblique members, a back supporting post with a slideway at the top disposed at each side of said back and secured to the seat bottom, a lateral projecting lug at each side of the back terminating in a slide adapted to reciprocate in the said slideway in said support, as specified.

9. In an automobile seat structure, the combination of a seat bottom with deep spring cushions with flexible sides, an upright post at each front corner within the cushion casing, an oblique member pivoted to the upper end of each post and extending rearwardly to the upward rear edge of said cushion and outwardly to form hinge members at each side, and loop connections from intermediate coils of the side springs to said oblique bars, as specified.

In witness whereof I have hereunto set my hand.

CARL F. HESS.