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(54) **AN APPARATUS FOR A VEHICLE LOADSPACE OF A VEHICLE**

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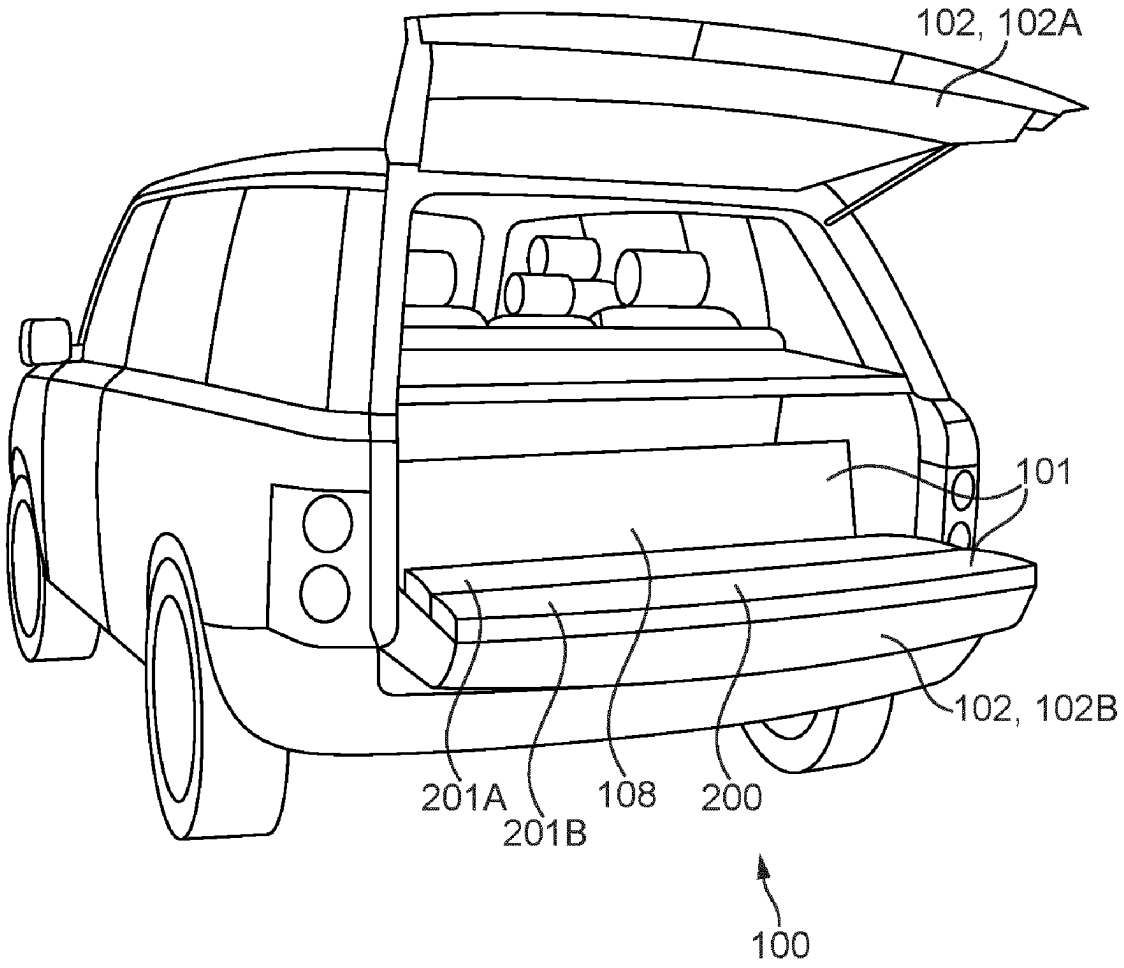
(57) **ABSTRACT**

An apparatus for a vehicle loadspace of a vehicle, comprising: a storage container (**603**); a panel (**108**) configured to pivot via a first hinge means (**300**) between a stowed orientation and a deployed orientation, wherein in the stowed orientation the panel (**108**) is above the storage container (**603**), and wherein the panel (**108**) is configured to pivot through an acute angle to move from the stowed orientation to the deployed orientation; a first cushion member (**200**), configured to attach to a vehicle loadspace attachment point (**350**) by a first coupling (**401**) and movable via the first coupling (**401**) between a stowed position in the storage container (**603**) and a deployed position outside the storage container (**603**), wherein the first coupling (**401**) is configured to locate the first cushion member (**200**) when the first cushion member (**200**) is in the deployed position outside the storage container (**603**).



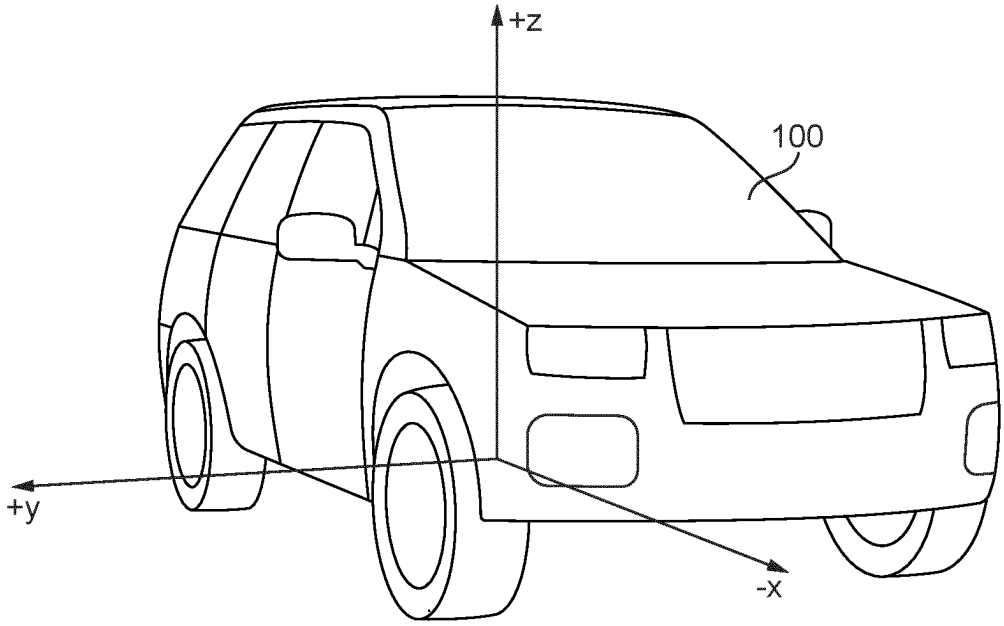


FIG. 1

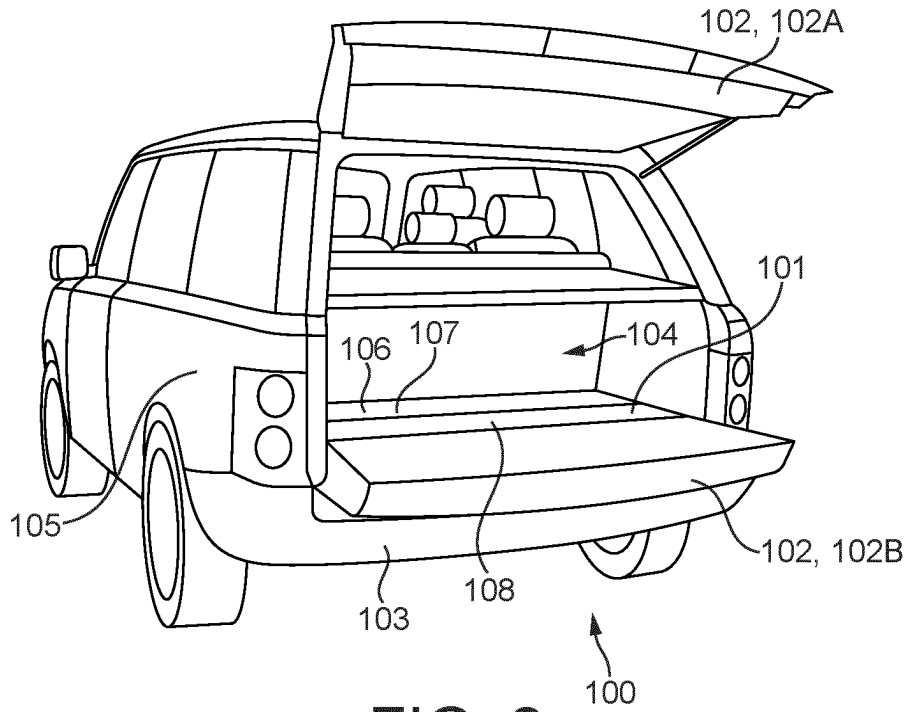


FIG. 2

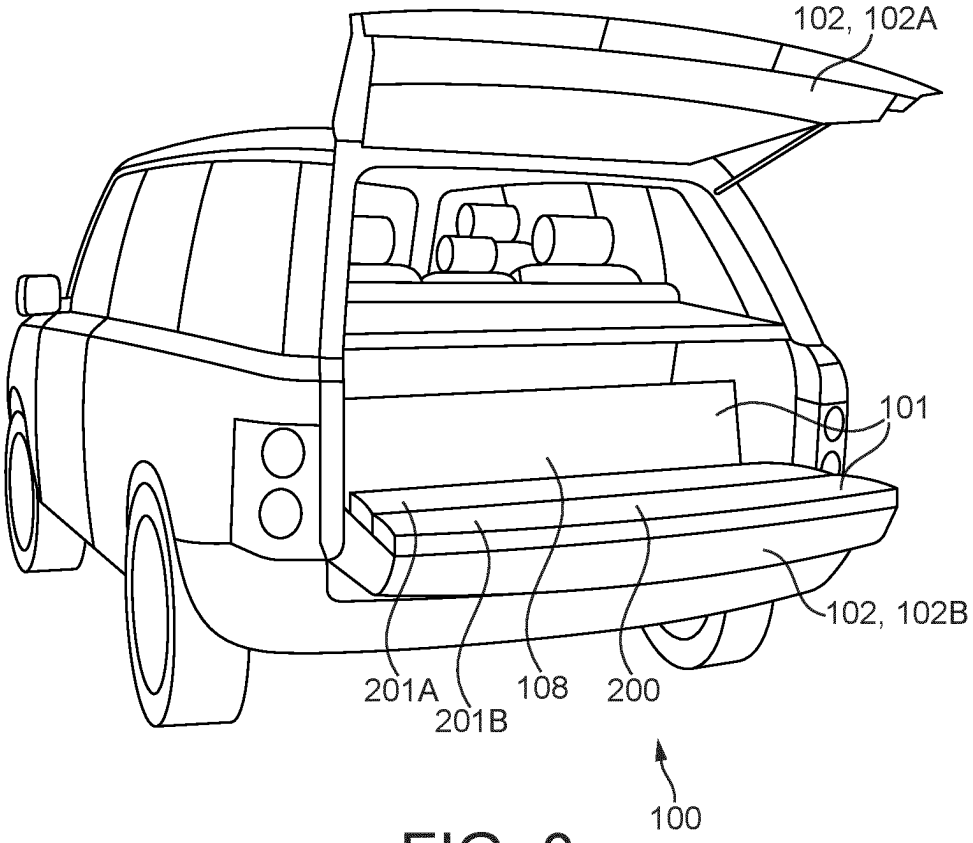


FIG. 3

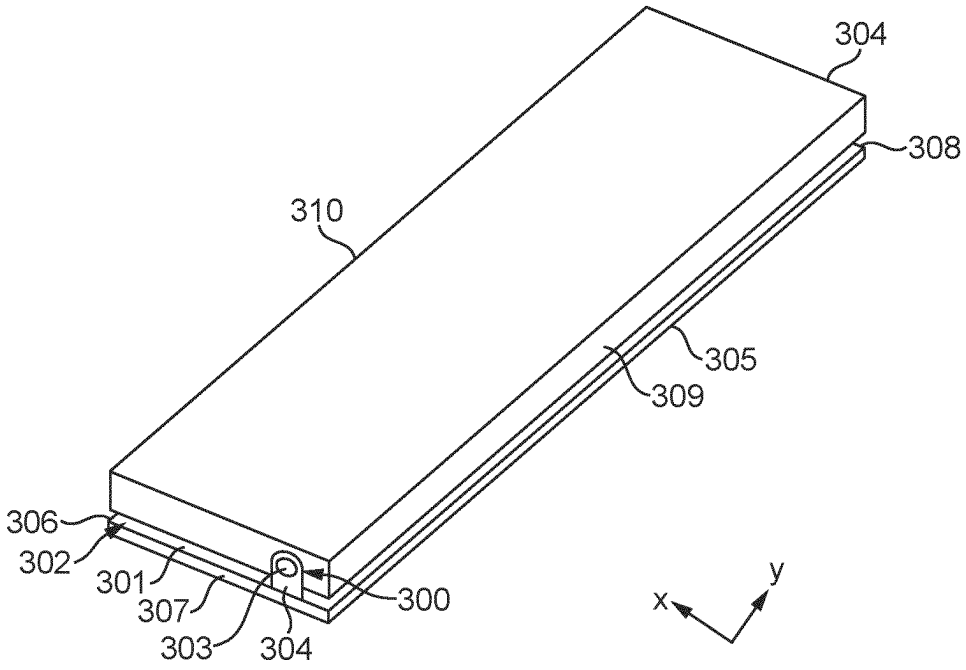


FIG. 4

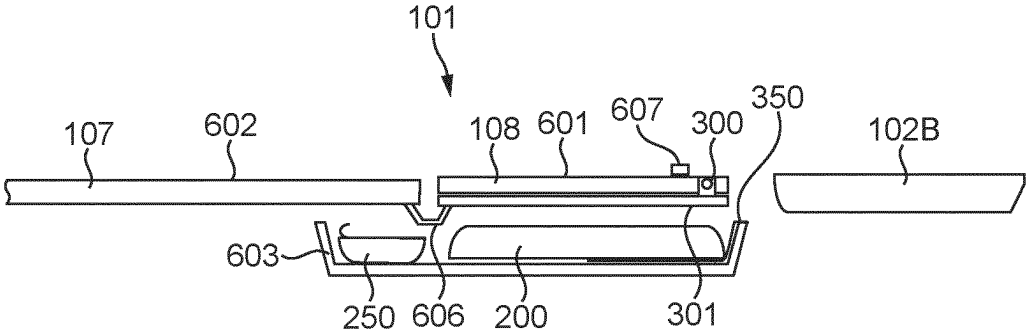

101
107
602
108
601
607
300
350
102B
603
250
606
200
301

FIG. 5A

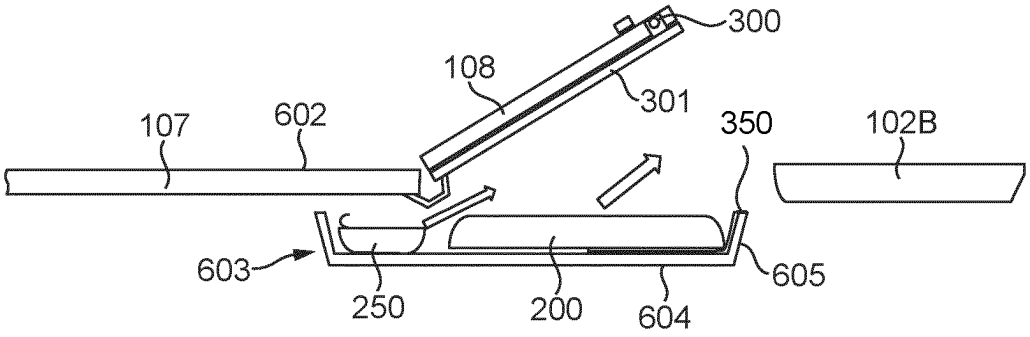

300
108
301
107
602
350
102B
603
250
200
604
605

FIG. 5B

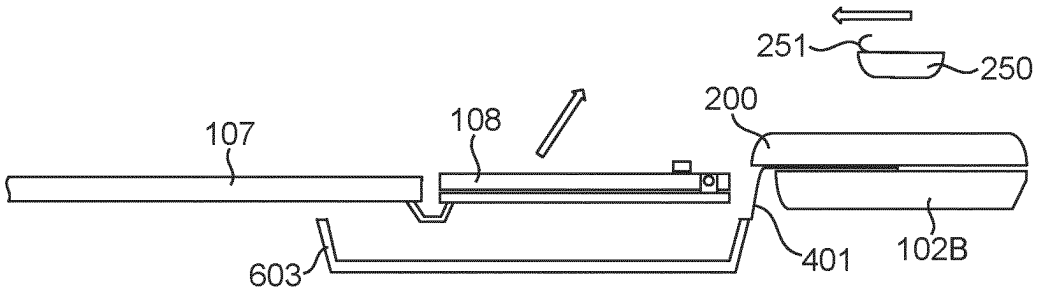

251
250
200
107
108
603
401
102B

FIG. 5C

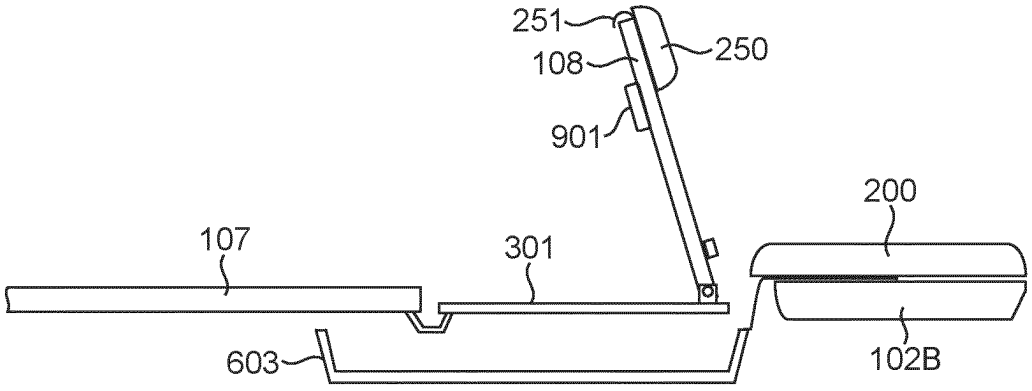

251
108
250
901
200
107
301
603
102B

FIG. 5D

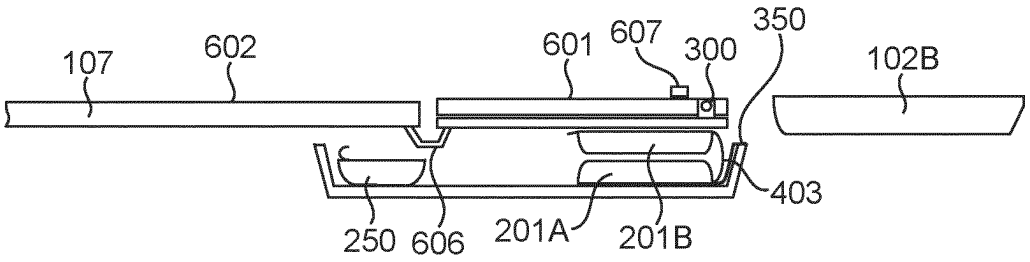

107
602
601
607
300
350
102B
403
250
606
201A
201B

FIG. 6A

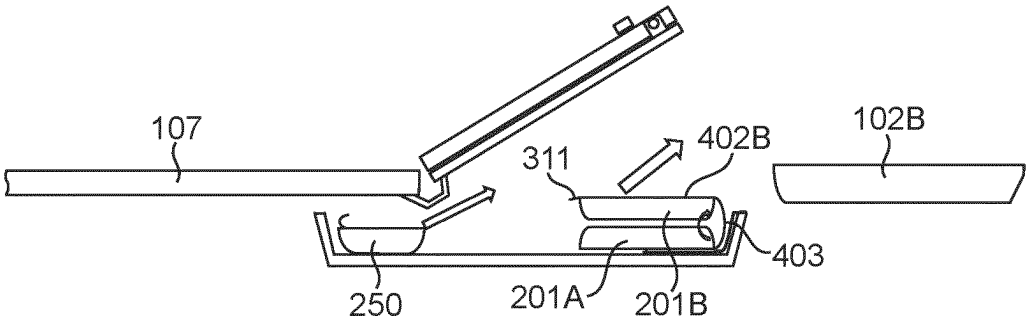

107
311
402B
102B
403
250
201A
201B

FIG. 6B

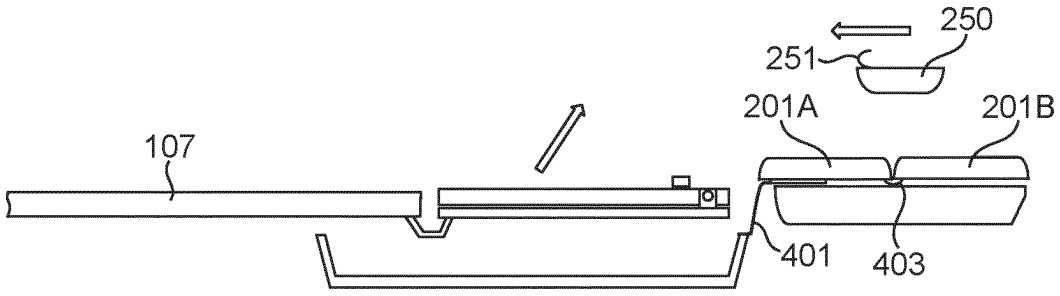


FIG. 6C

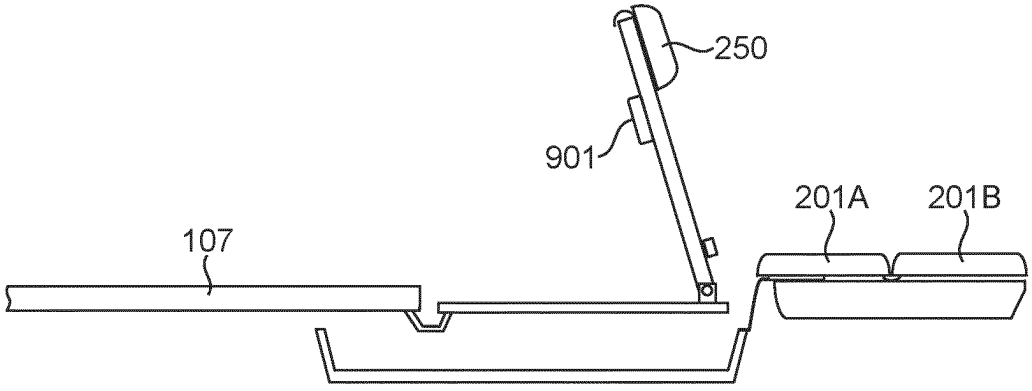


FIG. 6D

AN APPARATUS FOR A VEHICLE LOADSPACE OF A VEHICLE

TECHNICAL FIELD

[0001] The present disclosure relates to a deployable cushion for use with a vehicle. In particular, but not exclusively it relates to a deployable cushion for use with a vehicle, comprising a deployable cushioned backrest.

BACKGROUND

[0002] In vehicles with a split tailgate, users of the vehicle often open the tailgate and sit on the lower portion of the tailgate. However, the tailgate does not provide the most comfortable of surfaces to sit upon nor does it provide any back support for the user.

SUMMARY OF THE INVENTION

[0003] It is an aim of the present invention to address one or more of the disadvantages associated with the prior art.

[0004] Aspects and embodiments of the invention provide an apparatus for a vehicle loadspace, a vehicle etc, as claimed in the appended claims.

[0005] According to an aspect of the invention, there is provided a vehicle loadspace of a vehicle. The vehicle loadspace of a vehicle comprises a storage container and a panel configured to pivot via a first hinge means between a stowed orientation and a deployed orientation, wherein in the stowed orientation the panel is above the storage container and is in the plane of a loadspace surface of the vehicle loadspace. The panel is configured to pivot through an acute angle to move from the stowed orientation to the deployed orientation. The vehicle loadspace of the vehicle also comprises a first cushion member, configured to attach to a vehicle loadspace attachment point by a first coupling and movable via the first coupling between a stowed position in the storage container and a deployed position outside the storage container, wherein the first coupling is configured to locate the first cushion member when the first cushion member is in the deployed position outside the storage container.

[0006] According to an aspect of the invention, there is provided an apparatus for a vehicle loadspace of a vehicle, comprising: a storage container; a panel configured to pivot via a first hinge means between a stowed orientation and a deployed orientation, wherein in the stowed orientation the panel is above the storage container, and wherein the panel is configured to pivot through an acute angle to move from the stowed orientation to the deployed orientation; a first cushion member, configured to attach to a vehicle loadspace attachment point by a first coupling and movable via the first coupling between a stowed position in the storage container and a deployed position outside the storage container, wherein the first coupling is configured to locate the first cushion member outside the storage container when the first cushion member is in the deployed position.

[0007] According to an aspect of the invention, there is provided an apparatus for a vehicle loadspace of a vehicle, comprising: a storage container; a panel configured to pivot via a first hinge means between a stowed orientation and a deployed orientation, wherein in the stowed orientation the panel is above the storage container, and wherein the panel is configured to pivot through an acute angle to move from the stowed orientation to the deployed orientation; a first cushion member, configured to attach to a vehicle loadspace attachment point by a first coupling and movable via the first coupling between a stowed position in the storage container and a deployed position outside the storage container, wherein the first coupling is configured to locate the first cushion member outside the storage container when the first cushion member is in the deployed position.

[0008] An advantage is that the vehicle is provided with a deployable seat cushion (first cushion member) and deployable backrest (panel). The first coupling is also multifunctional, in that it both aids deployment of the seat cushion, but also locates the seat cushion once it has been deployed. This is advantageous because this also locates the cushion relative to the deployed panel, controlling the relative positions of the seat and the backrest. This increases user comfort.

[0009] Optionally, wherein the vehicle loadspace attachment point is on the storage container.

[0010] Optionally, wherein the vehicle loadspace attachment point is a rear lip of the storage container, and the first coupling is fixedly attached to the rear lip of the storage container.

[0011] Optionally, wherein the first coupling is a flexible coupling.

[0012] Optionally, wherein the first coupling comprises a band of flexible material having one edge portion fixed to the vehicle attachment point and an opposite edge portion fixed to the underside of the cushion member.

[0013] Optionally, wherein the opposite edge portion is fixed to a central region of the underside of the cushion member.

[0014] Optionally, wherein the first coupling is configured to locate the first cushion member with respect to a lower tailgate of the vehicle when the first cushion member is in the deployed configuration.

[0015] The apparatus may comprise a lid for the storage container, wherein the lid may be configured to attach to the vehicle loadspace via a second hinge means, and wherein the panel is on the lid and is attached to the lid by the first hinge means, such that a combination of the lid and the panel is rotatable about the second hinge means to uncover the storage container

[0016] An advantage is that easy access is therefore provided to the storage container, easing deployment of the first cushion member. This is because as the panel is on the lid, opening the lid to access the storage container moves the panel out of the way of a user wishing to access the storage container.

[0017] The second hinge means and the first hinge means may be located proximal to opposite edges of the lid.

[0018] An advantage is that this provides a more space efficient solution, permitting a larger lid for given vehicle loadspace size and thereby improving access to the storage container beneath the lid.

[0019] The first coupling may be arranged to enable the first cushion member to move between the stowed position in the storage container and the deployed position, wherein in the deployed position the first cushion member extends away from the lid to define a seat base and remains attached to the storage container by the first coupling.

[0020] An advantage is that the first cushion member always remains connected via the first coupling to a fixed point on the vehicle. This prevents the first cushion member from being inadvertently misplaced, once the cushion has been deployed and prior to it being stowed for storage.

[0021] The panel may be arranged to pivot via the first hinge means about a first axis relative to the loadspace surface, and the first coupling is arranged to rotate about a second axis, relative to the vehicle loadspace attachment point, wherein the second axis is parallel to the first axis.

[0022] An advantage is that when deployed, the relative positions of the first cushion member and panel (acting as a backrest) can be maintained. This enhances user comfort, if for example, the first cushion member and panel extend across substantially the width of the load space.

[0023] The panel may have a first edge. The first axis and second axis may be adjacent to the first edge when the panel is in the stowed orientation.

[0024] An advantage is that this is a space efficient solution.

[0025] Optionally, when in use, in the stowed orientation the panel is in the plane of a loadspace surface of the vehicle loadspace.

[0026] The first cushion member may comprise a first portion attached to the vehicle loadspace attachment point by the first coupling and a second portion attached to the first portion by a folding means, wherein in the stowed configuration, the folding means is configured to stow the second portion facing the first portion, and in the deployed configuration, the folding means is configured to deploy the second portion adjacent to the first portion.

[0027] An advantage is that this enables space-efficient storage of the first cushion member because, when stowed, the extent of the first cushion member in the x-direction (longitudinal direction of the vehicle) is less than the extent of the first cushion member in the x-direction when deployed.

[0028] The folding means and/or the first coupling may comprise a flexible coupling to enable the second portion to rotate with respect to the first portion.

[0029] An advantage is that the flexible coupling is unlikely to lock-up during deployment and/or stowage. The flexible coupling is also easy to manufacture, compact and lightweight.

[0030] The apparatus may comprise a retaining means for maintaining the panel at a fixed angle to an upper surface of the lid when the panel is in the deployed orientation.

[0031] An advantage is that this enables a user to lean against the panel in it deployed orientation, enabling the panel to be used as a backrest.

[0032] The first hinge means may be at an aft location of the panel and wherein the vehicle loadspace is a rear loadspace.

[0033] An advantage is that the deployable seat, comprising the panel as a seat back, is towards the rear portion of the rear loadspace. This enables a user to easily access the seat when deployed, improving user comfort.

[0034] The storage container may be further configured to store a second cushion member, wherein the second cushion member is configured to be removable from the storage container. The second cushion member may comprise coupling means, wherein the coupling means are configured to couple the second cushion member to the panel when the panel is in the first deployed configuration to define a backrest. The second cushion member may have a principal axis that is parallel to the first and second axis.

[0035] An advantage is that when the panel is in its deployed orientation, a cushion may now be coupled to the panel. This enhances user comfort as now both the seat and backrest are cushioned.

[0036] The coupling means may comprise hooks.

[0037] An advantage is that the second cushion member may be easily and quickly attached to and detached from the panel.

[0038] According to an aspect of the invention there is provided a vehicle comprising the apparatus for a vehicle loadspace.

[0039] According to an aspect of the invention, in the stowed orientation, the panel forms a floor panel within the vehicle loadspace of the vehicle.

[0040] An advantage is that the panel is multifunctional, as it may be used to both support items placed within the vehicle loadspace when in a stowed orientation, and as a seat back when in a deployed orientation.

[0041] According to an aspect of the invention, there is provided a vehicle having a vehicle load space comprising a loadspace surface, the vehicle comprising:

[0042] a storage container positioned below a plane of the vehicle loadspace surface;

[0043] a panel configured to pivot via a first hinge means between a stowed orientation and a deployed orientation, wherein in the stowed orientation the panel is above the storage container and is in the plane of the loadspace surface, and wherein the panel is configured to pivot through an acute angle to move from the stowed orientation to the deployed orientation;

a first cushion member, configured to attach to a vehicle loadspace attachment point by a first coupling and movable via the first coupling between a stowed position in the storage container and a deployed position outside the storage container, wherein the first coupling is configured to locate the first cushion member outside the storage container when the first cushion member is in the deployed position.

[0044] The vehicle loadspace attachment point may be on the storage container.

[0045] Optionally, the vehicle loadspace attachment point is a rear lip of the storage container, and the first coupling is fixedly attached to the rear lip of the storage container.

[0046] Optionally, the first coupling is a flexible coupling.

[0047] Optionally, the first coupling comprises a band of flexible material having one edge portion fixed to the vehicle attachment point and an opposite edge portion fixed to the underside of the cushion member. The opposite edge portion may be fixed to a central region of the underside of the cushion member.

[0048] The first coupling may be configured to locate the first cushion member with respect to a lower tailgate of the vehicle when the first cushion member is in the deployed configuration.

[0049] The vehicle may comprise a lid for the storage container, wherein the lid is configured to attach to the vehicle loadspace via a second hinge means, and wherein the panel is on the lid and is attached to the lid by the first hinge means, such that a combination of the lid and the panel is rotatable about the second hinge means to uncover the storage container.

[0050] The second hinge means and the first hinge means may be located proximal to opposite edges of the lid.

[0051] Optionally, the first coupling is arranged to enable the first cushion member to move between the stowed

position in the storage container and the deployed position, wherein in the deployed position the first cushion member extends away from the lid to define a seat base and remains attached to the storage container by the first coupling.

[0052] Optionally, the panel is arranged to pivot via the first hinge means about a first axis relative to the loadspace surface, and the first coupling is arranged to rotate about a second axis, relative to the vehicle loadspace attachment point, wherein the second axis is parallel to the first axis.

[0053] The panel may have a first edge, and the first axis and second axis may be adjacent to the first edge when the panel is in the stowed orientation.

[0054] Optionally, the first cushion member comprises a first portion attached to the vehicle loadspace attachment point by the first coupling and a second portion attached to the first portion by a folding means, wherein in the stowed configuration, the folding means is configured to stow the second portion facing the first portion, and in the deployed configuration, the folding means is configured to deploy the second portion adjacent to the first portion.

[0055] Optionally, the folding means and/or the first coupling comprise a flexible coupling to enable the second portion to rotate with respect to the first portion.

[0056] Optionally, the apparatus comprises a retaining means for maintaining the panel at a fixed angle to an upper surface of the lid when the panel is in the deployed orientation.

[0057] Optionally, the first hinge means is at an aft location of the panel and the vehicle loadspace is a rear loadspace.

[0058] Optionally, the storage container is further configured to store a second cushion member, wherein the second cushion member is configured to be removable from the storage container.

[0059] Optionally, the second cushion member comprises coupling means, wherein the coupling means are configured to couple the second cushion member to the panel when the panel is in the first deployed configuration to define a backrest. The coupling means may comprise hooks.

[0060] In the stowed orientation the panel may form a floor panel within the vehicle loadspace of the vehicle.

[0061] Within the scope of this application, it is expressly intended that the various aspects, embodiments, examples and alternatives set out in the preceding paragraphs, in the claims and/or in the following description and drawings, and in particular the individual features thereof, may be taken independently or in any combination that falls within the scope of the appended claims. That is, all embodiments and/or features of any embodiment can be combined in any way and/or combination that falls within the scope of the appended claims, unless such features are incompatible. The applicant reserves the right to change any originally filed claim or file any new claim accordingly, including the right to amend any originally filed claim to depend from and/or incorporate any feature of any other claim although not originally claimed in that manner

BRIEF DESCRIPTION OF THE DRAWINGS

[0062] One or more embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

[0063] FIG. **1** illustrates an example of a vehicle;

[0064] FIG. **2** shows a rear perspective view of a vehicle comprising apparatus embodying the present invention in a stowed configuration;

[0065] FIG. **3** shows a rear perspective view of the vehicle with the apparatus in a deployed configuration;

[0066] FIG. **4** shows a view of the lid and hinge mechanism of the apparatus in the stowed configuration from the side and above;

[0067] FIG. **5**A shows a first embodiment of the apparatus with its first cushion member, second cushion member and panel in their stowed positions;

[0068] FIG. **5**B shows a first embodiment of the apparatus with its lid in a raised orientation;

[0069] FIG. **5**C shows a first embodiment of the apparatus with the first cushion member in its deployed position;

[0070] FIG. **5**D shows a first embodiment of the apparatus with the first cushion member, second cushion member and panel in their deployed positions;

[0071] FIG. **6**A shows a second embodiment of the apparatus with its first cushion member, second cushion member and panel in their stowed positions;

[0072] FIG. **6**B shows a second embodiment of the apparatus with its lid in a raised orientation;

[0073] FIG. **6**C shows a second embodiment of the apparatus with first cushion member in its deployed position, and

[0074] FIG. **6**D shows a second embodiment of the apparatus with the first cushion member, second cushion member and panel in their deployed positions.

DETAILED DESCRIPTION

[0075] FIG. **1** illustrates an example of a vehicle **100** in which embodiments of the invention can be implemented. In some, but not necessarily all examples, the vehicle is a passenger vehicle, also referred to as a passenger car or as an automobile. In other examples, embodiments of the invention can be implemented for other applications, such as commercial vehicles.

[0076] FIG. **1** is a front perspective view and illustrates a longitudinal x-axis between the front and rear of the vehicle **100** representing a centreline, an orthogonal lateral y-axis between left and right lateral sides of the vehicle, and a vertical z-axis. A forward/fore direction typically faced by a driver's seat is in the positive x-direction; rearward/aft is-x. A rightward direction as seen from the driver's seat is in the positive y-direction; leftward is-y. These are a first lateral direction and a second lateral direction.

[0077] A rear perspective view of a vehicle **100** comprising apparatus **101** embodying the present invention is shown in FIGS. **2** and **3**. The vehicle **100** has a tailgate **102** at its rear end **103** to provide access to a load space **104**. In the present embodiment the tailgate **102** is a split tailgate having an upper tailgate **102**A and a lower tailgate **102**B. The upper tailgate **102**A is attached to the body **105** of the vehicle **100** by hinges (not shown) at an upper edge of the upper tailgate **102**A. The lower tailgate **102**B is attached to the body **105** by hinges (not shown) at a lower edge of the lower tailgate **102**B so that the lower tailgate **102**B is pivotable about a lateral axis between a closed position and an open position. In FIGS. **1** and **2** both the upper tailgate **102**A and lower tailgate **102**B are shown in their open position. As is known, the lower tailgate **102**B may provide a user of the vehicle **100** with a temporary sitting area for use while the vehicle **100** is stationary.

[0078] The load space **104** has a floor **106** comprising a load floor board **107**. The load floor board **107** may be carpeted on its upper surface.

[0079] The apparatus **101** includes a panel **108**, which is shown in FIG. **2** in a stowed orientation, in which the panel **108** forms a part of the floor **106** of the loadspace **104**. In other words, when the panel **108** is in the stowed configuration, the panel **108** is in the plane of a loadspace surface, such as the floor **106**. In the stowed configuration, the panel **108** therefore forms a floor panel in the loadspace **104** of the vehicle. The upper surface of the panel **108** may be carpeted to match the upper surface of the load floor board **107**.

[0080] In the stowed position of FIG. **2**, the panel **108** resides above a container (**603** in FIG. **5**A-**6**D) that contains a first cushion member **200** and a second cushion member **250**. The panel **108** may be moved, as will be described below, to enable the first cushion member **200** and second cushion member **250** to be moved out of the container **603** and deployed to form a cushioned seat comprising the opened lower tailgate **102**B.

[0081] The panel **108** is shown in a deployed orientation in FIG. **3**, in which it extends upwards at an acute angle to the horizontal. The acute angle may between 70 degrees and 90 degrees to horizontal, and typically 80 degrees to horizontal. When the first cushion member **200** is in its deployed position, on the lower tailgate as shown in FIG. **2**, the panel **108** extends upwards behind the cushion member **200** (as viewed from the rear of the vehicle **100**), with the second cushion member **250** attached to the panel to provide a cushioned backrest for a user sitting upon on the first cushion member **200**.

[0082] As illustrated by FIG. **4**, the panel **108** is substantially rectangular. The panel **108** is pivotally attached to a lid **301** to enable the panel **108** to pivot between the stowed orientation of FIG. **2**, in which the panel **108** extends alongside a first face **302** of the lid **301**, and a deployed orientation of FIG. **3**, in which the panel **108** extends at a positive angle to the first face **302** of the lid **301**, The panel **108** is attached to the lid **301** by a first hinge means **300** comprising pivot pins **303** located within brackets **304** that provide bearings for the pivot pins **303**. In the present embodiment, the pivot pins **303** are fixed to the panel **108** and the brackets **304**, which provide bearings for the pivot pins **303**, are fixed to the lid **301**. However, in other embodiments, the pivot pins **303** may be fixed to the lid **301** and the panel **108** may comprise bearings in which the pivot pins **303** are arranged to pivot.

[0083] In the present embodiment, the brackets **304** and pivot pins **303** are positioned at opposite ends of the panel **108**. Additionally, or alternatively, brackets **304** and corresponding pivot pins **303** may be positioned part way along the panel **108**.

[0084] The lid **301** has a similar shape to the panel **108**, and therefore in the present embodiment, the first face **302** of the lid **301** has a rectangular shape, having two longer sides **305** and **306** and two shorter sides **307** and **308**. The first long side **305** of the lid **301** extends alongside a first side face **309** of the panel **108** and the second long side **306** extends alongside a second side face **310** of the panel **108**.

[0085] The panel **108** is attached to the lid **301** by the first hinge means **300** so that it is able to pivot with respect to the lid **301** about an axis **501** that extends next to, and parallel to, the first side face **309** of the panel **108**.

[0086] The lid **301** is pivotably attached to the loadspace floor board **107** by the second hinge means **606**, about a second axis that extends to next to, and parallel to the second side face **310** of the panel **108**.

[0087] The first hinge means **300** and the second hinge means **606** are therefore located proximal to opposite edges **309**, **310** of the lid **301**.

[0088] The deployment of the first cushion member **200** and the second cushion member **250** is now described with reference to FIGS. **5**A-**6**D, in which FIGS. **5**A-**5**D disclose a first embodiment, and FIGS. **6**A-**6**D disclose a second embodiment.

[0089] The first cushion member **200** and second cushion member **250** are formed of relatively soft and pliable materials, and therefore when deployed, provide a user sitting on the lower tailgate **102**B with a relatively comfortable area to sit on.

[0090] The first cushion member **200** defines a seat base, whereas the second cushion member **250** defines a seat back.

[0091] The first cushion member **200** may comprise a single cushion.

[0092] Deployment of the first cushion member **200**, second cushion member **20** and panel **108** is illustrated in FIGS. **5**A, **5**B, **5**C and **5**D, which show cross-sectional side views of the apparatus **101**, the load floor board **107**, the lower tailgate **102**B and a storage container **603**.

[0093] The storage container **603** may be in the form of an open-top box having a rectangular floor **604** and side walls **605** extending upwards from each side of the floor **604**. The storage container **603** is positioned below the floor **106** of the loadspace **104**, for example adjacent to a spare wheel (not shown) of the vehicle **100**. The container may be formed as an integral portion of the body of the vehicle **100**. Alternatively, the container may be separate to the vehicle body, for example, forming part of a module that is attached to the vehicle body during vehicle assembly.

[0094] The first cushion member **200**, second cushion member **250** and the panel **108** are shown in their stowed positions in FIG. **5**A. The upper surface **601** of the panel **108** extends in substantially the same plane as the upper surface **602** of the load floor board **107** to provide a substantially continuous floor **106** for the load space **104**. The substantially continuous floor **106** may be a loadspace surface **106**.

[0095] In its orientation shown in FIG. **5**A, the lid **301** extends over the open top of the container **603**. The lid **301** is mounted on second hinge means **606** so that it may be pivoted upwards about an axis adjacent to the side **306** of the lid **301** to uncover the storage container **603** and enable access it. The lid **301** is mounted on second hinge means **606** attached to the load floor board **107** of the loadspace **104**, but in alternative embodiments the lid **301** may be hingedly attached to another supporting structure in a vehicle **100**. The lid **301**, or as shown in FIG. **5**A, the panel **108**, may be provided with a handle **607** to facilitate lifting of the lid **301** away from the storage container **603**. The handle **607** may be for example a strap or tab attached to the panel **108**.

[0096] The lid **301** is shown in a raised orientation in FIG. **5**B, for example after being manually lifted by pulling up on the handle **607**. It may be noted that the panel **108** continues to reside alongside the upper face **302** of the lid **301**. The first cushion member **200** and second cushion member **250** are now accessible and may be removed from the container **603**.

[0097] The second cushion member **250** is not attached to any other component, and may be removed and placed to one side, for deployment, as will be described.

[0098] It may be appreciated that the storage container **603** may be sized such that additional items to the first cushion member **200** and second cushion member **250** may be stored within it. This is advantageous because easy access is provided to the storage container when the lid **301** is in its raised orientation.

[0099] The first cushion member is attached by at least one first coupling **401** to a vehicle loadspace attachment point **350**. The at least one first coupling **401** may be a flexible coupling. In FIGS. **5**A-**5**D, the vehicle loadspace attachment point **350** is a rear lip of the storage container **603**, and the first coupling **401** is fixedly attached to the rear lip of the storage container **603**. However, it may alternatively be fixedly connected to another mounting point in the vicinity of the lip of the storage container **603** such as an attachment point on the vehicle body, as would be appreciated by a person skilled in the art.

[0100] It may be understood that although described as a vehicle loadspace attachment point **350**, the vehicle loadspace attachment point **350** may comprise any one of a point contact, line contact or area contact with the storage container **603** or vehicle body.

[0101] In the present embodiment the first coupling **401** comprises a band of flexible material having one edge portion fixed to the vehicle attachment point and an opposite edge portion fixed to the underside of the cushion member **200**. For example, the opposite edge portion may be fixed to a central region of the underside of the cushion member **200**. The movement of the cushion member **200** with respect to the vehicle loadspace attachment point therefore bends the strip of flexible material forming the first coupling **401**, causing the first coupling **401** to rotate about an axis. This axis may be parallel to a line of contact of the first coupling **401** with the vehicle loadspace attachment point **350**. In some embodiments, this axis may be in a transverse direction (+/−y direction) relative to the vehicle body. This axis may be parallel to a pivotable axis of the first hinge means and/or second hinge means. When the cushion member **200** is moved with respect to the vehicle loadspace attachment point **350**, the cushion member stays in the same orientation, and does not rotate.

[0102] Although flexible, the material forming the first coupling **401** is substantially inelastic. Movement of the first cushion member **200** relative to the storage container **603** is therefore substantially constrained by the first coupling.

[0103] When the first cushion member **200** is moved from the stowed configuration (FIG. **5**B) to the deployed configuration (FIG. **5**C), the placement of the first cushion member **200** on the lower tailgate **102**B is therefore constrained by the first coupling. In this case, the band of flexible material flexes, to, for example, follow the contour of any underlying surface with which it is in contact. When a user, present at the lower tailgate and facing the loadspace **104**, pulls the first cushion member **200** towards them, movement of the first cushion member **200** occurs until the first coupling is pulled taut. No further rearward movement of the cushion member is then possible.

[0104] The dimensions of the first coupling **401**, location of the vehicle loadspace attachment point **350** and opposing attachment point on the underside of the first cushion member **200** are selected such that when the first coupling **401** is pulled taut, for example, by a user, the first cushion member **200** is over the lower tailgate **102**B. The first coupling therefore locates the first cushion member **200** when it is the deployed configuration (deployed on the lower tailgate **102**B of the vehicle **100**). Similarly, the dimensions of the first coupling **401**, location of the vehicle loadspace attachment point **350** and opposing attachment point on the underside of the first cushion member **200** also enable the cushion member **200** to be located in the stowed position in the storage container.

[0105] It can be appreciated that the band of flexible material that comprises the first coupling may be substantially equal, or less than substantially equal to the width of the first cushion member **200** (+/−y direction). Hence, pulling the first coupling taut during deployment may additionally control the orientation (relative rotation about the z direction) of the first cushion member **200** relative to the vehicle **100** and/or lower tailgate **102**B of the vehicle **100**. For example, it can be appreciated that the first coupling may be configured such that an edge of the first cushion member **200** may be substantially parallel (+/−y direction) with an edge of the lower tailgate **102**B.

[0106] Once the first cushion member **200** has been deployed, and the second cushion member **250** has been removed from the storage container, the lid **301** may be lowered back to its original position, over the storage container **603**.

[0107] In FIG. **5**C, the first cushion member **200** is shown in its deployed position in which the cushion member **200** extends away from the lid **301** in a substantially parallel plane to the second face **400** of the lid **301**. The lower tailgate **102**B in combination with the cushion member **200** provides a cushioned seat area upon which a user of the vehicle **100** may sit.

[0108] The panel **108** may then be moved from its stowed position, in which it extends alongside the first face **302** of the lid **301**, to a raised position that is shown in FIG. **5**D, in which the panel **108** extends at a positive angle to the first face **302** of the lid **301** and provides a backrest for a user sitting on the cushion member **200**. This is achieved by pivoting the panel **108** upwards about the first hinge means **300**. A retaining means **901** (illustrated schematically as block **901** in FIG. **5**D) is provided for maintaining the panel at the positive angle to the first face. The retaining means **901** may comprise a releasable latching mechanism fixed to side walls of the loadspace **104**. Alternatively, the retaining means **901** may form a part of the apparatus **101**. For example, the retaining means **901** may comprise struts that extend between the panel **108** and the lid **301** (not shown).

[0109] Once panel **108** is in its raised position, the second cushion member **250** may be secured to the panel **108** to form a cushioned back rest. Various coupling means **251** may be used to couple (secure) the second cushion member **250** to the panel **108**. For example, at least one hook, **251**, may be attached to an upper portion of an undersurface of the second cushion member **250**, with the at least one hook **251** configured to hook over the raised edge of the panel **108**, as shown in FIG. **5**D.

[0110] It may be appreciated that a plurality of hooks **251** may be used, for example, a first hook at or a left portion of the second cushion member **251**, a second hook, at or close to a right portion of the second cushion member **251** and optionally, a third hook at or close to a center portion of the second cushion member **251**.

[0111] It may be appreciated that other coupling means **251** may be employed—for example hook and eyelet securing systems such as Velcro™, press-studs, magnetic fasteners or arrangements of doweling & sockets et cetera.

[0112] It may also be appreciated that the second cushion member may have substantially the same width (transverse to the vehicle **100**) as the first cushion member. However, the second cushion member may not cover the full area of the deployed panel **108**. Hence, the second cushion member may be elongate, having a principal axis (in its elongate direction) that is in a transverse direction (+/−y direction) when deployed in the vehicle **100**.

[0113] Stowage of the first cushion member **200** and second cushion member **250** is the reverse of deployment, in that the second cushion member **250** is removed from the panel, the retaining means **901** disengaged and the panel **108** pivoted back down. The lid **301** is then lifted and the first cushion member **200** and second cushion member **250** returned to their respective stowed positions. The first cushion member **200** may be moved back into container **603**, with its movement also optionally constrained by the first coupling **401**, so that it is located within a specific portion—for example, a rear portion, of the storage cavity. The second cushion member **250** may then also be placed back into the storage container **603**, in the remaining space left after the first cushion member **200** has been stowed.

[0114] In the example illustrated in FIGS. **5**A and **5**B, the second cushion member **250** is returned to a position in the container **603** that is forward of the position of the cushion member **250** in the container. The lid **301** is then closed, completing stowage of the cushion member **200** and second cushion member **250**.

[0115] It can be appreciated that the length of the storage container (+/−x direction) may be determined by the size of the first cushion member **200** and the second cushion member **250** to be stored.

[0116] It can also be appreciated how, for vehicle packaging purposes, it may be desirable to have a differently proportioned storage container, relative to that shown in FIGS. **5**A-**5**D. For example, it may be desirable to have a shorter storage container **603** in the +/−x-direction.

[0117] Although this can be accomplished by reducing the size of the first and second cushion members, this is likely to reduce user comfort. This is particularly the case for the first cushion member **200** as it may result in a narrower seat base.

[0118] Hence, in an additional embodiment, there is disclosed an alternative first cushion member **200** and a second cushion member **250**. The second cushion member **250** is as disclosed above and is stowed and deployed in the same manner.

[0119] However, the first cushion member **200** differs in that it comprises two portions **201**A and **201**B. An underside **402**A of the first portion **201**A is attached to the vehicle attachment point **350** by the first coupling **401** and a second side **402**B of the first portion **201**A is attached to the second portion **201**B by a folding means **403** arranged to enable the second portion **201**B to pivot with respect to the first portion **201**A.

[0120] Pivoting of the second portion **201**B with respect to the first portion **201**A is desirable because it enables the seat face of the first portion **201**A to be stowed adjacent to the seat face of the second portion **201**B in the storage container **603**, preventing damage to either seat face. As the first cushion member **200** comprises a first portion **201**A and a second portion **201**B, stowed on top of each other, the length of the storage compartment (+/−x direction) may be reduced.

[0121] Additionally, in the deployed configuration the second portion **201**B is deployed adjacent to first portion **201**A. Thus, a wider seat base is provided in the deployed configuration on the lower tailgate **102**B, enhancing vehicle comfort.

[0122] When the lid **301** is raised, the underside **402**B of the second portion **201**B is visible. A handle **311** may be provided on the underside or at an edge of the second portion **201**B to aid deployment of the first portion **201**A and second portion **201**B of the first cushion member **200** from the stowed position to the deployed position. During deployment, the second portion **201**B pivots about the folding means **403** relative to the first portion **201**A.

[0123] The folding means **403** may comprise a hinge mechanism. In the present embodiment the folding means **403** comprises a live hinge in the form of a strip of flexible material having a first edge attached to the first portion **201**A and a second edge attached to the second portion **201**B. The strip of flexible material forming the folding means **403** may comprise material forming an outer layer of the cushion portions **201**. For example, a continuous sheet of material may form a first face **503** of the first portion **201**A and a first face **504** of the second portion **201**B, as well as the strip of flexible material that enables the folding of the cushion member **200**.

[0124] Although flexible, the material of the folding means **403** is substantially inelastic. Hence, the folding means **403** constrains the movement of the second portion **201**B relative to the first portion **201**A, while the first coupling **401** constrains the movement of the first portion **201**A relative to the vehicle loadspace attachment point **350**.

[0125] The combination of the first coupling **401** and folding means **403** therefore locates the first portion **201**A and second portion **201**B of the first cushion means **200** when the cushion means is deployed on the lower tailgate **102**B.

[0126] The first coupling **401** and the folding means **403** therefore function in a similar manner to each other, in that both are flexible, but substantially inelastic.

[0127] In some embodiments, the first coupling **401** and folding means **403** comprise the same type of material. Suitable materials include nylon (such as nylon webbing), and leather. In some embodiments, low elasticity automotive grade versions of these materials may be used.

[0128] In some embodiments, the first coupling **401** and folding means **403** may comprise the same piece of material, with the underside **401**A of first portion **201**A and the underside **401**B of second portion **201**B attached to the material.

[0129] Although the above embodiment discloses first and second cushion members which run substantially across the width of the lower tailgate **102**B to form a bench seating arrangement, it is appreciated that the first cushion member **200**, first portion **201**A, second portion **201**B, first coupling **401** and folding means **403** may be configured to form separate, adjacent seats on the lower tailgate **102**B, each seat extending across less than half the width of the lower tailgate **102**B. It is also appreciated that in this case, these seats may be stowed and deployed independently.

[0130] It may also be appreciated that although the above embodiments make reference to the deployment of the first cushion member **200** over a lower tailgate **102**B, in other embodiments there is no lower tailgate, with the first cushion member **200** alternatively deployed over a rear portion of the loadspace **104** of the vehicle **100**.

[0131] It will be appreciated that various changes and modifications can be made to the present invention without departing from the scope of the present application. For example, it will be appreciated that the first coupling **401** and folding means **403** could be substituted by a rigid, mechanical arrangement, comprising at least one hinge,

[0132] Although embodiments of the present invention have been described in the preceding paragraphs with reference to various examples, it should be appreciated that modifications to the examples given can be made without departing from the scope of the invention as claimed. For example, it will be appreciated that the apparatus may be used to provide a cushioned area with a backrest on the floor of the loadspace of a vehicle that does not have a split tailgate such that a user of the vehicle may comfortably sit, provided the vehicle has space below its floor level to accommodate the apparatus, particularly when the cushion member is in its stowed position.

[0133] Features described in the preceding description may be used in combinations other than the combinations explicitly described.

[0134] Although functions have been described with reference to certain features, those functions may be performable by other features whether described or not.

[0135] Although features have been described with reference to certain embodiments, those features may also be present in other embodiments whether described or not.

[0136] Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

1. An apparatus for a vehicle loadspace of a vehicle, comprising:

a storage container;

a panel configured to pivot via a first hinge means between a stowed orientation and a deployed orientation, wherein in the stowed orientation the panel is above the storage container, and wherein the panel is configured to pivot through an acute angle to move from the stowed orientation to the deployed orientation;

a first cushion member, configured to attach to a vehicle loadspace attachment point by a first coupling and movable via the first coupling between a stowed position in the storage container and a deployed position outside the storage container, wherein the first coupling is configured to locate the first cushion member outside the storage container when the first cushion member is in the deployed position.

2. An apparatus as claimed in claim **1**, wherein the vehicle loadspace attachment point is on the storage container.

3. An apparatus as claimed in claim **2**, wherein the vehicle loadspace attachment point is a rear lip of the storage container, and the first coupling is fixedly attached to the rear lip of the storage container.

4. An apparatus as claimed in claim **1**, wherein the first coupling is a flexible coupling.

5. An apparatus as claimed in claim **1**, wherein the first coupling comprises a band of flexible material having one edge portion fixed to the vehicle attachment point and an opposite edge portion fixed to the underside of the cushion member.

6. An apparatus as claimed in claim **5**, wherein the opposite edge portion is fixed to a central region of the underside of the cushion member.

7. An apparatus as claimed in claim **1**, wherein the first coupling is configured to locate the first cushion member with respect to a lower tailgate of the vehicle when the first cushion member is in the deployed configuration.

8. The apparatus as claimed in claim **1**, wherein the apparatus comprises a lid for the storage container, wherein the lid is configured to attach to the vehicle loadspace via a second hinge means, and wherein the panel is on the lid and is attached to the lid by the first hinge means, such that a combination of the lid and the panel is rotatable about the second hinge means to uncover the storage container.

9. The apparatus as claimed in claim **1**, wherein, in use, in the stowed orientation the panel is in the plane of a loadspace surface of the vehicle loadspace.

10. The apparatus as claimed in claim **1**, wherein the first cushion member comprises a first portion attached to the vehicle loadspace attachment point by the first coupling and a second portion attached to the first portion by a folding means, wherein in the stowed configuration, the folding means is configured to stow the second portion facing the first portion, and in the deployed configuration, the folding means is configured to deploy the second portion adjacent to the first portion.

11. The apparatus as claimed in claim **1**, wherein the apparatus comprises a retaining means for maintaining the panel at a fixed angle to an upper surface of the lid when the panel is in the deployed orientation.

12. The apparatus as claimed in claim **1**, wherein the first hinge means is at an aft location of the panel and wherein the vehicle loadspace is a rear loadspace.

13. The apparatus as claimed in claim **1**, wherein the storage container is further configured to store a second cushion member, wherein the second cushion member is configured to be removable from the storage container, and optionally wherein the second cushion member comprises coupling means, wherein the coupling means are configured to couple the second cushion member to the panel when the panel is in the first deployed configuration to define a backrest, and optionally wherein the coupling means comprises hooks.

14. A vehicle comprising the apparatus of claim **1**.

15. The vehicle of claim **14**, wherein in the stowed orientation the panel forms a floor panel within the vehicle loadspace of the vehicle.

16. The apparatus as claimed in claim **8**, wherein the second hinge means and the first hinge means are located proximal to opposite edges of the lid.

17. The apparatus as claimed in claim **8**, wherein the first coupling is arranged to enable the first cushion member to move between the stowed position in the storage container and the deployed position, wherein in the deployed position the first cushion member extends away from the lid to define a seat base and remains attached to the storage container by the first coupling.

18. The apparatus as claimed in claim **1**, wherein the panel is arranged to pivot via the first hinge means about a first axis relative to the loadspace surface, and the first coupling is arranged to rotate about a second axis, relative to the vehicle loadspace attachment point, wherein the second axis is parallel to the first axis.

19. The apparatus as claimed in claim **18**, wherein the panel has a first edge, and the first axis and second axis are adjacent to the first edge when the panel is in the stowed orientation.

20. The apparatus as claimed in claim **10**, wherein the folding means and/or the first coupling comprise a flexible coupling to enable the second portion to rotate with respect to the first portion.

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