July 14, 1936. F. O. CHURCH 2,047,616

SEAT CONSTRUCTION

Filed May 10, 1935

Fig. 1.

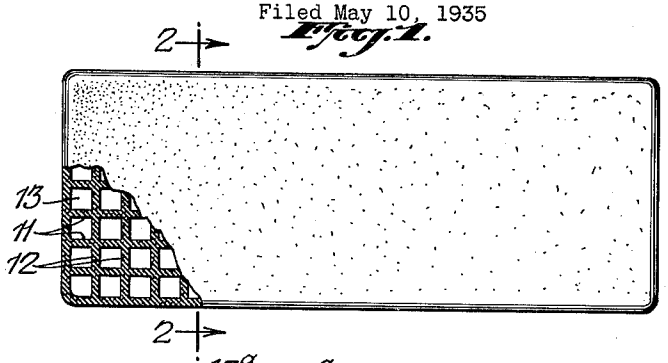


Fig. 2.

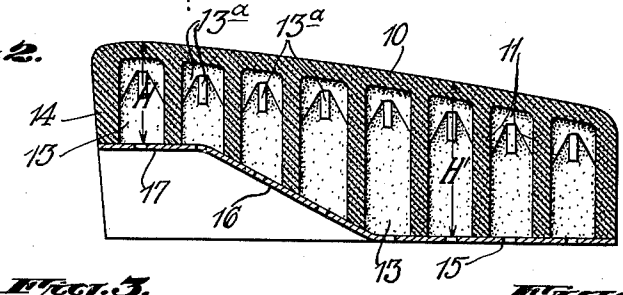


Fig. 3.

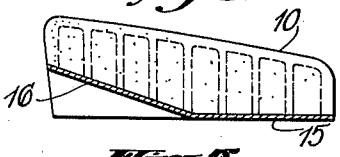


Fig. 4.

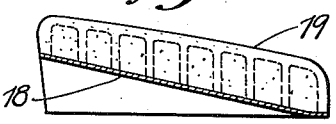


Fig. 5.

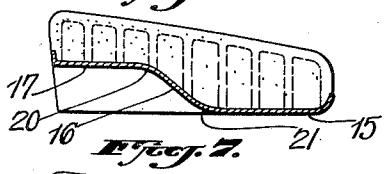


Fig. 6.

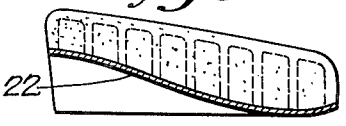


Fig. 7.

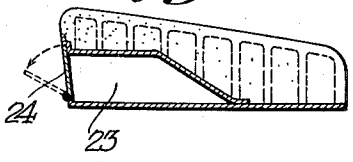


Fig. 8.

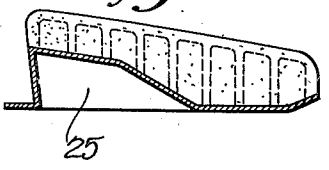
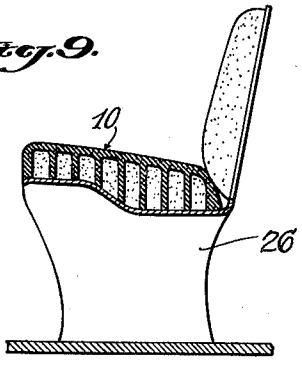


Fig. 9.



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Patented July 14, 1936

2,047,616

UNITED STATES PATENT OFFICE

2,047,616

SEAT CONSTRUCTION

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Application May 10, 1935, Serial No. 20,718

3 Claims. (Cl. 155—179)

My invention relates to a seat construction and more particularly to seat constructions having soft yielding cushioning material particularly for vehicles. When a person is supported in a seated position, on yielding cushioning material, the greatest weight is on the areas somewhat back of the middle line of the seat. The weight forwardly toward the knees is correspondingly much less. Therefore, the greatest tendency for deflection of the cushioning material is in these areas toward the back of the seat.

Heretofore, in upholstery and cushions of the usual construction, the depth of cushioning material in the forward areas of the seat has been as great as in the rear areas and in upholstered seats of cushions, which slope downwardly toward the back, the depth of cushioning material may be even less than at or near the front edge of the seat. Consequently, there has been a minimum depth of cushioning material at the areas of greatest load and a maximum or excess depth where the load is less and where less cushioning material is needed.

In my present invention, I provide a seat construction and seat cushion in which the above deficiencies are avoided and in which the depth of cushion is greatest where the load or weight is greatest or most concentrated and also a construction in which there is less tendency for a person to slide forward on the cushion or for the cushion to slide forwardly on its supporting base.

In my invention, I provide a base for a cushion, or for upholstering, that is higher at or toward the front of the seat than at the rear areas, so that the distance from the top surface of the cushion or upholstery to the supporting surface is less at the front than the rear areas, even though the surface of the seat or cushion may slope upwardly toward its front edge. This provides a much greater depth for the cushioning material in the rear areas than forwardly thereof. The raising or sloping upwardly of the front areas of the supporting surface may start from about the middle line of the seat and terminate a short distance from the front edge and then continue in a level direction to the front edge. Or, the supporting surface may slope upwardly in a uniform gradual slope or in a varying curvature of slope.

In any case, the supporting surface upon which the cushion or upholstery rests and is supported is higher at some point near the front edge than at the rear areas so that upon a sudden application of the brakes of a vehicle or other sudden stopping of the car the tendency for the seat to slide forwardly will be counteracted. The construction may be used with cushions or upholstery of various types, that is of spring or other construction, but is particularly suited for cushions and upholstery made of cellular rubber or foamed latex rubber.

The various features of the invention are illustrated in the accompanying drawing, in which—

Fig. 1 is a plan view of a seat cushion embodying a preferred form of the invention, a part being broken away to show the interior construction; Fig. 2 is a vertical section taken on line 2—2 of Fig. 1; Figs. 3, 4, 5, 6, 7 and 8 are diagrammatic views similar to that of Fig. 2 of various modified forms of an embodiment of the invention; and Fig. 9 is a diagrammatic vertical section of a bus or other vehicle seat embodying the invention.

In the accompanying drawing, the invention is illustrated as applied to a cushion or upholstery made of a cellular or foamed latex rubber. This cushion or upholstery consists of a top layer 10 supported by spaced vertical partitions 11 and 12 arranged at right angles and intersecting to form pockets 13 closed at their upper ends by the top layer 10 and opening downwardly. A circumferential or edge wall 14 encloses the structure. Triangular reinforcing webs 13a are also provided between the top 10 and the partitions 11 and 12 and wall 14 and integrally united to the top, partition and wall. The top 10 and the various vertical walls are formed of cellular rubber, that is rubber which has been foamed while in an aqueous dispersion such as a compounded latex and then set and vulcanized so that it retains its foamed or cell-like structure. It will be understood that while the invention is described with specific reference to a cellular rubber of this specific origin and construction, it may be applied to upholstery or cushions of other construction or to cellular rubber obtained in other ways.

The rear half of the cushion is supported on a horizontal plate or support 15, on which rest the lower edges of the partitions 11, 12 and 14. The base slopes upwardly from about its mid-part in an upwardly sloping wall or surface 16 and then, when near the front edge, extends in a horizontal area 17.

It will be apparent, therefore, that the depth H at the front edge of the cushion is much less than the depth H' in the rear areas, even though the top surface of the upholstery or cushion slopes downwardly toward the back edge. Moreover, when the above construction is used for a vehicle seat, the upholstery or cushion will be

anchored or secured from being thrown forwardly inasmuch as the forward thrust will be taken up largely by the sloping surface 16, which would resist any forward movement of the cushion.

The particular form of the supporting surface may be varied somewhat from that shown in Figs. 3 to 8 inclusive. In Fig. 3, the horizontal area 17 is omitted and the sloping area extends from the surface 15 to the front edge of the seat. In Fig. 4, a single sloping surface 18 is used, the slope of which may be steeper than that of the top surface 19 of the cushion so as to make the depth of the cushion greater towards the back than towards the front. In Fig. 5, the angle joining the surface 16 to the surfaces 15 and 17 is rounded, as at 20 and 21. In Fig. 6, a single sloping surface 22 is employed, but it is given reversed curvatures toward the front and rear edges to approximate the supporting surfaces of Figs. 2 and 5.

In the construction shown in Figs. 2 to 6 inclusive, the supporting surfaces for the cushion or upholstery may either form a part of the floor of the vehicle or may be placed on the floor. In the latter case, the front part of the seat construction may provide a pocket or locker 23, as shown in Fig. 7, which may be closed by a door 24, thus providing a locker space which has been heretofore occupied to no advantage by the upholstery construction. In Fig. 8, the cushion supporting surface is shown as a part of the floor of the vehicle, the front raised part of the cushion supporting surface forming a space 25 below the floor which may in some cases receive a part of the transmission mechanism or other mechanisms of the vehicle. The construction shown at 25 in Fig. 8 also gives a transverse bracing to the body of the vehicle.

The seat construction may rest directly on the floor of the vehicle, as shown in Figs. 1 to 8 inclusive, or may be supported on standards 26 as used in buses. In such constructions, the lifting or raising of the upper part of the cushion supporting surface provides greater space underneath the seat for sweeping or cleaning.

My invention provides a seat construction which not only economizes in the use of upholstering material but proportions the cushioning effect to the amount of weight to be supported providing greater depth where the concentration of weight is greater and lesser depth where the weight is less. Also, it provides a seat that automatically fits into position and tends to retain its position and to hold the occupants from forward thrusts such as occasioned by sudden stopping of the vehicle. The covering for the upholstery may consist of a slip construction into which the cushion of molded rubber may be slipped and when the cushion is placed in position on the supporting surface, it tends automatically to assume its proper position thereon.

What I claim is:

1. A seat construction comprising a rigid supporting base having a rear seating portion, an extending leg supporting portion inclined upwardly from said seating portion, and a resilient cushion on said base shaped to conform to said base to thereby have greater depth above said seating portion than above said forward leg supporting portion.

2. A seat construction comprising a rigid supporting base having a substantially horizontal seating portion, a leg supporting portion sloping upwardly and forwardly from said seating portion and thence substantially horizontally at a level above that of said seating portion, and a resilient cushion conforming to said base to thereby have a greater depth above said rear seating portion than above said forward leg supporting portion.

3. A seat construction comprising a rigid supporting base having a substantially horizontal seating portion, a leg supporting portion sloping upwardly and forwardly from said seating portion and thence substantially horizontally at a level above that of said seating portion and forming a space beneath said leg portion, a resilient cushion conforming to said base to thereby have a greater depth above said rear seating portion than above said forward leg supporting portion, and a hinged front closure for the space beneath said leg supporting portion of said base.

FRANKLIN O. CHURCH.