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(56) Documents Cited

**GB 0691752 A EP 0589188 A EP 0492281 A**

(58) Field of Search

**UK CL (Edition P ) A4L LAAB LAAR LAAT LBDA LBDC**

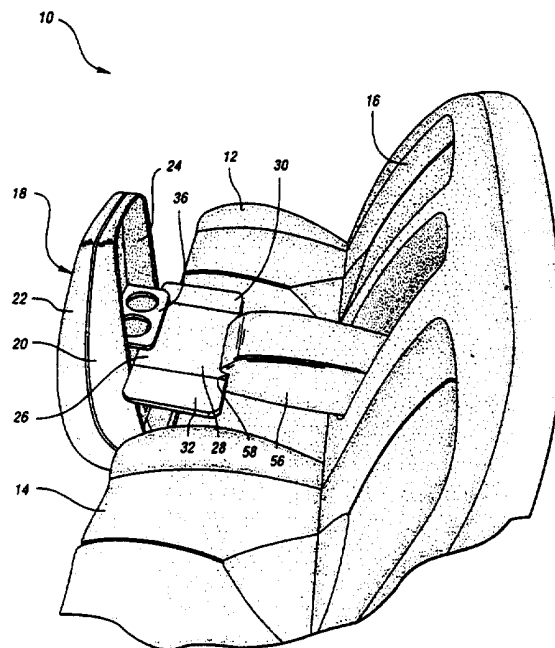
**INT CL<sup>6</sup> B60N 2/32 2/44 3/00 3/10 , B60R 7/04**

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(54) Abstract Title

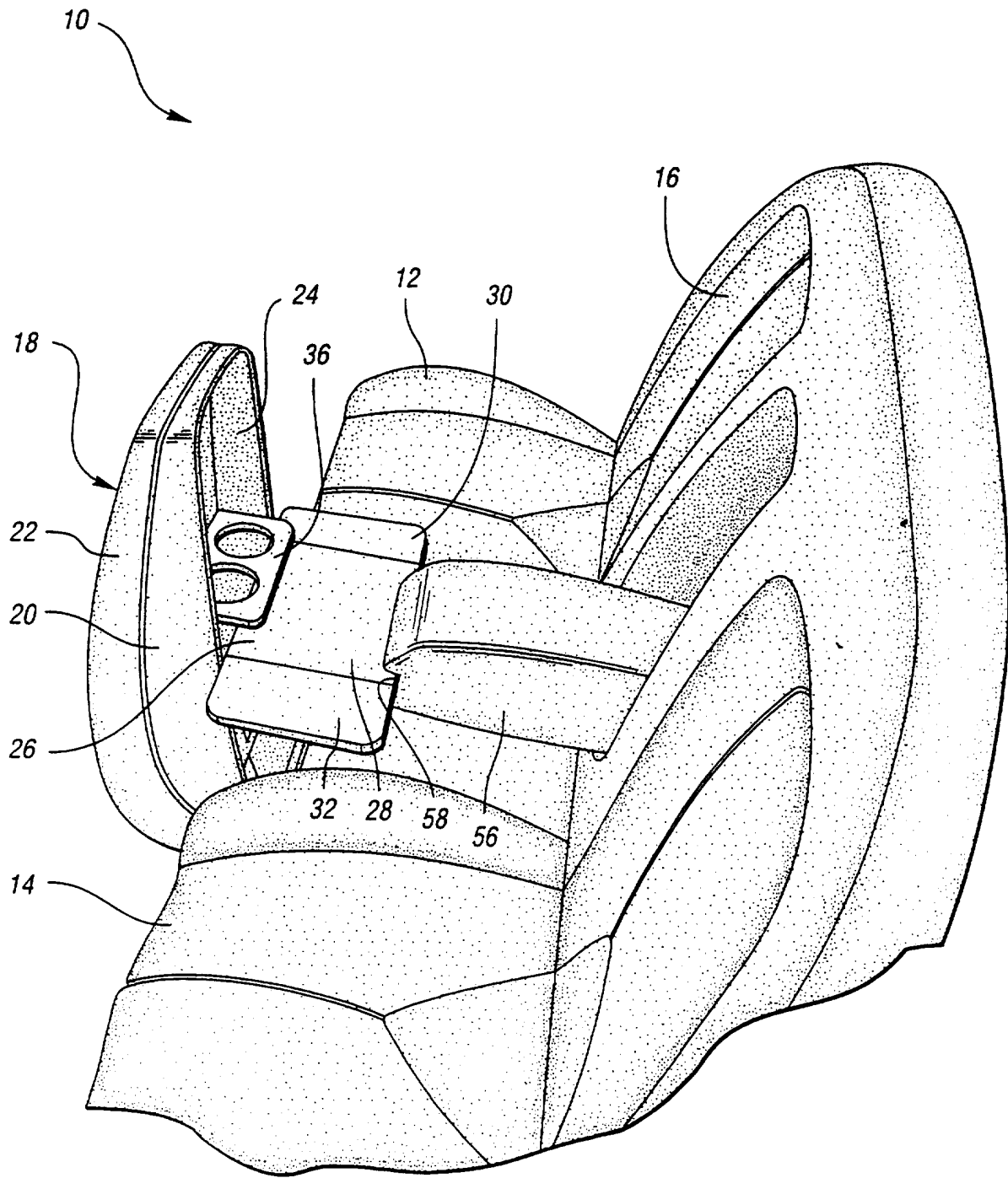
**Pivotable vehicle seat with utility compartment**

(57) A vehicle rear seat assembly 10, comprising a central seat portion 18 pivotally connected to the seat portions on either side 12, 14, has a seat cushion 22 on one side and a utility compartment 24 on the opposite side. The central seat portion is pivotable between a collapsed position for seating and an upright position for access to the utility compartment, which may include a pivotal tray 26 extendable from the utility compartment and a pivotable cupholder 36, light and mobile phone holder. An armrest 56 may be folded down from the seat back 16 to cooperate with the tray, providing extra stability.

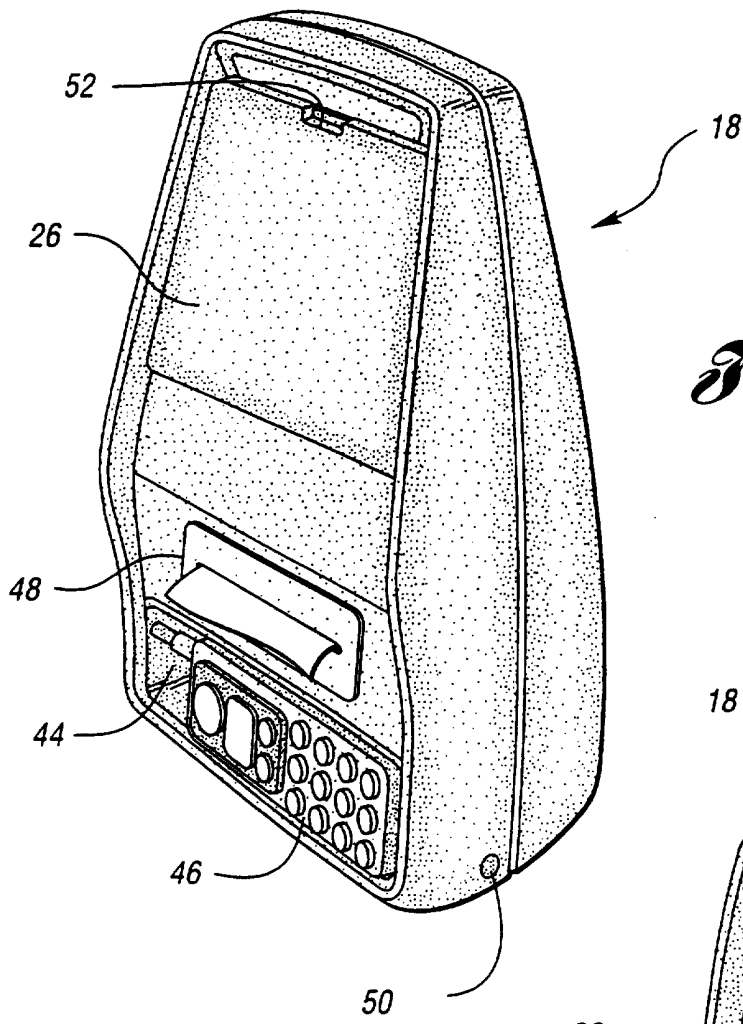


*Fig. 1*

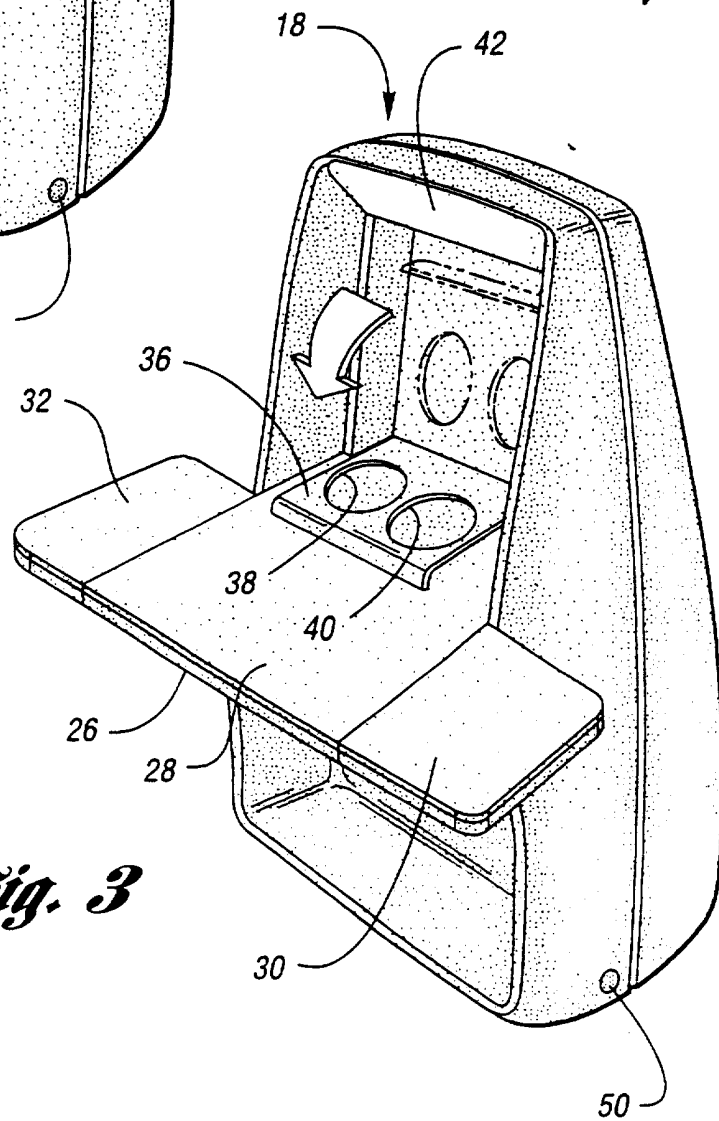
**GB 2 326 589 A**



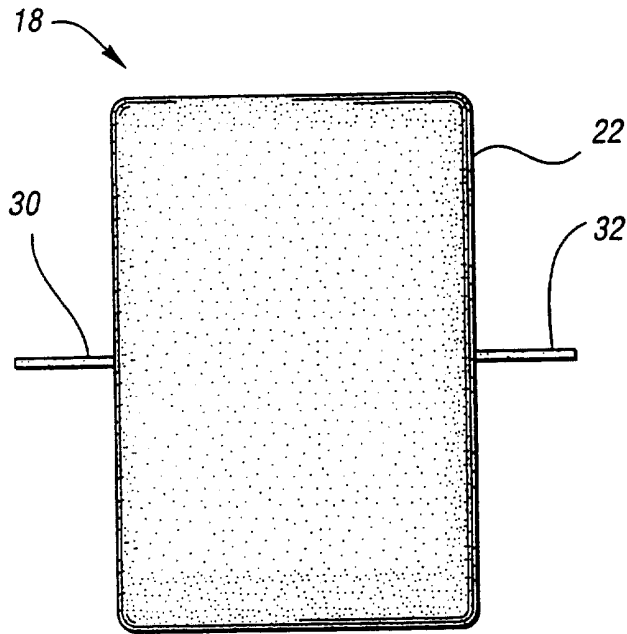
*Fig. 1*



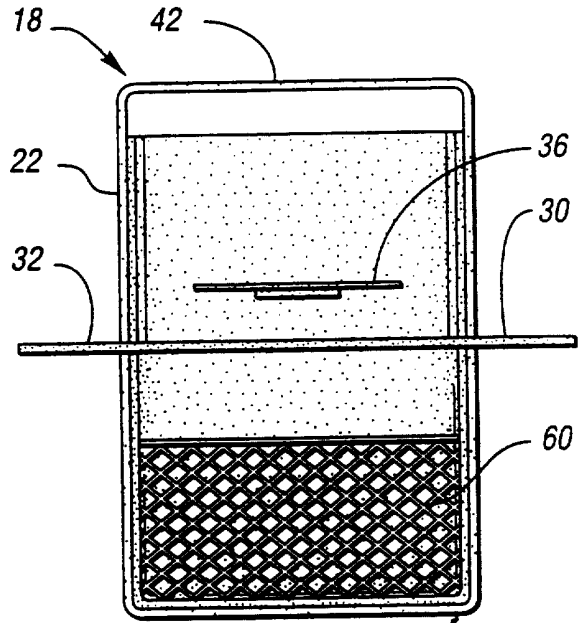
*Fig. 2*



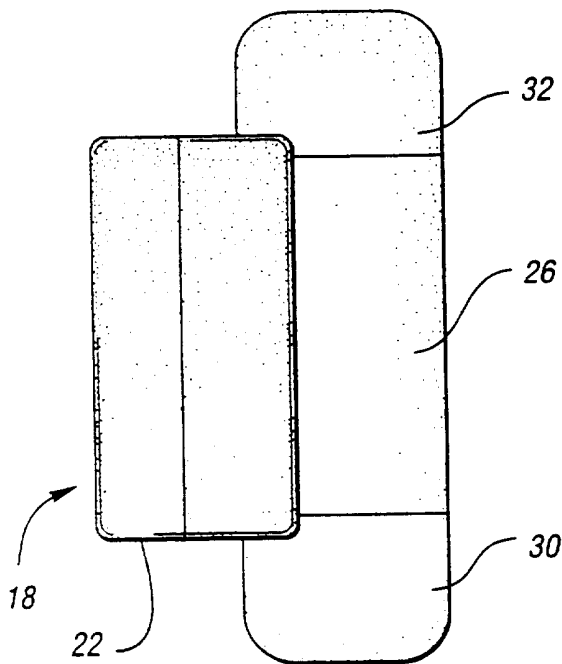
*Fig. 3*



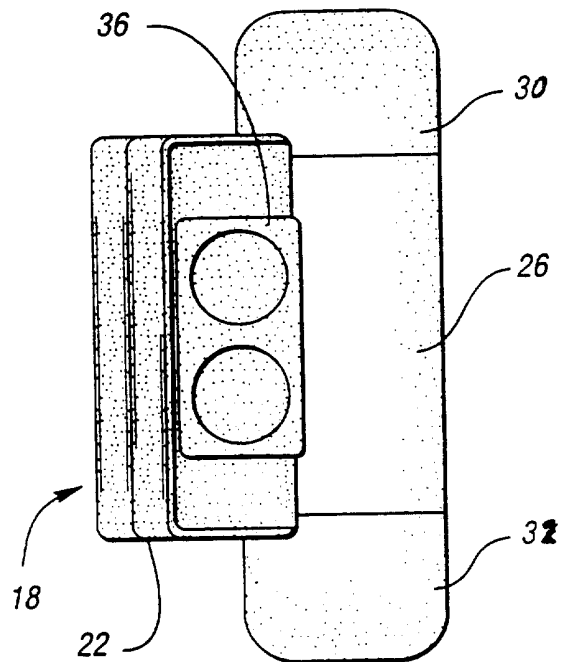
*Fig. 4*



*Fig. 5*

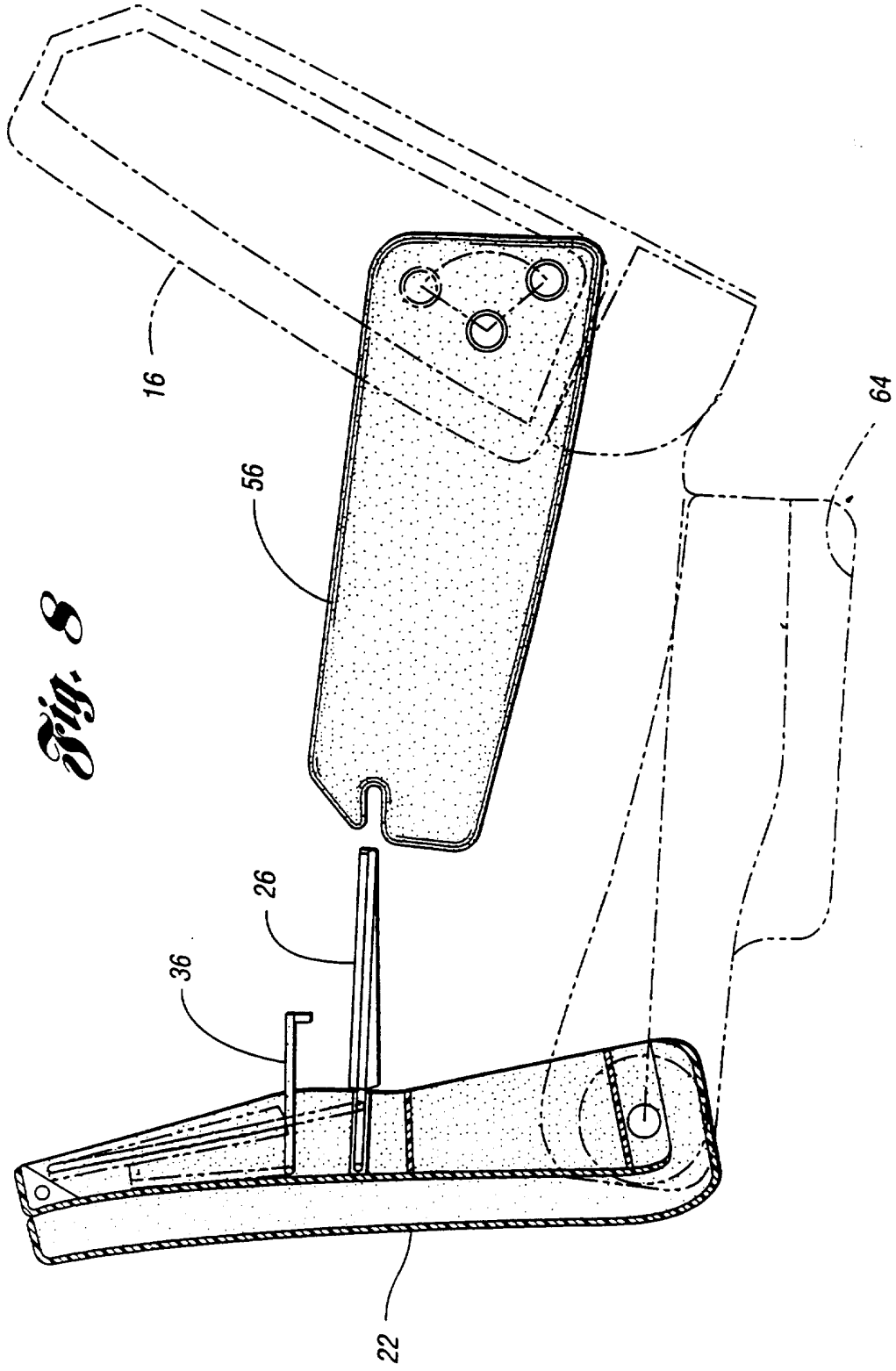


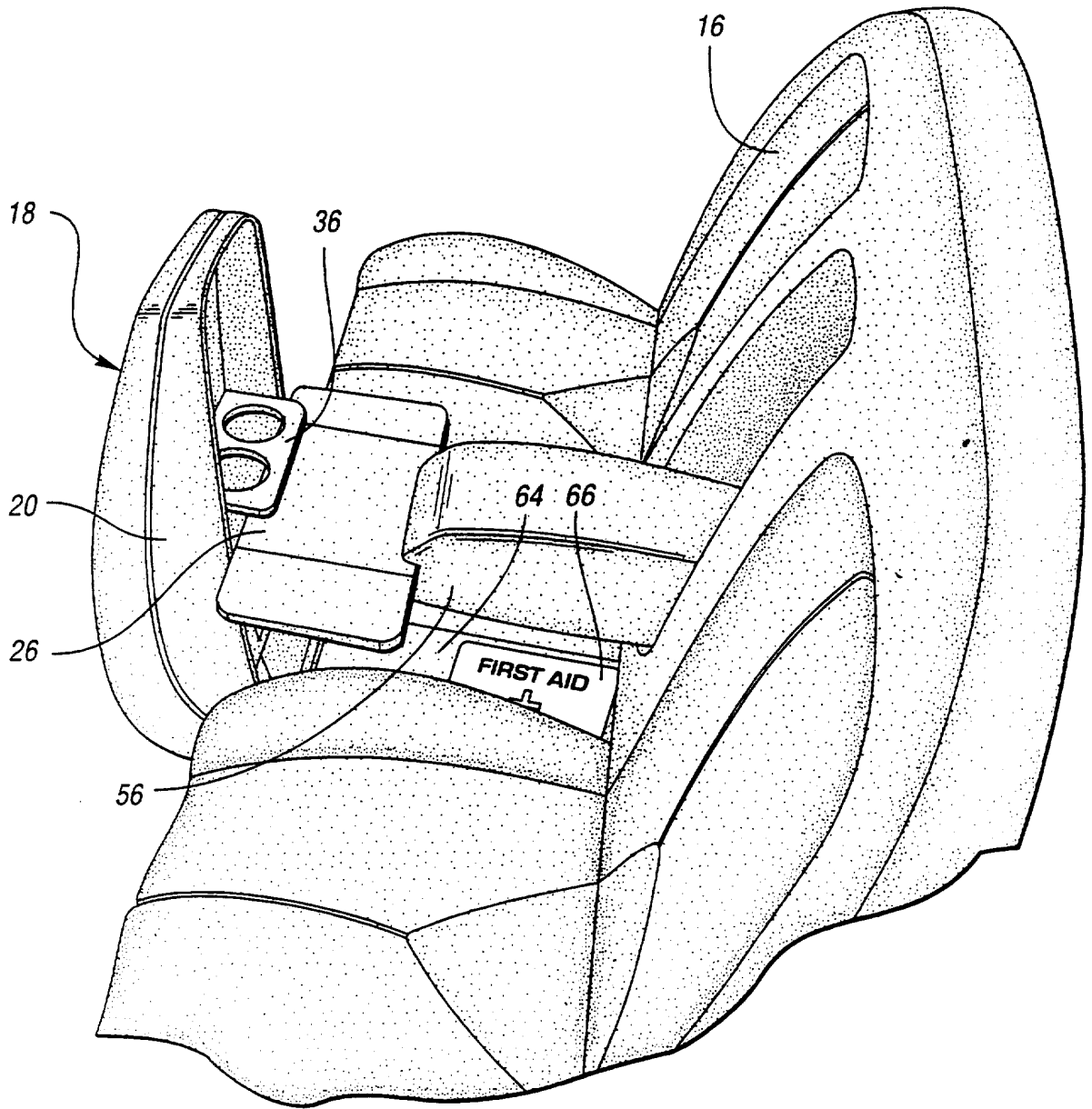
*Fig. 6*



*Fig. 7*

*Fig. 8*





*Fig. 9*

## PIVOTABLE REAR SEAT CENTER CUSHION ASSEMBLY WITH UTILITY COMPARTMENT

### Technical Field

5 The present invention relates to a vehicle rear seat assembly, and more particularly to a vehicle rear seat assembly with a center cushion which is pivotally mounted to the seat and includes a utility compartment therein.

### Background Of The Invention

10 Vehicle interior passenger compartments often include collapsible cupholders and other convenience features for use by the front seat occupants. Often, vehicle cupholders are stored within the instrument panel or front console, and may be pulled out for use by  
15 the front passenger compartment occupants. Also, the glove box door is sometimes used as a support tray by front seat occupants.

20 However, rear seat occupants are typically not provided with the same privileges. Rear seat occupants are rarely provided with cupholders, nor support trays for supporting various items such as reading material, laptop computers, beverages, etc.

25 Accordingly, it is desirable to provide a vehicle rear compartment design which provides utility features, such as cupholders and a support tray, to the rear seat occupants, without creating a packaging prob-

lem, and without reducing normally useable rear seating space or rear occupant compartment space.

### **Disclosure Of The Invention**

The embodiments of the present invention seek to overcome the above-referenced shortcomings of typical vehicle interior rear passenger compartment designs by providing a vehicle rear seat center cushion assembly which is pivotable to a vertical position for exposing a utility compartment, which includes a cupholder and utility tray.

More specifically, the embodiments provide a vehicle rear seat assembly including left and right seat portions, and a center seat portion positioned between the left and right seat portions, and pivotally connected with respect to the left and right seat portions. The center seat portion has a seat cushion on one side and a utility compartment on an opposing side thereof, and the center seat portion is pivotable between a collapsed position for seating and an upright position for facilitating access to the utility compartment.

Preferably, the utility compartment includes a pivotable tray mounted therein for pivotal movement to a position extended from the utility compartment for providing a user surface when the center seat portion is in the upright position. The pivotable tray also preferably includes slidable side leaves connected thereto for expanding the user surface by laterally sliding the leaves with respect to the tray. The utility compartment also includes a pivotable cupholder, a reading light, and a mobile phone storage compartment.



Alternatively, an armrest may be pivotally connected to the seat back and include a slot formed therein for cooperation with the pivotable tray for supporting the tray in the extended position.

5                   Accordingly, an object of the present invention is to provide collapsible vehicle rear seat assembly which includes a utility compartment, and may have a cupholder and a support tray disposed therein; and/or

10                   To provide a vehicle rear seat cupholder and utility tray with are normally hidden beneath a pivotable rear seat center cushion assembly; and/or improvements generally

15                   According to the invention there is provided a vehicle rear seat assembly as defined in claim 1 of the accompanying claims. Other aspects of the invention are set forth in the claims following claim 1.

### **Brief Description Of The Drawings**

20                   FIGURE 1 shows a perspective view of a vehicle rear seat assembly incorporating a center seat portion with a utility compartment therein in accordance with the present invention;

25                   FIGURE 2 shows a perspective view of an upright center seat portion with the utility tray in the closed position in accordance with the present invention;

FIGURE 3 shows a perspective view of an alternative center seat portion with the utility tray in the extended position in accordance with the present invention;

5           FIGURE 4 shows a front view of the center seat portion of Figure 3;

FIGURE 5 shows a rear view of the center seat portion of Figure 3, with a storage net secured over the storage compartment;

10           FIGURE 6 shows an underside view of the center seat portion of Figure 3;

FIGURE 7 shows a plan view of the center seat portion of Figure 3;

15           FIGURE 8 shows a schematically arranged side view of a rear seat assembly incorporating a center seat portion in accordance with an alternative embodiment of the present invention; and

20           FIGURE 9 shows a perspective view of a vehicle rear seat assembly incorporating a center seat portion in accordance with the embodiment shown in Figure 8.

### **Detailed Description of the Preferred Embodiments**

Referring to Figure 1, a vehicle rear seat assembly 10 is shown in accordance with the present invention. As shown, the vehicle rear seat assembly 10 includes left and right seat portions 12,14, and a seat back 16.

25

The rear seat assembly 10 further includes a center seat portion 18, which includes a center seat portion base 20 with a seat cushion 22 on one side thereof, and a utility compartment 24 on the opposing side of the base 20. The center seat portion 18 is pivotally mounted between the left and right seat portions 12,14 for pivotal movement between a collapsed position in which only the seat cushion 22 is exposed to facilitate seating thereon, and an upright position for facilitating access to the utility compartment 24, as shown in Figure 1.

As shown in Figures 1 and 3, when the center seat portion 18 is in the upright position, a pivotable tray 26 may be pivoted to an extended position for providing a user surface 28 for rear seat occupants. The user surface 28 may be used for supporting beverages, reading or writing material, a laptop computer, etc. In order to expand the user surface 28, the pivotable tray 26 is further provided with slidable side leaves 30,32 connected to the tray 26 for expanding the user surface 28 by sliding laterally with respect to the tray 26.

Referring to Figures 1 and 3, the utility compartment 24 further includes a cupholder 36 which is pivotally connected within the utility compartment 24 for movement between a stored position, shown in phantom in Figure 3, and a use position, in which the cupholder 36 is suspended above, or rests against, the user surface 28 of the pivotable tray 26. The cupholder 36 includes cupholder apertures 38,40 for supporting cups therein.

As shown in Figure 3, the center seat portion 18 also includes a reading light 42 therein for lighting the user surface 28 and surrounding area.

5 Alternatively, as shown in Figure 2, the utility compartment may comprise a mobile phone storage compartment 44 for storing a mobile phone 46, as well as a tissue holder 48 for dispensing tissue.

10 The pivotal connection between the center seat portion 18 and the seat assembly may be accomplished in a variety of ways. For example, a pivot joint 50 is shown for making such pivotal connection.

As further shown in Figure 2, the pivotable seat tray 26 may be snapped to a closed position, and may be reopened by means of the notch 52 formed therein.

15 In a preferred embodiment, as shown in Figure 1, the seat back 16 is provided with an arm rest portion 56 pivotally connected with respect to the seat back 16, and including a slot 58 formed therein for cooperation with the pivotable tray 26 for supporting the tray in the extended position to support excessive weight when  
20 necessary.

Figures 4-6 illustrate front, rear, bottom, and plan views of the center seat portion shown in Figure 3.

25 Figure 5 is identical in all other respects to the embodiment shown in Figure 3, except that the storage net 60 has been added.

The center seat portion 18 preferably takes up approximately 20% of the lateral space of the seat assembly when in the closed position.

Turning to Figures 8 and 9, an alternative embodiment is illustrated. In this embodiment, an additional storage space 64 is provided for storage of items, such as a first aid kit 66 beneath the center seat portion 18. The storage compartment 64 makes use of normally unused space beneath the center of the seat. The embodiment illustrated in Figures 8 and 9 is in all other respects similar to the embodiment shown in Figure 1, except for the storage compartment 64.

This invention provides the capability of storing the cupholder and tray assembly, as well as other utility compartment components, inside the seat assembly, which is normally an unused space. Also, with the center seat portion 18 in the closed position, the utility compartment and its contents do not provide any aesthetic problems within the vehicle interior, as such components are completely hidden.

While the best modes for carrying out the invention have been described in detail, those familiar with the art to which this invention relates will recognize various alternative designs and embodiments for practicing the invention within the scope of the appended claims.

**What Is Claimed Is:**

1. A vehicle rear seat assembly, comprising:  
left and right seat portions; and  
a center seat portion positioned between said  
5 left and right seat portions and pivotally connected  
with respect to said left and right seat portions,  
wherein said center seat portion has a seat cushion on  
one side and a utility compartment on an opposing side  
thereof, and wherein said center seat portion is pivot-  
10 able between a collapsed position for seating and an  
upright position for facilitating access to the utility  
compartment.
  
2. The vehicle rear seat assembly of claim  
1, wherein said utility compartment comprises a pivot-  
15 able tray mounted therein for pivotal movement to a  
position extended from the utility compartment for  
providing a user surface when the center seat portion is  
in the upright position.
  
3. The vehicle rear seat assembly of claim  
20 2, wherein said pivotable tray further includes slidable  
side leaves connected thereto for expanding the user  
surface by sliding laterally with respect to the pivot-  
able tray.
  
4. The vehicle rear seat assembly of claim  
25 2, further comprising a pivotable cupholder which is  
pivotally connected within the utility compartment for  
movement between a stored position and a use position in  
which the cupholder is disposed in a horizontal position  
for use.

5. The vehicle rear seat assembly of claim 1, further comprising a reading light positioned within the utility compartment.

6. The vehicle rear seat assembly of claim 1, wherein said utility compartment further comprises a mobile phone storage compartment.

7. The vehicle rear seat assembly of claim 2, further comprising:

a seat back positioned adjacent the left, right and center seat portions; and

an armrest pivotally connected with respect to the seat back and including a slot formed therein for cooperation with the tray for supporting the tray in the extended position.

8. A vehicle center seat portion adapted for attachment between left and right rear seat portions, the center seat portion comprising:

a center seat portion base having a pivot joint to facilitate pivotal connection with respect to the left and rear seat portions;

a seat cushion positioned on one side of the base; and

a utility compartment positioned on the opposing side of the base;

wherein said center seat portion is adapted for pivotal movement between a collapsed position for seating on the cushion and an upright position for facilitating access to the utility compartment.

9. The vehicle rear seat assembly of claim 8, wherein said utility compartment comprises a pivot-

able tray mounted therein for pivotal movement to a position extended from the utility compartment for providing a user surface when the center seat portion is in the upright position.

5                   10. The vehicle rear seat assembly of claim 9, wherein said pivotable tray further includes slidable side leaves connected thereto for expanding the user surface by sliding laterally with respect to the pivotable tray.

10                   11. The vehicle rear seat assembly of claim 9, further comprising a pivotable cupholder which is pivotally connected within the utility compartment for movement between a stored position and a use position in which the cupholder rests against the user surface of  
15 the pivotable tray.

12. The vehicle rear seat assembly of claim 8, further comprising a reading light positioned within the utility compartment.

20                   13. The vehicle rear seat assembly of claim 8, wherein said utility compartment further comprises a mobile phone storage compartment.

25                   14. A vehicle rear seat assembly, comprising:  
left and right seat portions;  
a center seat portion positioned between said  
left and right seat portions and pivotally connected  
with respect to said left and right seat portions,  
wherein said center seat portion has a seat cushion on one side and a utility compartment on an opposing side thereof, and said center seat portion is pivotable



between a collapsed position for seating and an upright position for facilitating access to the utility compartment; and

5 wherein said utility compartment comprises a pivotable tray mounted therein for pivotal movement to a position extended from the utility compartment for providing a user surface when the center seat portion is in the upright position.

10 15. The vehicle rear seat assembly of claim 14, wherein said pivotable tray further includes slidable side leaves connected thereto for expanding the user surface by sliding laterally with respect to the pivotable tray.

15 16. The vehicle rear seat assembly of claim 14, further comprising a pivotable cupholder which is pivotally connected within the utility compartment for movement between a stored position and a use position in which the cupholder rests against the user surface of the pivotable tray.

20 17. The vehicle rear seat assembly of claim 14, further comprising a reading light positioned within the utility compartment.

25 18. The vehicle rear seat assembly of claim 14, wherein said utility compartment further comprises a mobile phone storage compartment.

19. The vehicle rear seat assembly of claim 14, further comprising:

a seat back positioned adjacent the left, right and center seat portions; and

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an armrest pivotally connected with respect to the seat back and including a slot formed therein for cooperation with the tray for supporting the tray in the extended position.

20. A vehicle rear seat assembly constructed and arranged substantially as described herein and as shown in the drawings relating to a particular one of the embodiments described and illustrated herein.



Application No: GB 9813708.6  
Claims searched: 1-20

Examiner: Emma Leland  
Date of search: 22 October 1998

**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.P): A4L (LAAB LAAR LAAT LBDA LBDC)

Int CI (Ed.6): B60N (2/32 2/44 3/00 3/10) ; B60R (7/04)

Other: Online : WPI

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
A	GB 691752 Heryet - fig. 1	1
A	EP 0589188 Nyncke - figs. 1&2	1
A	EP 0492281 Zäh - figs. 1-3	1

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

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P Document published on or after the declared priority date but before the filing date of this invention.

E Patent document published on or after, but with priority date earlier than, the filing date of this application.