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(56) Documents Cited:  
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(58) Field of Search:  
INT CL B60K, B60N, B60R  
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(54) Title of the Invention: **Improvements in or relating to vehicle centre consoles**  
Abstract Title: **REVERSIBLE PAD WITH LUXURY AND UTILITY SIDES FOR A VEHICLE CONSOLE**

(57) A reversible pad 10 is provided for use on a vehicle centre console. The pad comprises a first side 12 provided with a utility surface, a second side 14 provided with a luxury surface, and wherein the pad is configured to engage with a centre console 30 with either the first side or the second side uppermost. The utility surface may be made of waterproof, absorbent, adherent, gripping, scratch resistance, durable or hard wearing fabric while the luxury surface may be made of leather, suede, desirable plastic, cloth or a soft fabric surface. Additionally one side may be provided with magnets to engage with the centre console. Furthermore the pad may comprise a hinge mechanism (40 see fig 3) that enables the pad to switch positions. Finally the hinge mechanism comprises at least one arm 44 to interface with the pad and at least one arm to interface with the centre console. Additionally the centre console of the vehicle may feature telescopic legs (50 see fig 4) that engage with the reversible pad. The console may also comprise a plurality of hinged fins (11 see fig 7B) configured to fold out to protect the adjacent seat or secure a load.

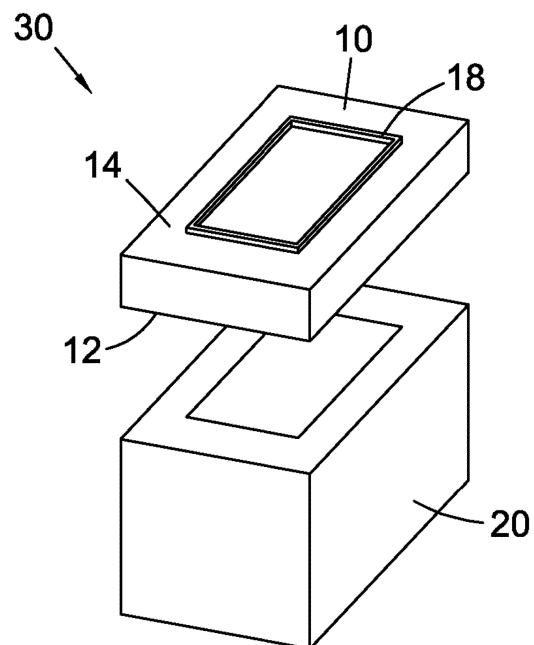


Fig. 2

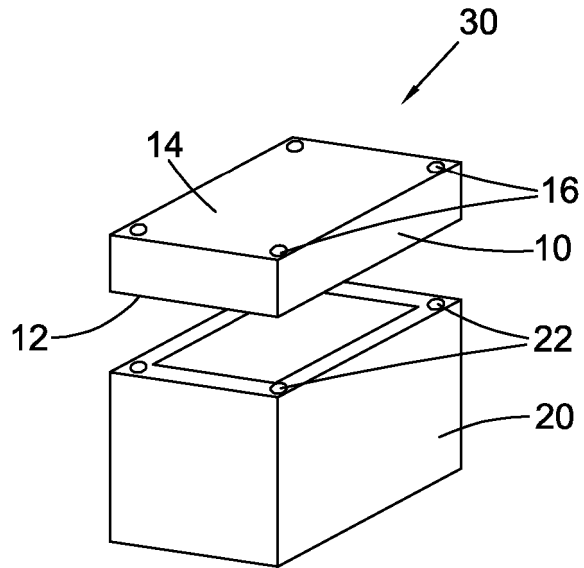


Fig. 1

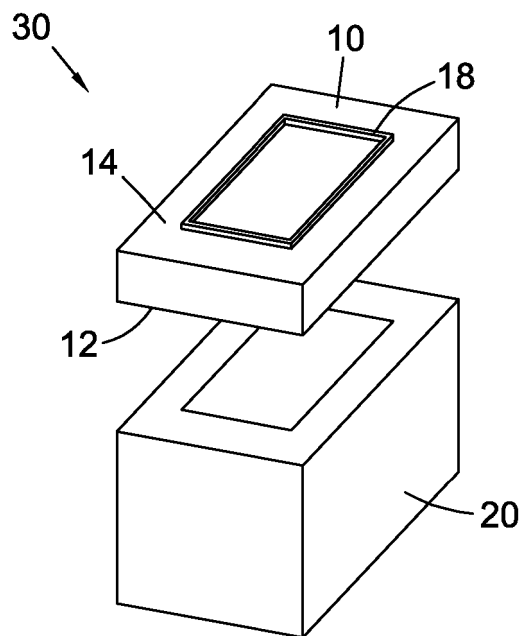


Fig. 2

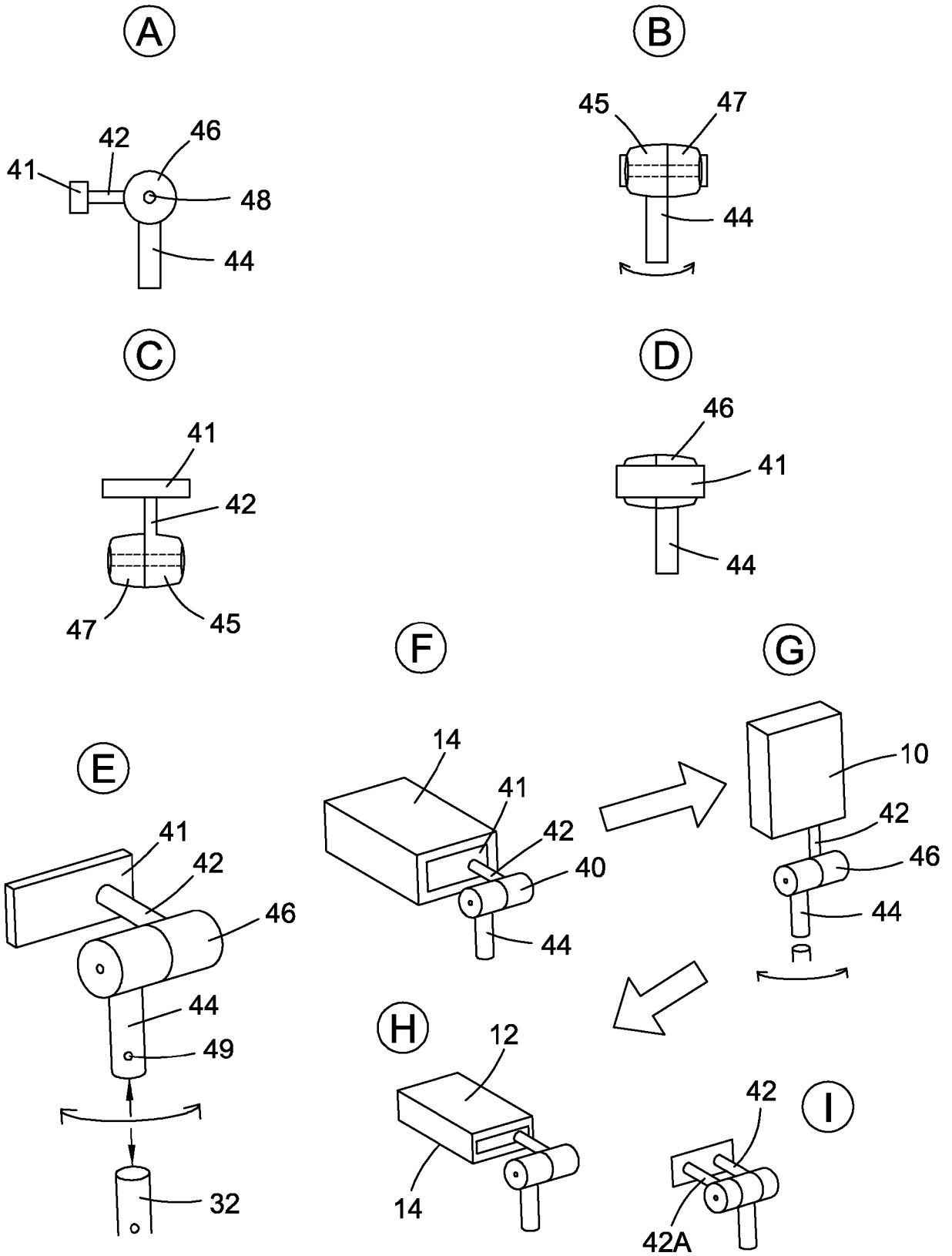


Fig. 3

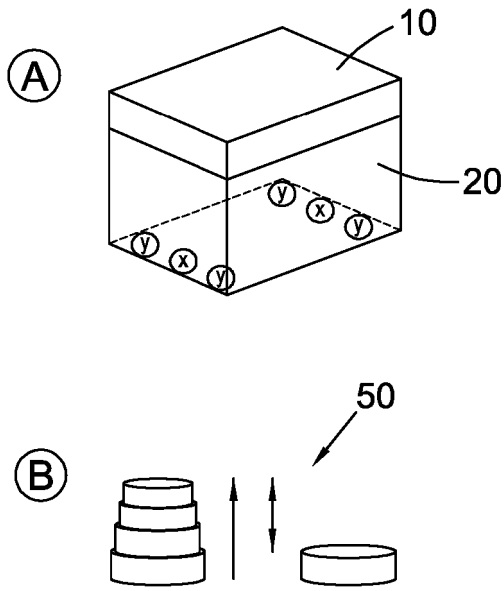


Fig. 4

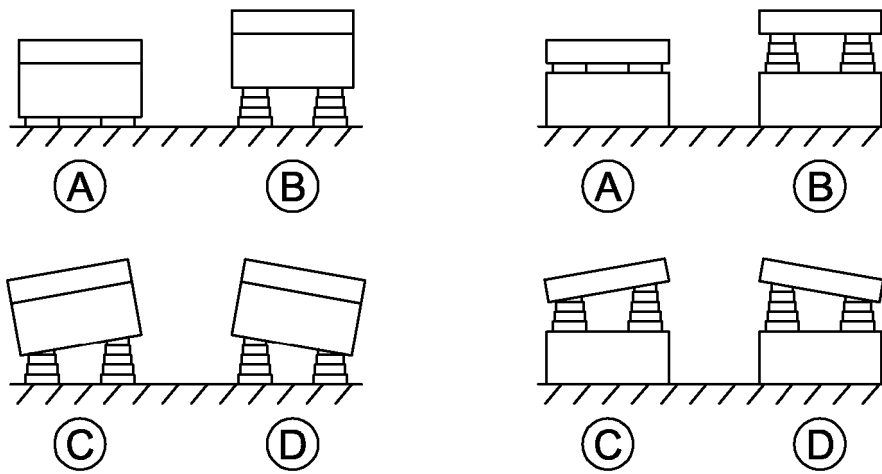


Fig. 5

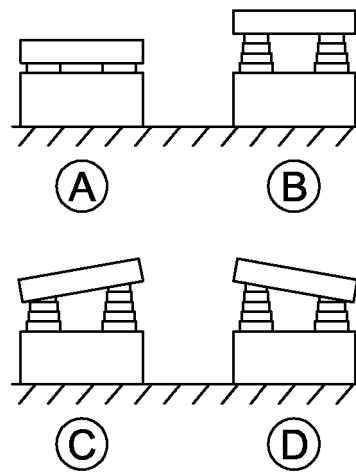


Fig. 6

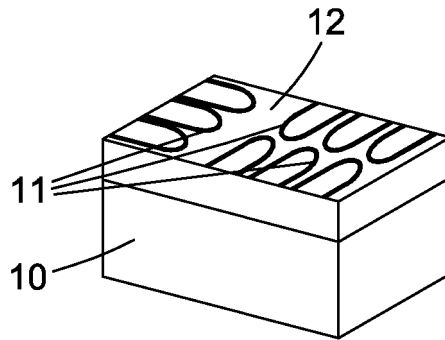


Fig. 7A

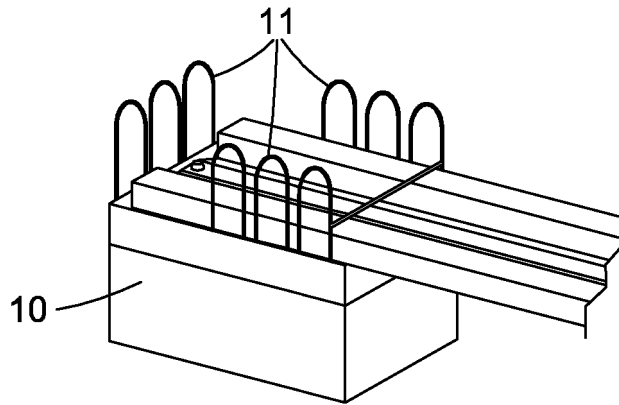


Fig. 7B

## IMPROVEMENTS IN OR RELATING TO VEHICLE CENTRE CONSOLES

This invention relates to improvements in or relating to vehicle centre consoles and, in particular, to improvements relevant to vehicles used for carrying cargo.

5

Most vehicles are provided with a centre console which is frequently provided with some storage, typically with a hinged lid to access the contents.

When smaller vehicles are used for carrying cargo it is not unusual for long pieces of cargo to protrude through the centre of the vehicle between the driver and passenger's seats. These pieces of cargo are typically then rested on the centre console.

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If the cargo is wet or dirty and especially if the cargo is also insecure, it can damage the interior of the vehicle, including the centre console and seat sides as the vehicle accelerates and brakes. In order to avoid damage, it is known to spread a tarpaulin or similar cover over the areas in contact with the cargo. However, it can be difficult to draw the covers through between the seats to protect the cargo and seats without the cover interfering with the gear lever and hand brake.

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It is against this background that the present invention has arisen.

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According to the present invention there is provided a reversible pad for a vehicle centre console, the pad comprising a first side provided with a utility surface, a second side provided with a luxury surface, and wherein the pad is configured to engage with a centre console with either the first side or the second side uppermost.

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By providing a single pad that has a utility surface and a luxury surface, the pad can be reversed and put back in the same place providing a centre console that has the same configuration and functionality in all regards except the finish on the top surface, provided by the pad. This provides a notable advantage over systems which provide a removable luxury pad to be placed over the top of the existing centre console. Such a double layering can cause difficulties with accessibility to centre console storage and also the removable pad has to be placed somewhere else when not in use making it more likely to be lost or dirtied. The present invention addresses both of these problems.

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The utility surface may include a waterproof fabric, an absorbent material, an adherent or

gripping material, a scratch resistant surface, a durable or hard wearing fabric or a surface combining more than one of these characteristics. The utility surface may be a uniform surface comprising one or more of the aforementioned surfaces or, alternatively, the surface may be divided into two or more areas, each area comprising a different material exhibiting a different characteristic or combination of characteristics.

The luxury surface may include a leather surface, a suede surface, a desirable plastic or cloth surface or a soft fabric surface.

10 The pad may engage with the centre console either via a lip provided on one or both sides or via one or more magnets.

The pad may further comprise a hinge mechanism that enables the pad to be transitioned between a configuration in which the first side is uppermost and a configuration in which the second side is uppermost. The hinge mechanism may comprise at least one arm to interface with the pad and at least one arm to interface with the centre console, a cross bar linking the two arms and an internal pin configured to enable the pad to be rotated by 180°. The arm to interface with the pad and the cross bar may be provided in a recessed position within the pad. The hinge mechanism may be provided with two substantially parallel arms to interface with the pad.

A pad may be incorporated into a centre console which may further comprise a storage box. The pad may provide a lid for the storage box.

25 Furthermore, according to the present invention there is provided a centre console for a vehicle, the centre console comprising a plurality of independently operable telescopic legs configured to provide continuous variation within a pre-defined range for the height of each part of the centre console. The telescopic legs can be configured to provide a tilted surface to enable the centre console to provide improved support for delicate or awkwardly shaped loads.

35 Furthermore, according to the present invention there is provided a centre console for a vehicle, the centre console comprising a plurality of hinged fins configured to fold out to protect adjacent seats. The fins may be further configured to secure a load placed thereon.

The invention will now be further and more particularly described, by way of example only, and with reference to the accompanying drawings, in which:

- 5 Figure 1 shows an example of a pad according to the present invention;  
Figure 2 shows a further example of a pad according to the present invention;  
Figures 3A-3I show details of one example of a hinge mechanism for use in the present invention;  
Figures 4A and 4B show an example of telescopic supports;  
10 Figures 5A to 5D show four configurations of one example of the telescopic supports; and  
Figures 6A to 6D show four configurations of a further example of the telescopic supports.

Figure 1 shows a pad 10 which is configured for use as a lid for a storage box 20 provided as a centre console 30. In this example, the pad 10 is substantially rectilinear and has a  
15 durable or utility surface 12 and a luxury surface 14. The utility 12 and luxury 14 surfaces are provided on opposing sides of the pad 10 so that the pad 10 can be removed from the centre console 30, flipped over and replaced with the other side facing upwards.

In order to retain the pad 10 in place on the storage box 20, there are provided a set of  
20 four magnets 16, one in the vicinity of each corner of the pad 10. The storage box 20 is also provided with four magnets 22 and these are positioned such that when the pad 10 is correctly aligned, the magnets will meet and the pad 10 will be retained in position.

The four magnets 16 provided in the pad 10 and the four magnets provided in the storage  
25 box 20 may be visible, as illustrated in Figure 1. Alternatively, they may be provided below the surface so that they are not visible.

Figure 2 also shows a pad 10 which is configured for use as a lid for a storage box 20 provided as a centre console. In this example, the pad 10 is provided with a lip 18 which  
30 is raised above the level of the surface of the pad. The storage box 20 is provided with an opening area 24 which is sized to mate with the lip 18 of the pad, thus securing the pad 10 in place on top of the storage box 20.

Figures 3A-3H show the various aspects of a hinge mechanism 40 that can be deployed  
35 in conjunction with either of the pads 10 illustrated in Figures 1 and 2. The hinge



mechanism includes an arm 42 which interfaces with the pad 10 and an arm 44 which interfaces with the centre console 30. Between these two arms 42, 44, there is provided a cross bar 46. The cross bar 46 houses an internal pin 48. The interface between arm 42 and the pad 10 is effected with a blanking plate 41.

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A side view of the hinge mechanism 40 is shown in Figure 3A which shows the hinge mechanism 40 in the configuration that is adopted when the pad 10 is in contact with the centre console 30. There is approximately a right angle between the arms 42, 44.

10 A front view of the hinge mechanism 40 is shown in Figure 3B. The cross bar 46 includes a fixed side 45 and a pivot side 47 with the routing of the internal pin 48 shown in dashed line.

An elevated view of the hinge mechanism 40 is shown in Figure 3C. This shows the fixed  
15 side 45 and pivot side 47 of the cross bar 46 together with the arm 42 for interfacing with the pad 10 together with the blanking plate 41.

A rear view of the hinge mechanism 40 is shown in Figure 3D. This shows the blanking  
20 plate 41 with the cross bar 46 extending away from it and the arm 44 for interfacing with the centre console extending below the blanking plate 41.

Figure 3E shows a part perspective view of the hinge mechanism 40. Figure 3E shows a  
spring ball valve 49 that is provided on the arm 44 for interfacing with the centre console  
30 in order to achieve that interface. The centre console 30 is provided with a receiver 32  
25 for the spring ball valve 49. The spring ball valve optimises the position of the pad 10 in its "home" or "resting" position. In an alternative embodiment, not separately illustrated, the spring ball valve and receiver may be omitted.

The series of images Figures 3F, 3G and 3H illustrate the movements undertaken by the  
30 operative to change the pad 10 from the luxury side 14 to the utility side 12. In Figure 3F the luxury side 14 is uppermost. In order to change the configuration so that the utility side 12 is uppermost, the pad 10 is first lifted into an upright position as illustrated in Figure 3G and the pad 10 is then rotated in the horizontal direction by 180°. The durable or utility side 12 is then uppermost and the pad 10 can be closed down onto the centre  
35 console again as shown in Figure 3H.

Figure 3I shows an alternative configuration in which further lateral stability is provided in the form of a second arm 42A to interface with the pad 10.

5 Although the examples shown in Figure 3 all have the entire hinge mechanism 40 exposed, in alternative embodiments, not illustrated, the arm 42 for interfacing with the pad 10 and the cross bar 46 could be recessed into the pad itself and therefore not visible to the user.

10 Figures 4A and 4B show the positions in which telescopic supports 50 can be provided, and the detail of an example of the support, respectively. Figure 4A shows a storage box 20 closed by a pad 10. The points marked X and Y illustrate the positions of the telescopic supports 50. If the points marked X are used this configuration has two telescopic supports 50, whereas if the points marked Y are used this configuration has  
15 four telescopic supports 50.

Figure 4B shows, schematically, a single simple telescopic support. This particular example has four telescopic hoops which fit concentrically when the support is at its lowest level. When the telescopic support is required to increase the height of the upper  
20 surface of the pad, one or more of the four telescopic hoops is drawn out to increase the overall height of the support. The telescopic support can be locked in place in any position between the lowest, when all four hoops are concentrically stowed, up to the maximum height when all four hoops are fully drawn apart. Although this example shows four hoops, more or fewer hoops can be used depending on the total maximum height  
25 required, the available space at minimum height and/or the required fidelity of the height intervals.

Figures 5A-5D and Figures 6A-6D show four different configurations achieved in each of two different examples of the fitting of the telescopic supports 50. In Figures 5A-5D, the  
30 supports are located below the storage box 20. In Figures 6A-6D, the supports are located between the storage box 20 and the pad 10.

Figures 5A and 6A show the respective centre consoles 30 with the supports 50 fully collapsed. This provides the lowest height of the pad 10 and occurs when all of the hoops  
35 in each telescopic support are concentrically stacked.

Figures 5B and 6B show the respective centre consoles 30 with the supports 50 fully extended so that the maximum height of the pad 10 is provided.

5 Figures 5C-5D and 6C-6D show different tilt configurations. In order to provide a tilted surface of the pad to support irregular shaped or delicate loads, two adjacent telescopic supports 50 are extended to a different height from the remaining two supports. The higher supports may be provided to one side, for example, the driver's side of the vehicle or, alternatively, the higher supports may be provided in fore/aft direction. This later  
10 configuration is especially convenient where there is a requirement to arrest a load that may move in transit.

Figures 7A and 7B show a pad 10 which is further provided with a series of fins 11 that are provided on the durable side 12. The fins 11 are hingeably attached to the pad and  
15 can be folded out when the durable side of the pad 10 is uppermost. The fins 11 are shown in their stowed position flush with the surface of the pad 10 in Figure 7A. Figure 7B shows the configuration of the fins when they have been deployed. Some of the fins 11 fold out to positions adjacent to the driver and passenger seats and these fins 11 protect the fabric of the seat from the load. The fins 11 at the front of the pad 10 can be  
20 used to secure a load to prevent its ingress too far forward, especially under braking when a load could move forward. Although Figures 7A and 7B show all of the fins in the same condition: either stowed or deployed, the fins in one embodiment can be individually deployed and therefore the use of some of the fins without others is also contemplated. In an alternative embodiment, the fins on each side can be provided on a single hinge  
25 such that all of the fins on that side move together.

In a further embodiment, not shown in the accompanying drawings, the functionality of the fins 11 can be provided by a plurality of guard rails which slide up from the storage box to protect the seat sides in a similar manner to the fins 11. However, there would be no  
30 requirement to provide hinges as the guard rails would slide up and lock in place. The guard rails can be moved independently of one another and can be locked at differing heights as required in order to protect the load to be carried. The guard rails can be locked in place using a twist to lock mechanism which would allow the guard rail to be locked at any height or, alternatively, the guard rail may be provided with a series of  
35 receivers for a spring ball valve so that the guard rail can be locked off in one of a plurality

of discrete positions.

It will further be appreciated by those skilled in the art that although the invention has been described by way of example with reference to several embodiments it is not limited  
5 to the disclosed embodiments and that alternative embodiments could be constructed without departing from the scope of the invention as defined in the appended claims.

**CLAIMS**

- 5 1. A reversible pad for a vehicle centre console, the pad comprising  
a first side provided with a utility surface,  
a second side provided with a luxury surface, and  
wherein the pad is configured to engage with a centre console with either the first side or  
the second side uppermost.
- 10 2. The reversible pad according to claim 1, wherein the utility surface includes at  
least one of a waterproof fabric, an absorbent material, an adherent or gripping material, a  
scratch resistant surface, a durable or hard wearing fabric.
- 15 3. The reversible pad according to claim 1 or claim 2, wherein the luxury surface  
includes at least one of a leather surface, a suede surface, a desirable plastic or cloth  
surface or a soft fabric surface.
4. The reversible pad according to any one of claims 1 to 3, wherein at least one side  
20 is provided with a lip to engage with the centre console.
5. The reversible pad according to any one of claims 1 to 3, wherein at least one side  
is provided with one or more magnets to engage with the centre console.
- 25 6. The reversible pad according to any one of claims 1 to 5, further comprising a  
hinge mechanism that enables the pad to be transitioned between the first side being  
uppermost and the second side being uppermost.
7. The reversible pad according to claim 6, wherein the hinge mechanism comprises  
30 at least one arm to interface with the pad and at least one arm to interface with the centre  
console, and a cross bar linking the two arms and an internal pin configured to enable the  
pad to be rotated by 180°.
8. The reversible pad according to claim 7, wherein the arm to interface with the pad  
35 and the cross bar are provided in a recessed position within the pad.

9. The reversible pad according to any one of claims 7 to 9, wherein the hinge mechanism is provided with two substantially parallel arms to interface with the pad.

5 10. A centre console for a vehicle, the centre console comprising a pad according to any one of the preceding claims.

11. The centre console according to claim 10, further comprising a storage box and wherein the pad provides a lid for the storage box.

10 12. A centre console for a vehicle, the centre console comprising a plurality of independently operable telescopic legs configured to provide continuous variation within a pre-defined range for the height of each part of the centre console.

15 13. A centre console for a vehicle, the centre console comprising a plurality of hinged fins configured to fold out to protect adjacent seats.

14. The centre console according to claim 13, wherein the fins are further configured to secure a load placed thereon.



**Application No:** GB1517521.9

**Examiner:** Mr Robin Jones

**Claims searched:** 1-11

**Date of search:** 4 April 2016

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

**Documents considered to be relevant:**

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	-	DE 102010048643 A1 (DAIMLER AG) - See abstract
A	-	FR2877617 A1 (CERA) - see abstract and figures
A	-	US5562331 A1 (PRINCE CORP) - See whole document
A	-	US6676209 B1 (BOLIN K M) - See whole document
A	-	US5690384 A1 (ROSSI N E) See whole document
A	-	US5403066 A1 (DRUM TT) - See whole document

**Categories:**

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.

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>X</sup> :

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Worldwide search of patent documents classified in the following areas of the IPC

B60N; B60R
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The following online and other databases have been used in the preparation of this search report

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**International Classification:**

<b>Subclass</b>	<b>Subgroup</b>	<b>Valid From</b>
B60R	0007/00	01/01/2006
B60R	0011/00	01/01/2006





**Application No:** GB1517521.9  
**Claims searched:** 12 & 13-14

**Examiner:** Mr Robin Jones  
**Date of search:** 9 June 2016

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

**Documents considered to be relevant:**

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	12	JP H092161 A (ARACO CORP) - See WPI abstract and figures 2 and 5
A	12	DE19611913 C1 (DAIMLER BENZ AG ) - See whole document, especially the lifting cylinder 8 of figure 3
A	12	FR2920719 A1 (RENAULT SAS) - See whole document
A	12	CN204020739 U (SHENZHEN SAINTWAY TECHNOLOGY) - See whole document, especially adjustable supporting rods 7, 3 and 6, 4
A	12	FR2961763 A1 (EUROSTYLE SYSTEMS) See figures 3-4
A	12	EP1852301 A2 (BAYERISCHE MOTOREN WERKE AG) See whole document and figures
A	13-14	FR2959185 A1 (PEUGEOT CITROEN AUTOMOBILES SA) See whole document especially projections 6
A	13-14	WO 2013/127323 A1 (VOLKSWAGEN AG) - See whole document

**Categories:**

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
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&	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.

**Field of Search:**



Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>X</sup> :

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Worldwide search of patent documents classified in the following areas of the IPC

B60K; B60N; B60R

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EPODOC, WPI

**International Classification:**

<b>Subclass</b>	<b>Subgroup</b>	<b>Valid From</b>
B60R	0007/00	01/01/2006
B60R	0011/00	01/01/2006