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(54) **Head rest with lateral restraint**

(57) The back of a vehicle seat is provided with a head rest. The head rest incorporates two wings 9, 11, 27, 28. The head rest 26, fig. 4 is movable from a first position in which the wings are substantially retracted, to a second position in which the wings extend forwardly on either side of a central part 26 of the head rest, thus providing lateral support for the head of a person utilising the head rest. The wings may be formed integrally with the central part of the head rest as in fig. 4 or may be formed as separate elements as in fig. 2, where they are pivoted on a horizontal shaft. In this embodiment, they may be connected to the main head rest by fan like elements 13.

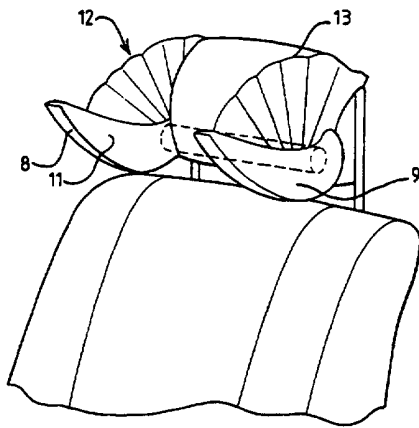


FIG 2

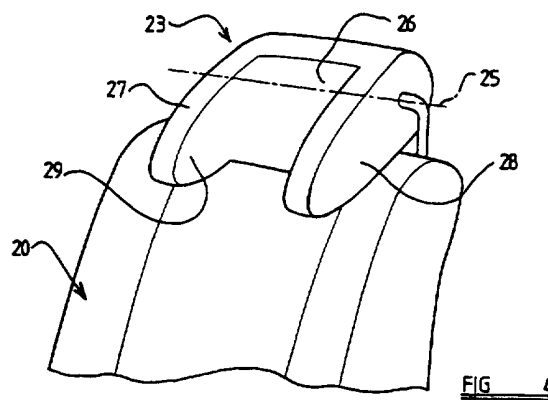


FIG 4

GB 2 302 268 A

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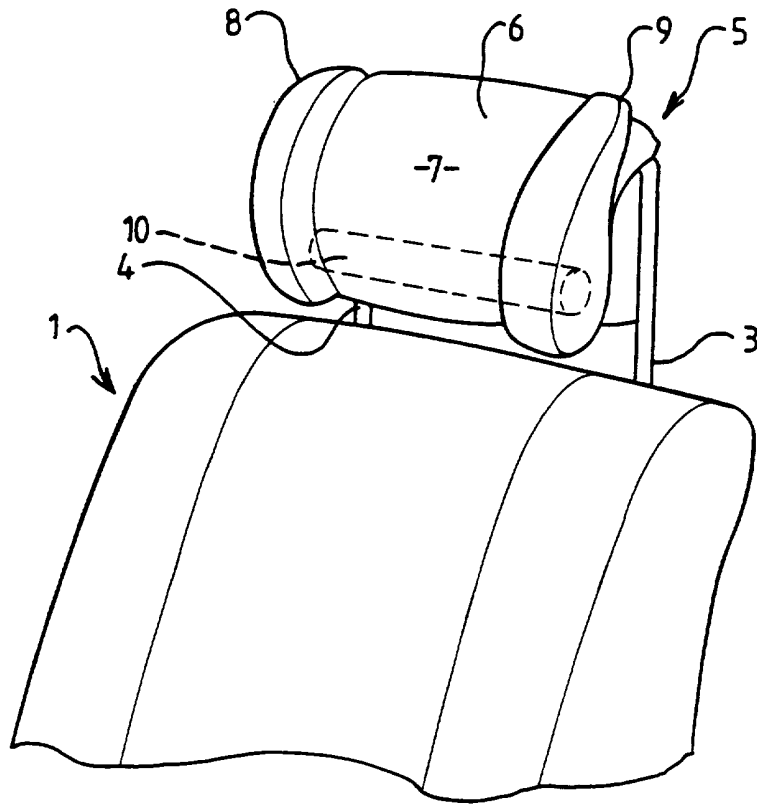


FIG 1

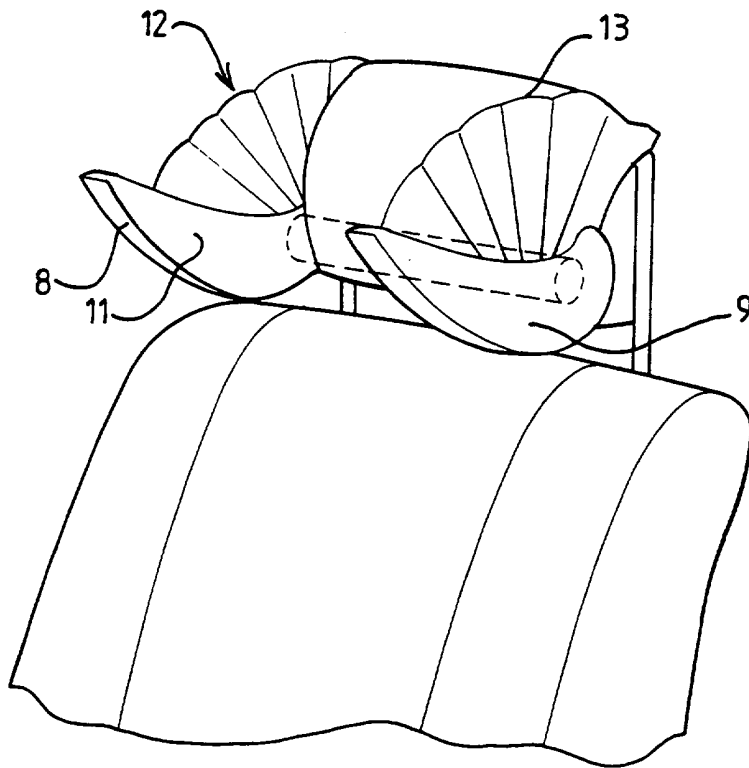


FIG 2

2 1 3

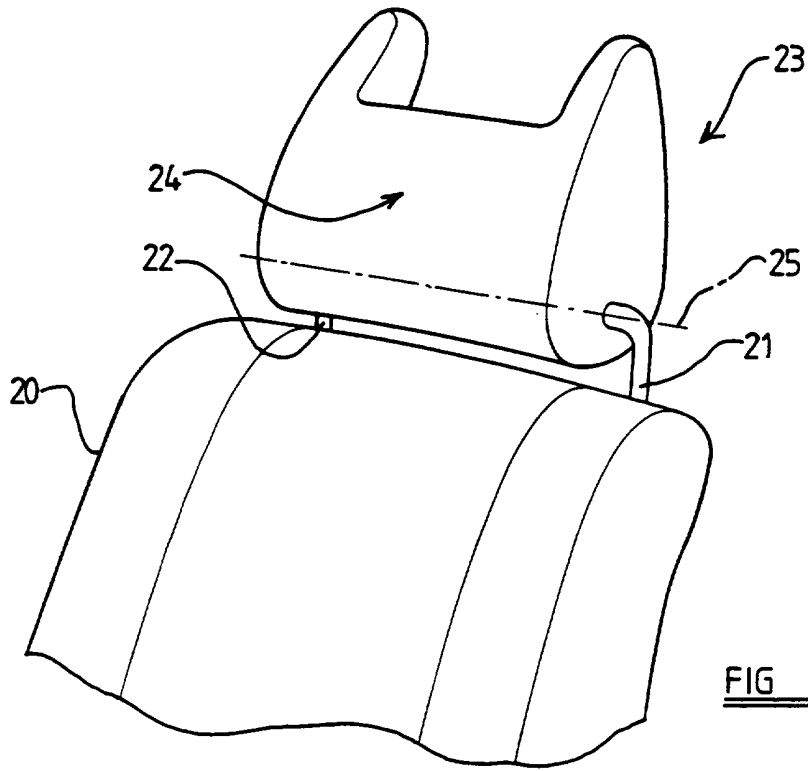


FIG 3

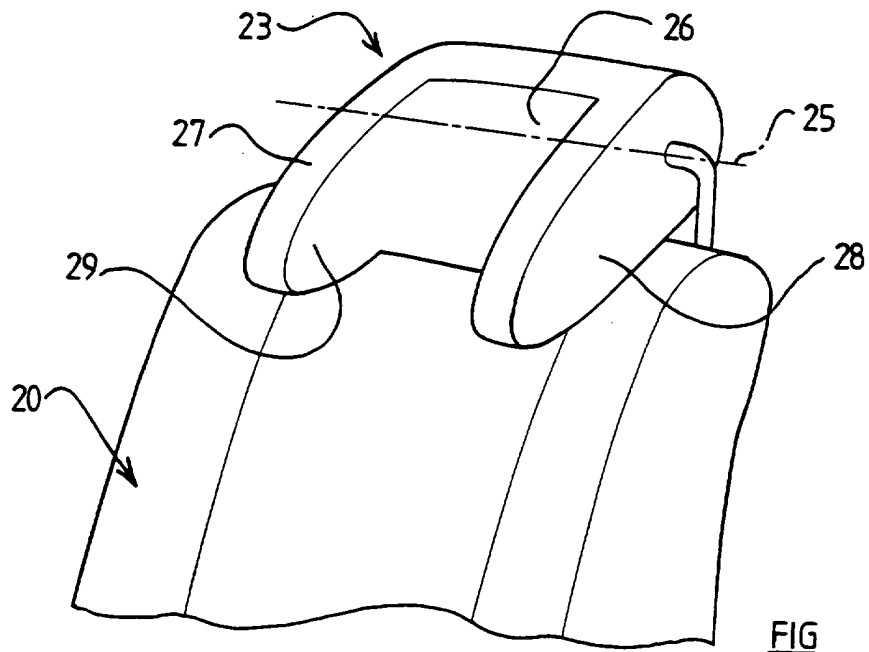
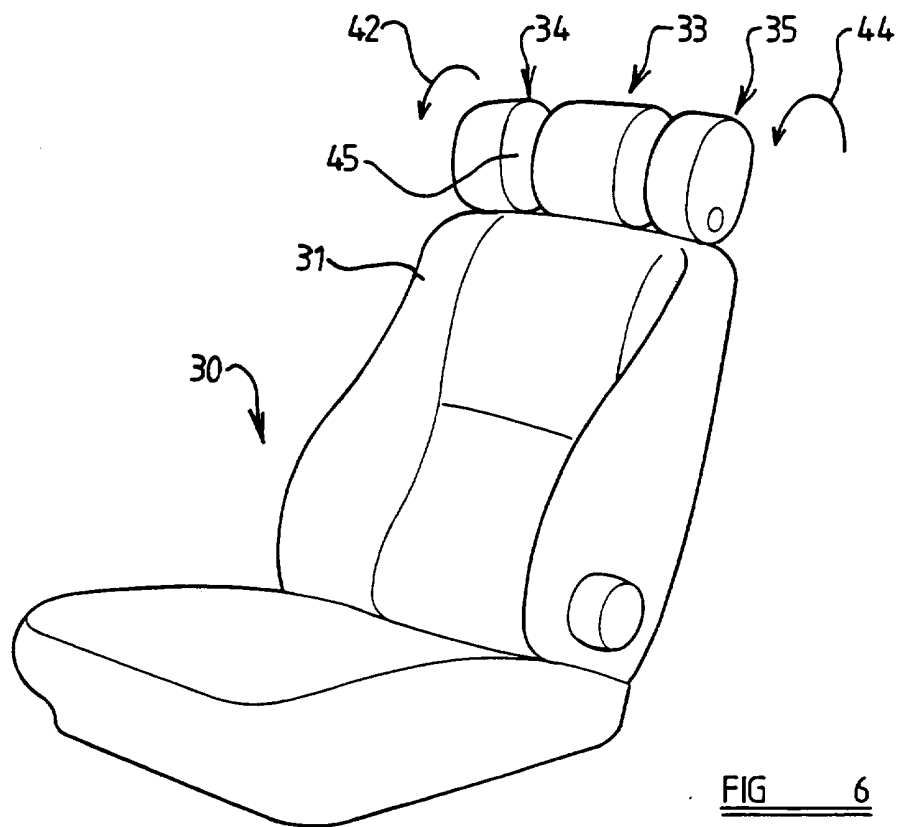
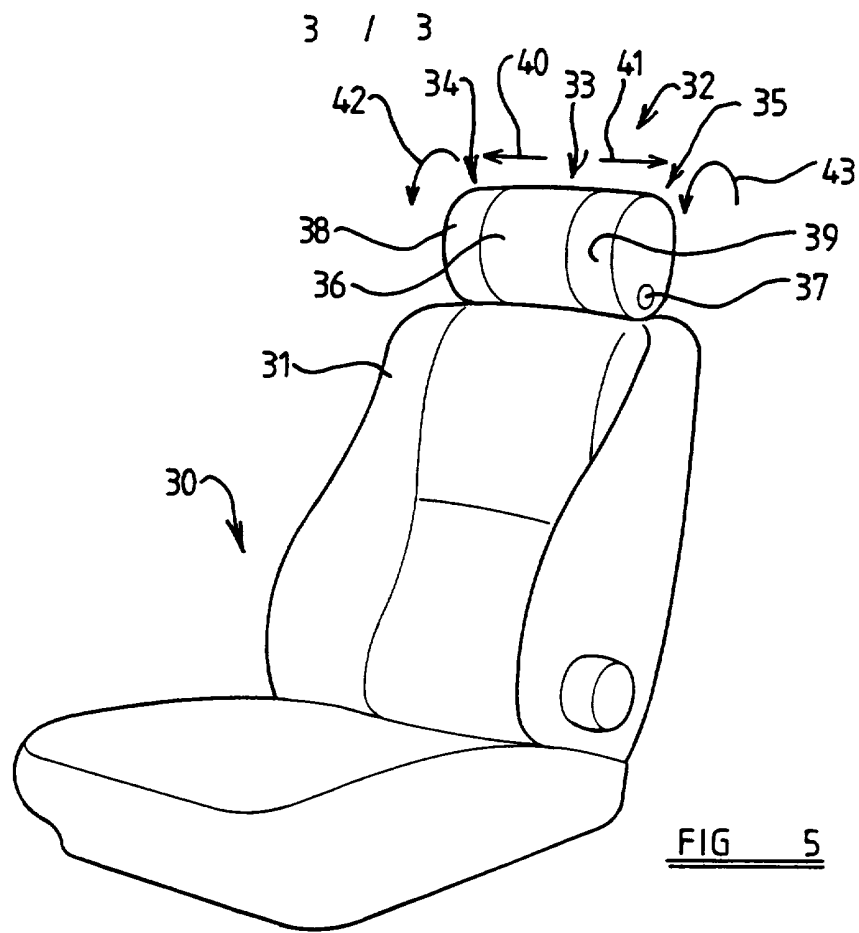


FIG 4



PATENTS ACT 1977
P9879GB-NF/jsd

DESCRIPTION OF INVENTION

"IMPROVEMENTS IN OR RELATING TO A HEAD REST"

THE PRESENT INVENTION relates to a head rest, and more particularly relates to a head rest adapted to be mounted on or to form part of a vehicle seat.

A typical head rest, adapted to be mounted on, or forming part of a vehicle seat, is adapted to be adjusted vertically, that is to say in an up-and-down direction, and occasionally is adapted so that the rake or angle of inclination of the head rest may be adjusted. Even though the head rest can be adjusted in this manner, people sometimes find the head rest to be uncomfortable, especially if they wish to go to sleep while using the head rest.

The present invention seeks to provide an improved head rest for use in conjunction with, or as part of, a seat in a motor vehicle.

According to this invention there is provided a head rest adapted to be mounted on or forming part of a seat in a motor vehicle, the head rest providing means defining a central part having a surface adapted to provide support for the head of a person using the head rest and being associated with two wings, the head rest having a first condition in which the wings are substantially retracted and a second condition in which the wings project forwardly from the said central part, thus being located on

either side of a space located horizontally in front of the said central part.

The wings may be adapted to rotate about a horizontal axis and are preferably interconnected so that they rotate simultaneously.

The wings may be formed separately of the central part of the head rest, and are mounted for rotation on a horizontally extending shaft.

In one embodiment a separate element is provided, associated with each wing, adapted to extend across the space defined between each wing and the respective lateral side of the central portion of the head rest when the wings have been extended forwardly of the central portion of the head rest.

The element may comprise a fan-like element.

In an alternative embodiment the wings are mounted in such a way that the horizontal spacing between the wings may be adjusted.

Preferably the shaft is a telescopic shaft of adjustable length.

Conveniently the wings, in the retracted condition, each have a front surface substantially aligned with the support-providing surface of said central part.

Alternatively the wings are formed integrally with the said central part of the head rest.

Conveniently the inner face of each wing is padded or upholstered. The invention also relates to a vehicle seat provided with or incorporating a head rest as described above.

In order that the invention may be more readily understood, and so that further features thereof may be appreciated, the invention will now be described, by way of example, with reference to the accompanying drawings in which

FIGURE 1 is a perspective view of one embodiment of the invention in a first condition,

FIGURE 2 is a corresponding perspective view of the embodiment of Figure 1 when in a second condition,

FIGURE 3 is a perspective view of an alternative embodiment of the invention in a first condition, and

FIGURE 4 is a perspective view of the embodiment of Figure 3 in a second condition,

FIGURE 5 is a perspective view of a further alternative embodiment of the invention in a first condition, and

FIGURE 6 is a perspective view of the embodiment of Figure 5 in a second condition.

Referring initially to Figure 1 of the accompanying drawings, a vehicle seat has a back 1 of conventional form. The back of the seat is provided with two upstanding supports 3,4 which may be adjustable in the vertical or up-and-down direction, which support a head rest 5. The head

rest 5 comprises a centrally located element 6 presenting a padded convex front face 7 which is located centrally above the back of the seat, at a position to be engaged by the back of the head of an occupant of the seat.

Located on each side of the central portion 6 of the head rest are two wings 8,9. The wings are mounted on the opposed ends of a rotatable shaft 10 which extends horizontally through the central portion 6 of the head rest. The wings have an initial or "retracted" position in which the wings 8 and 9 are substantially co-aligned with the opposed lateral ends of the central part 6 of the head rest. When the head rest is in this condition the head rest is of substantially conventional appearance, having a central region 6 presenting the convex front face 7 and two slightly forwardly extending regions defined by the wings 8 and 9 located at each lateral side of the central portion 6.

The wings 8,9 may be adjusted to a forwardly extending position, the wings rotating simultaneously about the axis defined by the horizontal shaft 10. The wings then occupy the position illustrated in Figure 2. The wings thus extend forwardly of the central part 6 of the head rest on either side of the head rest. The wings are thus located on either side of a space located horizontally in front of the central part of the head rest. It is to be appreciated that the inwardly facing faces, such as the face 11, of the wings 8 and 9 may be formed of a padded or upholstered material.

Whilst the wings may be so configured that when they have been pivoted to the forwardly extending position, part of each wing itself is still located adjacent the respective lateral side of the central part 6 of the head

rest, in the embodiment illustrated, each wing is of a relatively small size, but is associated with a fan-like element 12,13 which may be made of a woven material having respective edges connected to the wing portion and to the central part 6 of the head rest. Thus, when the wings 8 and 9 have been folded forwardly to the position illustrated in Figure 2, the fan-like elements 12,13 are located in the space between each wing and the respective lateral side edge of the head rest.

It is to be appreciated that a person utilising a vehicle seat provided with a head rest of the type illustrated in Figures 1 and 2 may utilise the head rest with the wings in the initial or "retracted" position of Figure 1. However, if the person utilising a head rest wishes to go to sleep, the person may pivot the wings simultaneously forwardly simply by grasping one or both wings and pulling them so that the wings rotate about the axis defined by the shaft 10. The wings will then extend to either side of the head of a person using the seat provided with the head rest, giving the head of the person lateral support, and making it more comfortable to slumber or sleep.

Figures 3 and 4 illustrate an alternative embodiment of the invention. Referring initially to Figure 3, a vehicle seat has a back 20 of conventional design having two substantially vertically extending supports 21,22 which are adjustable in the vertical or up-and-down position, the supports having inwardly directed upper ends which rotatably support an integrally formed head rest 23. As will be appreciated, the head rest 23 may be rotated between two alternate positions.

In the position illustrated in Figure 3, the head rest presents a convex padded front face 24 which is located at a central position above the seat back 20, thus being able to provide support to the head of a person utilising the vehicle seat.

However, the head rest 23 may be rotated about a horizontal axis 25 defined by the supports 21,22 to an alternate position illustrated in Figure 4. When the head rest has been rotated, a part of the head rest having a different configuration to that illustrated in Figure 3 is located above the central part of the back 20 of the seat. When the head rest has been rotated, the head rest presents a central padded part 26 and two forwardly extending wings 27,28 which extend forwardly of the central padded part 26. The wings 27,28, in the first position of the head rest were in a retracted position above and behind the central part of the head rest. The inner faces of the wings 27,28, such as the face 29, may be padded. The wings are located on either side of a space located horizontally in front of the central part of the head rest.

It is to be appreciated that the head rest illustrated in Figures 3 and 4 may readily be moved from the position shown in Figure 3 to the position shown in Figure 4 and vice versa. When in the position illustrated in Figure 3, the head rest acts as a conventional head rest, but when in the condition illustrated in Figure 4, the head rest presents two forwardly extending wings 27,28 located on either side of the head of a person utilising the head rest, thus providing lateral support which may be desirable if the person using the head rest wishes to sleep or slumber.

Figures 5 and 6 illustrate a further alternative embodiment of the invention. In this embodiment a vehicle seat 30 is provided with a back 31 which carries, at its upper edge, the head rest 32. The head rest 32 comprises a central section 33 and two wings 34,35 located to either side of the central section 33. The central section 33 is of cylindrical form, the central axis of the cylinder lying horizontally and extending above the top of the back of the seat 31. The central portion 33 thus presents a front arcuate surface 36 adapted to provide support for the head of a person utilising the head rest.

The wings 34,35 are connected to the central part 33 by means of a telescopic shaft 37. (The shaft 37 is illustrated in the accompanying drawings but, in a production model of the invention, the shaft would be substantially concealed).

Each wing 34,35 is formed as a segment of a cylinder of the same diameter as the cylinder forming the central part 33 of the head rest. In an initial condition as illustrated in Figure 5, the wings 34,35 are located in alignment with the central portion 33. The wings 34,35 present front faces 38,39 which are substantially aligned with the front face 36 of the central part 33 of the head rest. Thus, in the condition illustrated, the head rest appears to be a simple head rest of cylindrical form.

Because the shaft 37 is a telescopic shaft, the wings 34,35 can be moved apart, as illustrated by the arrows 40,41, the wings then being separated from the central part 33 of the head rest. The wings may then be rotated forwardly about the axis of the shaft 37 as indicated by the arrows 42,43. The wings 34,35 will then project forwardly to be located on either side of a space

located horizontally in front of the central part 33 of the head rest. The inner face of each wing (only the inner face 45 of the wing 34 is visible in Figure 6) will be padded. It is to be noted that the shaft 37 is not co-aligned with the axis of the wings and the axis of the cylindrical central part 33 in the condition illustrated in Figure 3, but instead is off-set located adjacent the periphery of the cylinder, so that as the wings rotate, the wings become displaced to be located forwardly of the central part of the head rest.

CLAIMS:

1. A head rest adapted to be mounted on or forming part of a seat in a motor vehicle, the head rest providing means defining a central part having a surface adapted to provide support for the head of a person using the head rest and being associated with two wings, the head rest having a first condition in which the wings are substantially retracted and a second condition in which the wings project forwardly from the said central part, thus being located on either side of a space located horizontally in front of the said central part.
2. A head rest according to Claim 1 wherein the wings are adapted to rotate about a horizontal axis.
3. A head rest according to Claim 2 wherein the wings are inter-connected so that the wings rotate about said horizontal axis simultaneously.
4. A head rest according to any one of Claims 1 to 3 wherein the wings are formed separately of the central part of the head rest, and are mounted for rotation on a horizontally extending shaft.
5. A head rest according to any one of Claims 1 to 4 wherein the wings are mounted in such a way that the horizontal spacing between the wings may be adjusted.
6. A head rest according to Claim 5 as dependent on Claim 4 wherein the shaft is a telescopic shaft of adjustable length.

7. A head rest according to any one of the preceding Claims wherein the wings, in the retracted condition, each have a front surface substantially aligned with the support-providing surface of said selected central part.

8. A head rest according to Claim 4 wherein a separate element is provided, associated with each wing, adapted to extend across the space defined between each wing and the respective lateral side of the central portion of the head rest when the wings have been extended forwardly of the central portion of the head rest.

9. A head rest according to Claim 8 wherein the said element comprises a fan-like element.

10. A head rest according to any one of Claims 1 to 3 wherein the wings are formed integrally with the said central part of the head rest.

11. A head rest according to any one of the preceding Claims wherein the inner face of each wing is padded or upholstered.

12. A vehicle seat provided with or incorporating a head rest according to any one of the preceding Claims.

13. A head rest substantially as herein described with reference to and as shown in Figures 1 and 2 of the accompanying drawings.

14. A head rest substantially as herein described with reference to and as shown in Figures 3 and 4 of the accompanying drawings.

15. A head rest substantially as herein described with reference to and as shown in Figures 5 and 6 of the accompanying drawings.

16. Any novel feature or combination of features disclosed herein.



Application No: GB 9512098.6
Claims searched: 1-15

Examiner: John Wilson
Date of search: 27 September 1995

**Patents Act 1977
Search Report under Section 17**

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.N): A4L[LBBB LBLD LBEP LBES LBEQ]
Int CI (Ed.6): B60N 2/48
Other: Online:- WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	EP0142822A2 Breitenbach - note the figs.	
X	US5370446 Bancod - whole document, note col.5 lines 33-39	1-4,7,11 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.