Oct. 18, 1966 A. O. RADKE ETAL 3,279,849

CUSHION

Filed July 13, 1964

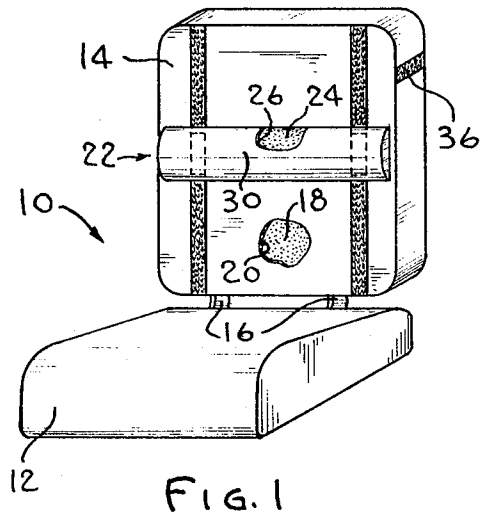


FIG. 1

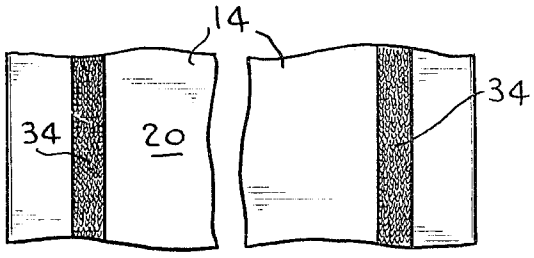


FIG. 2

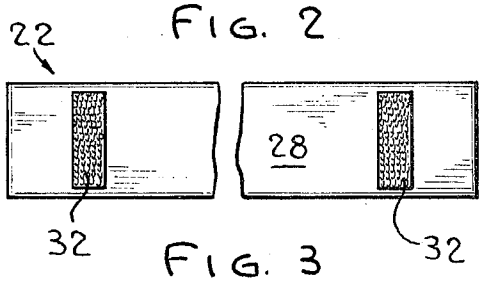


FIG. 3

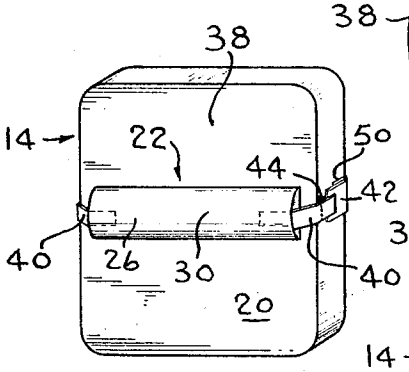


FIG. 4

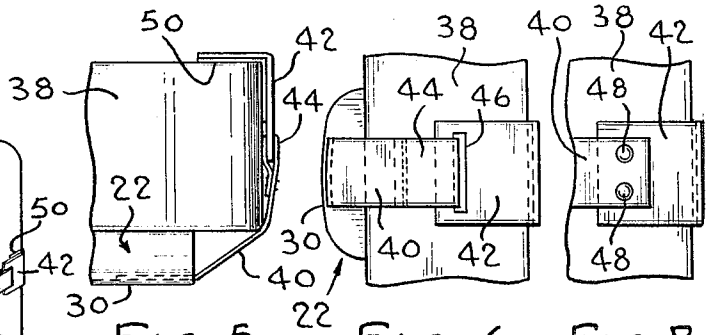


FIG. 5

FIG. 6

FIG. 7

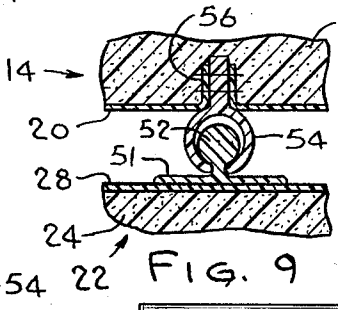


FIG. 9

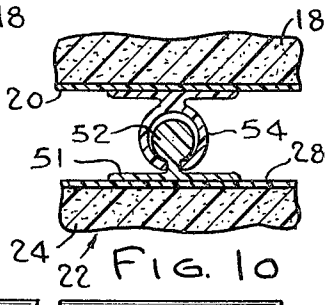


FIG. 10

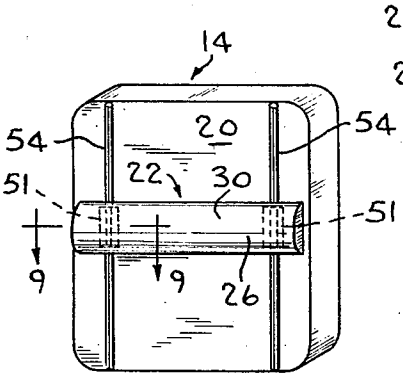


FIG. 8

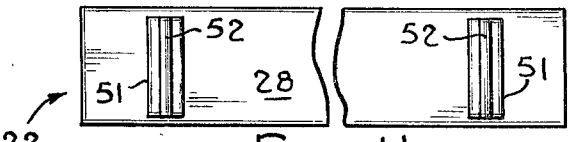


FIG. 11

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CUSHION

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1 Claim. (Cl. 297—284)

This invention pertains to resilient cushions of the type used as seat or back cushions for vehicle and/or machinery seats.

The basic idea underlying this invention is to provide a resilient support member which may be selectively positioned and attached to the resilient seat or back cushion in order to provide a contour which will provide a greater degree of comfort to the occupant. A particular application of this invention is the provision of a support for the lumbar area of the occupant, in which case the support member is selectively positioned and attached to the back cushion in a position which is chosen to provide the greatest comfort to the particular occupant. Further, it is within the contemplation of this invention to provide attachment means which will permit the occupant to change the location of the lumbar support without rising from the seat. This feature is of great practical significance, since in many instances, the fatigue of the user is greatly reduced if the supporting contour of the seat can be changed from time to time. To attain this, attachment means may be provided which will engage the lumbar support and its associated cushion by the pressure of the occupant's back as the seat is occupied.

Further, it is within the contemplation of this invention to provide a support of this type which will not significantly impair the resiliency or cushioning effect of the cushion. For this purpose the attachment means includes a flexible member, which cooperates to attach the resilient support, yet flexes sufficiently so as not to interfere with movement of the overall cushion in its use.

In view of the above remarks, the principal object of this invention is to provide improved means for selectively varying the overall contour of a resilient seat or back cushion without impairing the desired resilient characteristics of the cushion.

A more specific object of this invention is to provide a resilient and adjustable lumbar support for a resilient back cushion of a vehicle or machinery seat.

A further specific object of this invention is to provide attachment means for a lumbar support which will permit easier alignment and attachment of the support to the cushion in the particular location desired by the occupant.

Other objects and advantages will be pointed out in, or be apparent from, the specification and claims, as will obvious modifications of the embodiments shown in the drawings, in which:

FIG. 1 is a perspective view of a vehicle seat illustrating the preferred embodiment of this invention with portions broken away to illustrate the construction of the support and cushion;

FIG. 2 is an enlarged fragmentary view of the back cushion shown in FIG. 1;

FIG. 3 is an enlarged view of the back surface of the support shown in FIG. 1;

FIG. 4 is a modification of the invention shown in FIG. 1 showing elastic strap means and clip means employed in securing the support to the cushion;

FIG. 5 is an enlarged fragmentary top view of the support and cushion shown in FIG. 4;

FIGS. 6 and 7 are side views of the support and cushion shown in FIG. 5 illustrating two alternative means for securing the strap and clip means to each other;

FIG. 8 is another modification of the invention shown in the previous figures;

FIGS. 9 and 10 are enlarged cross-section views of alternative methods of securing the support to the cushion shown in FIG. 8; and

FIG. 11 is a fragmentary view of the back surface of the support shown in FIG. 8.

Referring to the drawings in detail, FIG. 1 shows a conventional vehicle seat **10** provided with seat and back cushions **12** and **14** respectively which are connected by an appropriate supporting structure indicated at **16**. The cushions are comprised of resilient material **18** such as foam, springs, or a combination thereof, which is enclosed in a suitable flexible cover **20**.

A support member **22**, comprised of resilient material **24** and enclosed in a flexible cover **26** is attached to the back cushion **14**. The support has a generally flat back side **28** and an outwardly curved or contoured front face **30** which in the embodiment of FIG. 1 is intended to provide the proper cushioned support for the lumbar area of the occupant.

The support is removably attached to the back cushion by two pairs of strips, each pair being comprised of a strip of resilient hook engaging means **32** and a strip of pile engaging means **34**. This type of attachment means is disclosed in U.S. Patent 2,717,437, issued to George de Mestral on September 13, 1955, and is generally marketed under the trademark Velcro. The strips permit relatively easy disengagement of the parts when the parts are pulled apart in a generally perpendicular direction in respect to their mating faces, but offer substantial resistance to force components in a direction parallel to the mating faces. The faces engage each other by the mere application of nominal pressure of the hook members against the pile. The characteristics of the Velcro attachment means are of particular significance when attaching a lumbar support member to the back cushion of a seat, because the vertical forces imparted to the support during oscillation of the seat and its occupant will be effectively resisted, yet the support will be easily removable. A further significant advantage resides in the adjustability feature of the support. The occupant only has to disengage the attachment means from each other to position the support against his back in the particular position which he believes to be most comfortable, and to lean back against the back cushion to thereby force the hook and pile engagement means to attach the support to the cushion. It should be appreciated that this type of adjustment may be accomplished without the occupant having to rise from the seat and even without requiring the occupant to turn back and to take his eyes off the road or other matters requiring his attention. For example, a truck driver is able to adjust or readjust the position of the support without having to stop or to slow down his vehicle.

The back cushion may be provided with an additional strip of pile material **36**, which may be utilized to hang the support on the side of the seat in case the occupant does not desire to utilize this type of support.

In the embodiment shown in FIGS. 4–7 the support member **22** is of identical design as that described heretofore, however, it is fixed to the cushion **38** by means of two elastic straps **40** provided at each end of the support member and provided at their other ends with L-shaped metal clips **42**. The straps may be either sewn to provide a loop **44** which engages an appropriate slot **46** in the clip, or they may be riveted at **48** to the clips as shown in FIG. 7.

The inwardly bent leg of each clip is provided with a nonskid backing **50**, which under the force exerted by the elastic straps **40**, is sufficient to maintain a support in any preselected position in respect to the cushion **38**. At this point it should be noted that the elastic straps are sewn to the cover **26** on the front face **30** of the support and therefore upon depression of the cushion and its sup-

port member, tend to be elongated and thereby increase the holding force during oscillation of the seat.

The embodiment shown in FIGS. 8–11 provides an alternative method of securing the support to the cushion. The backside of the support is provided with small elastic strips **51** having projections **52** and being either bonded or otherwise fastened to the support. The projections cooperate with split welts **54** which may be either fastened in the seam **56** of the cushion cover as shown in FIG. 9 or may be bonded to the cushion as shown in FIG. 10. The split welt is of resilient material and, therefore, also will not materially impede the cushioning effect of the cushion. The resiliency also permits the jaws of the welt to spread apart a sufficient amount to permit removal and attachment of the support, yet the force exerted by them is sufficient to frictionally maintain the support in its position during use of the seat.

Although several embodiments of the present invention have been illustrated and described, it will be apparent to those skilled in the art that various changes and modification may be made therein without departing from the spirit of the invention or from the scope of the appended claim.

We claim:

The back cushion assembly for a vehicle seat comprising, a resilient back cushion member, a support member having a curved contour adapted to extend beyond that face of the back cushion which is normally intended to come into contact with the seat's occupant, attachment means including pile means secured to one of said members and pile engaging hook means secured to the other of said members, the means of said attachment means which is secured to said seat member extending in a vertical direction in respect to the seat, said members and said attachment means cooperating to removably attach said support member to said back cushion member, and said hook and pile means cooperating to permit such attachment by the pressure exerted by an occupant of the seat when moving his back against the back cushion member; said pile means and hook means being in the form of flexible strips to thereby maintain substantially the same resiliency of said cushion as would be the case in absence of said pile and hook means.

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