

(19)



(11)

EP 3 932 508 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
01.01.2025 Bulletin 2025/01

(51) International Patent Classification (IPC):
A63H 17/00 (2006.01)

(21) Application number: **21183318.1**

(52) Cooperative Patent Classification (CPC):
A63H 17/262; A63H 17/002; A63H 17/264

(22) Date of filing: **01.07.2021**

(54) **BODY MOUNTING SYSTEM FOR A MODEL VEHICLE**

KAROSSERIEMONTAGESYSTEM FÜR EIN MODELLFAHRZEUG

SYSTÈME DE MONTAGE DE CARROSSERIE POUR VÉHICULE MODÈLE

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

- **SPROWL, Jory**
Honey Grove, 75446 (US)
- **NICHOLS, Kevin**
Farmersville, 75442 (US)
- **WOOD, Jonathan Scott**
Frisco, 75036 (US)
- **ALLMENDINGER, Otto Karl**
Rowlett, 75088 (US)
- **POTEET, Kent**
Lucas, 75002 (US)

(30) Priority: **02.07.2020 US 202063047344 P**

(43) Date of publication of application:
05.01.2022 Bulletin 2022/01

(73) Proprietor: **Traxxas LP**
McKinney, TX 75070 (US)

(74) Representative: **Finnegan Europe LLP**
1 London Bridge
London SE1 9BG (GB)

(72) Inventors:
• **EWING, Adam Cole**
McKinney, 75071 (US)
• **SOWARD, Terry**
Van Alstyne, 75495 (US)

(56) References cited:
US-A- 2 141 267 US-A- 2 691 244
US-A- 3 653 149 US-A- 4 466 215
US-A- 4 470 219 US-A1- 2013 309 938

EP 3 932 508 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

BACKGROUND

[0001] The following descriptions and examples are not admitted to be prior art by virtue of their inclusion in this section.

[0002] Radio-Controlled or RC model vehicles are a popular hobby for a growing segment of the population. In the case of electrically powered vehicles, as the electronics become more sophisticated and the batteries more advanced, the ease of operation and the run time of RC model vehicles have increased dramatically. However, one area that has fallen behind in terms of ease of operation is the removal and attachment of a model vehicle body to a model vehicle chassis.

[0003] Traditional methods of removal and attachment include dealing with a multitude of mounting posts and protruding pins that must be used with clips in order to secure the model vehicle body to the model vehicle chassis. This process takes time and the user has to be on guard against losing any of the many clips in an outdoor environment. Since the body must be removed every time in order to initially activate the vehicle and again whenever there is a need to charge the batteries, valuable run time is wasted on this necessary procedure.

[0004] US 3 653 149 A1 relates to a toy vehicle body simulating a high performance vehicle. The toy vehicle body is hingedly attached to a toy vehicle chassis and a body support member is hingedly attached to the toy vehicle chassis to support the toy vehicle body above the toy vehicle chassis to allow the exposure of the toy vehicle's engine and interior assembly, when desired.

[0005] US 2 141 267 A1 relates to a vehicle in which a body structure is pivotally mounted on a chassis structure to provide a vehicle having a body structure movably connected to a chassis structure of the vehicle. The vehicle is provided with a hydraulic brake cylinder together with a brake pedal for operating the same, the combination of a main frame assembly, a rock shaft mounted on said main frame assembly, a lever member fixedly mounted on said rock shaft and pivotally connected with said hydraulic brake cylinder, an idler lever pivotally mounted on said main frame assembly, a second lever member fixedly mounted on said rock shaft, a rod member pivotally connected with said second lever member and said idler lever, a collar member fixedly mounted on said rod member, an auxiliary frame assembly pivotally supported on said main frame assembly, and a forked lever member pivotally mounted on said auxiliary frame assembly and adapted to straddle said rod member and engage said collar member, said forked lever being connected with said brake pedal.

SUMMARY

[0006] This summary is provided to introduce a selection of concepts that are further described below in the

detailed description. This summary is not intended to identify key or essential features of the claimed subject matter, nor is it intended to be used as an aid in limiting the scope of the claimed subject matter.

[0007] According to aspects of the present disclosure there are provided a body mounting system and a model vehicle as set forth in the appended claims. Other features of the invention will be apparent from the dependent claims, and the description which follows and the attached drawings.

[0008] In accordance with one embodiment, a model vehicle is provided comprising a model vehicle chassis, a model vehicle body, and a body mounting system. The body mounting system comprises a first mount pivotally connected to a first end of the model vehicle body and a second mount connected to a second end of the model vehicle body located opposite to the first end. Wherein the first mount releasably couples the first end of the model vehicle body to the model vehicle chassis and the model vehicle body is pivoted about a rotation point and releasably coupled to the model vehicle chassis via the second mount.

[0009] In another embodiment a model vehicle is provided comprising a model vehicle chassis, a model vehicle body comprising a body support mechanism, and a body mounting system. The body mounting system comprises a first mount pivotally connected to a first end of the model vehicle body via the body support mechanism and a second mount connected to a second end of the model vehicle body located opposite to the first end via the body support mechanism. Wherein the first mount releasably couples the first end of the model vehicle body to the model vehicle chassis in a first direction. In addition, the second end of the model vehicle body is rotated about the pivotal connection and the second mount releasably couples the second end of the model vehicle body to the model vehicle chassis in a second direction.

[0010] In still another embodiment a body mounting system for a model vehicle is provided comprising a first mount and a second mount. The first mount comprises a first body mount and a first chassis mount. The first body mount comprises a first support and a first latch. The first chassis mount comprises a first support receptacle a first latch receptacle. The second mount comprises a second body mount and a second chassis mount. The second body mount comprises a second support and a second latch. The second chassis mount comprises a second support receptacle and a second latch receptacle. Wherein the first body mount releasably couples to the first chassis mount in a first direction, and the first body mount is configured to be pivotally coupled to a model vehicle body;

[0011] Other or alternative features will become apparent from the following description, from the drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Certain embodiments will hereafter be described with reference to the accompanying drawings, wherein like reference numerals denote like elements. It should be understood, however, that the accompanying drawings illustrate only the various implementations described herein and are not meant to limit the scope of various technologies described herein. The drawings are as follows:

FIG. 1 is an elevated side view of a transparent body on a model vehicle chassis in a closed position, in accordance to an embodiment of the current disclosure;

FIG. 2 is an elevated side view of the transparent body on a model vehicle chassis of FIG. 1 in an open position, in accordance with an embodiment of the current disclosure;

FIG. 3 is an enlarged assembly partial perspective view of a first mount showing both the first body mount and the corresponding first chassis mount, in accordance with an embodiment of the current disclosure;

FIG. 4 is an enlarged assembly perspective view of a second mount showing both the second body mount and the corresponding second chassis mount, in accordance with an embodiment of the current disclosure; and

FIG. 5 is an enlarged perspective view of the second mount of FIG. 4 showing the mount in an engaged position, in accordance with an embodiment of the current disclosure.

DETAILED DESCRIPTION

[0013] In the following specification, numerous specific details are set forth to provide a thorough understanding of embodiments of the present disclosure. However, those skilled in the art will appreciate that the embodiments may be practiced without such specific details. In other instances, well-known elements have been illustrated in schematic or block diagram form in order not to obscure embodiments of the present disclosure in unnecessary detail.

[0014] Reference throughout the specification to "one embodiment," "an embodiment," "some embodiments," "one aspect," "an aspect," or "some aspects" means that a particular feature, structure, method, or characteristic described in connection with the embodiment or aspect is included in at least one embodiment of the present disclosure. Thus, the appearance of the phrases "in one embodiment" or "in an embodiment" or "in some embodiments" in various places throughout the specification are

not necessarily all referring to the same embodiment. Furthermore, the particular features, structures, methods, or characteristics may be combined in any suitable manner in one or more embodiments. The words "including" and "having" shall have the same meaning as the word "comprising."

[0015] Moreover, inventive aspects lie in less than all features of a single disclosed embodiment. Thus, the claims following the Detailed Description are hereby expressly incorporated into this Detailed Description, with each claim standing on its own as a separate embodiment.

[0016] Radio Controlled (RC) model vehicles usually comprise a scale version of a model vehicle body coupled to a model vehicle chassis. The model vehicle chassis contains the electronics, batteries, and servos required for operating an RC model vehicle. The model vehicle body must be removed in order to activate and deactivate the Electronic Speed Control (ESC), or to charge, replace, or connect a battery pack. And during operation, the model vehicle body must remain securely coupled to the model vehicle chassis while the vehicle is run in a variety of conditions and circumstances.

[0017] RC model vehicles typically comprise mounting posts coupled to a model vehicle chassis with protruding pins located at the top of each of the posts. In use, the mounting posts are typically vertical relative to the horizontal model vehicle chassis. The model vehicle body is provided with a number of pin holes corresponding to the protruding pins. Each of the protruding pins include clip holes and body support pads.

[0018] In order to secure a model vehicle body to a model vehicle chassis, the model vehicle body lowered vertically over the mounting posts and the protruding pins. The protruding pins pass through the corresponding pin holes until the interior of the model vehicle body rests on the body support pads. The protruding pins extend through the model vehicle body to the point where the clip holes are located external to the model vehicle body.

[0019] Clips are then inserted into the pins holes provided in the protruding pins, retaining the model vehicle body in position relative to the model vehicle chassis.

[0020] Referring generally to FIG. 1, this figure shows an embodiment of a model vehicle 100 including a transparent model vehicle body 200 and a model vehicle chassis 300. The model vehicle 100 further comprises a body mounting system that includes a first mount 400 and a second mount 500. The first mount 400 and the second mount 500 will be described later in more detail. FIG. 1 shows the model vehicle body 200 and the model vehicle chassis 300 in their assembled, ready to operate configuration, with both the first mount 400 and the second mount 500 in releasably coupled configurations.

[0021] Turning now to FIG. 2, this figure shows an exemplary embodiment of the model vehicle 100 as shown in FIG. 1, but in a partially opened configuration. At the point shown in FIG. 2, the first mount 400 has been releasably coupled to the model vehicle chassis 300 via a

latch, and the second mount 500 is open or uncoupled. In order to be able to operate the model vehicle 100, the model vehicle body 200 would have to be rotated in a clockwise manner until the second mount 500 is releasably coupled with the model vehicle chassis 300 via a latch.

[0022] Also shown in this exemplary embodiment is an auxiliary mount 600. The auxiliary mount 600 in this case comprises auxiliary mounting posts 610, protruding pins 620, clips 630, and body support pads 640. Other embodiments may not have this auxiliary mount 600 depending upon the application. In some embodiments, the stiffness and type of model vehicle body 200 and model vehicle chassis 300 may be enough to only use a first mount 400 and a second mount 500.

[0023] In order to releasably couple the model vehicle body 200 to the auxiliary mounting posts 610, the clips 630 are removed from the protruding pins 620. The protruding pins 620 extend through the mounting holes (not visible in this view) of the model vehicle body 200 until an interior surface of the model vehicle body 200 rests upon the body support pads 640. The model vehicle body 200 is releasably secured in operational position by inserting clips 630 through the protruding pins 620.

[0024] Referring now to FIG. 3, this figure shows a lower, rear, right enlarged perspective assembly view of the model vehicle body 200, the model vehicle chassis 300, and the first mount 400. The first mount 400 includes the first body mount 460 and the first chassis mount 410. The first body mount 460 is pivotally coupled to the model vehicle body 200 and the first chassis mount 410 is fixedly coupled to the model vehicle chassis 300.

[0025] Although the first body mount 460 is shown as being pivotally coupled to the model vehicle body and the first chassis mount 410 is shown as being fixedly coupled to the model vehicle chassis 300, the pivoting and fixed nature of these mounts could be reversed and the pivot provided between the model vehicle chassis 300 and the first chassis mount 410. For the purposes of illustrating a general embodiment of this disclosure, the description will refer to the current configuration as representative of other configurations.

[0026] Also, while the first body mount 460 and the first chassis mount 410 are illustrated at the front of the model vehicle body and the model vehicle chassis, they could have easily been located at the opposite ends of both of these assemblies. Both the location of the first mount and whether the pivot is provided between the model vehicle body or the model vehicle chassis are matters of application and should both be within the scope of the current disclosure.

[0027] The first mount 400 in this figure is shown prior to the releasable coupling of first body mount 460 with the first chassis mount 410. At the moment illustrated in FIG. 3, the model vehicle body 200 is completely separate from the model vehicle chassis 300. In order to attach the model vehicle body 200 to the model vehicle chassis 300, the first body mount 460 is inserted into the first chassis

mount 410 in a first direction 490 as shown by the arrows. Again, for the purposes of illustration for this example, the arrows represent an exemplary horizontal direction for the first direction 490, but the teachings of this disclosure should not be limited to this single illustrative orientation.

[0028] The first body mount 460 further includes first latches 480A and 480B. The first latches 480A and 480B each have a retention tab 485. During the connection of the first body mount 460 to the first chassis mount 410, the first latches 480A and 480B are inserted into a first latch receptacle 420 of the first chassis mount 410.

[0029] When the first latches 480A and 480B are fully inserted into the first latch receptacle 420, the retention tabs 485 resiliently interact with the side walls of the first latch receptacle 420 to inhibit the removal of the first body mount 460 from the first chassis mount 410. In order to remove the first body mount 460 from the first chassis mount 410, the two first latches 480A and 480B are resiliently bent towards one another, thereby releasing the retention tabs 485 from the side walls of the first latch receptacle 420.

[0030] While a snap fit latching mechanism is shown as the configuration for the releasable coupling of the first body mount 460 to the first chassis mount 410, other releasable configurations may be used by a person of skill in the art in accordance with the teachings of this disclosure. For example, single first latches, toggle draw latches, and butterfly twist latches, can be used among others.

[0031] In addition to first latches 480A and 480B, the first body mount 460 also comprises first supports 470A and 470B. While two first latches 480A and 480B and two first supports 470A and 470B are shown in this illustrative example, the actual number and configuration of the latches and supports may be selected according to the particular application of the first mount 400.

[0032] First supports 470A and 470B differ from the first latches 480A and 480B in that they are relatively more rigid and configured to provide strength and stability to the releasable connection between the first body mount 460 and the first chassis mount 410. For this example, the first supports 470A and 470B are shown as rectangular protrusions with a square cross-section. As stated previously, the actual configuration and geometry of the first supports 470A and 470B may be selected based upon a specific application. For example, the first supports 470A and 470B may be conical, cylindrical, polygonal, or made of different materials among others.

[0033] The first supports 470A and 470B are configured to securely fit within a corresponding number of first support receptacles 430A and 430B (only first support receptacle 430A is visible in this view). The first supports 470A and 470B are inserted into the first support receptacles 430A and 430B in the first direction 490 and provide additional strength and support for the first body mount 460 and first chassis mount 410 about a first plane perpendicular to the first direction 490. For a model

vehicle 100 such as the one described, the first supports 470A and 470B engagement with the first support receptacles 430A and 430B will have their greatest resistance to forces impacting the model vehicle body 200 relative to the model vehicle chassis 300 in a first plane that extends vertically and from either side (e.g., perpendicular) to the first direction 490.

[0034] Also shown in FIG. 3 is a body support mechanism 700. In some cases the model vehicle body 200 will be rigid or durable enough to allow the first body mount 460 to directly attach to an end of the model vehicle body 200. However, in other cases, a model vehicle body 200 for a model vehicle 100 may be made of a lightweight, thin plastic material. In these cases, an additional body support mechanism 700 may be used to strengthen or reinforce the model vehicle body 200, as well as to distribute the loading from either the first and/or second mount 400, 500 across or about the model vehicle body 200.

[0035] The body support mechanism 700 may include one or both of a separate front body support mechanism 740 and a rear body support mechanism 750 (not visible in this figure). As described in the current disclosure, one body support mechanism 700 may extend along the length of the model vehicle body 200 and tie the first mount 400 to the second mount 500 via a body support structure 760. As seen in FIG. 3, first body mount 460 is pivotally coupled to first body support mechanism 740 via a first pivoting coupling 465.

[0036] The first pivoting coupling 465 allows the first body support mechanism 740 and the attached model vehicle body 200 to pivot relative to the front body mount 460. While the illustrated exemplary first pivoting coupling 465 uses two hinges, other types of coupling the first body mount 460 to the first body support mechanism 740 may be used. For example, in some cases a single hinged connection or a resiliently bendable connection made via a resiliently deformable flexible material such as an elastomer silicone rubber or Ethylene Propylene Diene Monomer EPDM, among others, may be used for the pivotal couple.

[0037] Since this illustrative embodiment has a single body support mechanism 700 coupling the first mount 400 to the second mount 500, a portion of the body support structure 760 is attached to the first body support mechanism 740 and shown in this view. The model vehicle body 200 is fixedly coupled to the body support mechanism 700 in an appropriate manner, i.e., mechanical fasteners, adhesive, and plastic welding, among others.

[0038] Referring generally to FIG. 4, this figure shows the second mount 500 in an uncoupled, open configuration prior to coupling the second body mount 560 to the second chassis mount 510. An exemplary illustration showing the second body mount 500 in a coupled, closed configuration is seen in FIG. 5. The model vehicle body 200 is pivotally coupled to the model vehicle chassis 300 via the first mount 400. In order to close and couple the

model vehicle body 200 to the model vehicle chassis 300 via the second mount 500, the model vehicle body 200 is rotated about the pivot point in the first mount 400 so that the second body mount 560 engages the second chassis mount 510 in a second direction 590 (shown by the arrows in FIG. 4).

[0039] Although the arrows in FIG. 4 describe a radial motion, for the purposes of simplifying this disclosure the second direction 590 is determined at the approximate point of rotation of the model vehicle body 200 when the second body mount 560 initiates engagement with the second chassis mount 510. Generally at this point during the rotation, the second direction 590 is substantially perpendicular (e.g., in the vertical direction to within a few degrees) to the first direction 490.

[0040] Having two separate mounting directions, such as the first direction 490 (e.g., approximately horizontal) and the second direction 590 (e.g., approximately vertical), results in the first mount 400 and the second mount 500 supporting the mounting of the model vehicle body 200 relative to the model vehicle chassis 300 along different directions. For example, the second mount 500 may be strengthened and reinforced against forces acting perpendicular to the second direction 590, or in a second, substantially horizontal plane.

[0041] As shown in these figures, the second mount 500 includes a second body mount 560 and a second chassis mount 510. The second body mount 560 comprises second supports 570A and 570B, and a second latch 580. The second chassis mount 510 comprises a corresponding number of second support receptacles 530A and 530B, and a second latch receptacle 520. The model vehicle body 200 is inhibited from rotating relative to the model vehicle chassis 300 once the second latch 580 is releasably coupled with the second latch receptacle 520.

[0042] Engaging the second latch 580 to the second latch receptacle 520 includes inserting the second latch 580 until a second retention tab 585 engages with an edge of a sidewall of the second latch receptacle 520 (more readily seen in FIG. 5) in a snap fit connection. In the example shown, in order to release the latching mechanism the second latch 580 would be resiliently moved towards the rear of the model vehicle 100, allowing the second retention tab 585 to move out of engagement with the side wall of the second latch receptacle 520.

[0043] As in the first mount 400, while a snap fit latching mechanism is shown to releasably couple the second body mount 560 to the second chassis mount 510, other releasable configurations may be used by a person of skill in the art in accordance with the teachings of this disclosure. For example, two second latches, toggle draw latches, and butterfly twist latches, can be used among others.

[0044] The second body mount 560 further includes two second supports 570A and 570B. Two second supports 570A and 570B are illustrated in this exemplary

embodiment, however, the actual number and configuration of the latches and supports may be one or more than two and may be selected according to the particular application of the second mount 500.

[0045] The two second supports 570A and 570B may be relatively more rigid than the second latch 580 and configured to increase the strength or robustness of a latched second mount 500. The two second supports 570A and 570B are shown as being rectangular protrusions with a relatively square cross-section. However, the actual configuration and number of second supports 570A, 570B may be selected based upon a specific application. For example, the second supports 570A and 570B may be conical, cylindrical, polygonal, or made of different materials, among others.

[0046] The second supports 570A and 570B are configured to fit securely within a corresponding number of second support receptacles 530A and 530 B provided in the second chassis mount 510. The second supports 570A and 570B are inserted into the second support receptacles 530A and 530B in the second direction 590 and provide additional strength and support for a coupled second mount 500 in a second plane, perpendicular to the second direction 590. For this illustrative example, the second plane is a substantially horizontal plane extending from side to side and front to back about the second direction. During operation, the resistance of the second mount 500 to the forces impacting the model vehicle body 200 relative to the model vehicle chassis 300 will be at its highest in the second plane about each of the second supports 570A and 570B.

[0047] Also shown in the figures is the second body support mechanism 750 coupled to the model vehicle body 200 and the second body mount 560. As stated previously, due to configuration and/or materials, the first body mount 460 and/or the second body mount 560 may be attached directly to the model vehicle body 200. In this case, the second body mount 560 is fixedly coupled to the second body support mechanism 750.

[0048] In this exemplary embodiment, the body support structure 760 is shown as coupling to the second body support mechanism 750. Accordingly, body support structure 760 may increase the strength and stiffness of the model vehicle body 200 and may also tie the first mount 400 to the second mount 500, potentially increasing the overall effectiveness of the first and second mounts 400, 500. However, in other embodiments, the body support structure 760 may be omitted and the first body support mechanism 740 may be independent from the second body support mechanism 750.

[0049] Elements of the embodiments have been introduced with either the articles "a" or "an." The articles are intended to mean that there are one or more of the elements. The terms "including" and "having" are intended to be inclusive such that there may be additional elements other than the elements listed. The term "or" when used with a list of at least two elements is intended to mean any element.

Claims

1. A body mounting system for a model vehicle comprising:

a first mount (400) for pivotally connecting to a first end of a model vehicle body (200); and a second mount (500) for connecting to a second end of the model vehicle body (200),

characterised in that:

the first mount (400) is configured to releasably couple the first end of the model vehicle body (200) to a model vehicle chassis (300) in a first direction (490); the second mount (500) is configured to releasably couple the second end of the model vehicle body (200) to the model vehicle chassis (300) in a second direction (590), the second direction (590) different from the first direction (490); and when the body mounting system is in use, the model vehicle body (200) is arranged to be pivoted about a rotation point and releasably coupled to the model vehicle chassis (300) via the second mount (500).

2. The body mounting system according to claim 1, wherein the second end of the model vehicle body (300) is located opposite to the first end.

3. The body mounting system according to any preceding claim, wherein the first direction (490) is substantially perpendicular to the second direction (590).

4. The body mounting system according to any preceding claim, wherein:

the first mount (400) comprises a first body mount (460) and a first chassis mount (410); the second mount (500) comprises a second body mount (560) and a second chassis mount (510);

the first body mount (460) is configured to releasably couple to the first chassis mount (410) in the first direction (490), and the first body mount (460) is configured to be pivotally coupled to the model vehicle body (200); and the second body mount (560) is configured to releasably couple to the second chassis mount (510) in the second direction (590).

5. The body mounting system according to claim 4, wherein the first body mount (460) comprises a hinge configured to pivotally couple the first body mount (460) to the model vehicle body (200).

6. The body mounting system according to any preceding claim, wherein at least one of the first or second mounts (400, 500) is configured to releasably couple the corresponding first or second end of the model vehicle body (200) to the model vehicle chassis (300) via a snap fit connection. 5
7. The body mounting system according to claim 6 when dependent on claim 4 or 5, wherein: 10
- the first body mount (460) comprises a first latch (480A, 480B) and the first chassis mount (410) comprises a first latch receptacle (420); and/or the second body mount (560) comprises a second latch (580) and the second chassis mount (510) comprises a second latch receptacle (520), and the snap fit connection comprises:
- the first latch (480A, 480B) and the first latch receptacle (420); and/or 20
- the second latch (580) and the second latch receptacle (520),
- and optionally wherein at least one of the first latch (480A, 480B) and the second latch (580) comprises a resilient latch comprising a retention tab (485, 585). 25
8. The body mounting system according to any preceding claim, wherein, when in use: 30
- the first mount (400) is arranged to be reinforced by first supports (470A, 470B) about a first plane substantially perpendicular to the first direction (490); and/or 35
- the second mount (500) is arranged to be reinforced by second supports (570A, 570B) about a second plane substantially perpendicular to the second direction (590). 40
9. The body mounting system according to claim 8 when dependent on claim 4, 5 or 7, wherein: 45
- the first body mount (460) comprises the first support (470A, 470B) and the first chassis mount (410) comprises a first support receptacle (430A, 430B); and/or
- the second body mount (560) comprises the second support (570A, 570B) and the second chassis mount (510) comprises a second support receptacle (530A, 530B). 50
10. The body mounting system according to claim 9, wherein: 55
- the first support (470A, 470B) and the first support receptacle (430A, 430B) are configured to
- constrain the first body mount (460) relative to the first chassis mount (410) from moving about the first plane perpendicular to the first direction (490); and/or
- the second support (570A, 570B) and the second support receptacle (530A, 530B) are configured to constrain the second body mount (560) relative to the second chassis mount (510) from moving about the second plane perpendicular to the second direction (590).
11. A model vehicle (100) comprising:
- a model vehicle chassis (300);
- a model vehicle body (200); and
- the body mounting system according to any preceding claim configured to releasably couple the model vehicle body (200) to the model vehicle chassis (300).
12. The model vehicle (100) according to claim 11, wherein the model vehicle body (200) further comprises a body support mechanism (700), and:
- a first mount (400) of the body mounting system is configured to be pivotally connected to the model vehicle body (200) via the body support mechanism (700);
- a second mount (500) of the body mounting system is configured to be connected to the model vehicle body (200) via the body support mechanism (700); and/or
- the body support mechanism (700) is configured to couple the first mount (400) to the second mount (500) of the body mounting system.
13. The model vehicle (100) according to claim 12, wherein the first mount (400) is configured to be pivotally connected via a resiliently flexible hinge.
14. The model vehicle (100) according to claim 11, 12 or 13, wherein the model vehicle chassis (300) further comprises an auxiliary mount (600) configured to be fixedly coupled to the model vehicle chassis (300) and releasably coupled to the model vehicle body (200).
15. The model vehicle (100) according to claim 14, wherein the auxiliary mount (600) comprise posts (610), and wherein the model vehicle body (200) is configured to be releasably coupled to the model vehicle chassis (300) via clips (630) inserted into the posts (610).

Patentansprüche

1. Karosseriemontagesystem für ein Modellfahrzeug, umfassend:

eine erste Halterung (400) zum schwenkbaren Verbinden mit einem ersten Ende einer Modellfahrzeugkarosserie (200); und
eine zweite Halterung (500) zum Verbinden mit einem zweiten Ende der Modellfahrzeugkarosserie (200),

dadurch gekennzeichnet, dass:

die erste Halterung (400) dazu konfiguriert ist, das erste Ende der Modellfahrzeugkarosserie (200) in einer ersten Richtung (490) lösbar mit einem Modellfahrzeugchassis (300) zu koppeln;
die zweite Halterung (500) dazu konfiguriert ist, das zweite Ende der Modellfahrzeugkarosserie (200) in einer zweiten Richtung (590) lösbar mit dem Modellfahrzeugchassis (300) zu koppeln, wobei sich die zweite Richtung (590) von der ersten Richtung (490) unterscheidet; und
wenn das Karosseriemontagesystem in Gebrauch ist, die Modellfahrzeugkarosserie (200) dazu angeordnet ist, um einen Drehpunkt geschwenkt und über die zweite Halterung (500) lösbar mit dem Modellfahrzeugchassis (300) gekoppelt zu werden.

2. Karosseriemontagesystem nach Anspruch 1, wobei sich das zweite Ende der Modellfahrzeugkarosserie (300) gegenüber dem ersten Ende befindet.

3. Karosseriemontagesystem nach einem der vorhergehenden Ansprüche, wobei die erste Richtung (490) im Wesentlichen senkrecht zur zweiten Richtung (590) verläuft.

4. Karosseriemontagesystem nach einem der vorhergehenden Ansprüche, wobei:

die erste Halterung (400) eine erste Karosseriehalterung (460) und eine erste Chassishalterung (410) umfasst;
die zweite Halterung (500) eine zweite Karosseriehalterung (560) und eine zweite Chassishalterung (510) umfasst;
die erste Karosseriehalterung (460) dazu konfiguriert ist, in der ersten Richtung (490) lösbar mit der ersten Chassishalterung (410) zu koppeln, und die erste Karosseriehalterung (460) dazu konfiguriert ist, schwenkbar mit der Modellfahrzeugkarosserie (200) gekoppelt zu werden; und
die zweite Karosseriehalterung (560) dazu konfiguriert ist, in der zweiten Richtung (590) lösbar

mit der zweiten Chassishalterung (510) zu koppeln.

5. Karosseriemontagesystem nach Anspruch 4, wobei die erste Karosseriehalterung (460) ein Scharnier umfasst, das dazu konfiguriert ist, die erste Karosseriehalterung (460) schwenkbar mit der Modellfahrzeugkarosserie (200) zu koppeln.

6. Karosseriemontagesystem nach einem der vorhergehenden Ansprüche, wobei mindestens eine von der ersten oder zweiten Halterung (400, 500) dazu konfiguriert ist, das entsprechende erste oder zweite Ende der Modellfahrzeugkarosserie (200) über eine Schnappverbindung lösbar mit dem Modellfahrzeugchassis (300) zu koppeln.

7. Karosseriemontagesystem nach Anspruch 6, wenn von Anspruch 4 oder 5 abhängig, wobei:

die erste Karosseriehalterung (460) einen ersten Riegel (480A, 480B) umfasst und die erste Chassishalterung (410) eine erste Riegelaufnahme (420) umfasst; und/oder
die zweite Karosseriehalterung (560) einen zweiten Riegel (580) umfasst und die zweite Chassishalterung (510) eine zweite Riegelaufnahme (520) umfasst,
und die Schnappverbindung umfasst:

den ersten Riegel (480A, 480B) und die erste Riegelaufnahme (420); und/oder
den zweiten Riegel (580) und die zweite Riegelaufnahme (520),
und optional wobei mindestens einer von dem ersten Riegel (480A, 480B) und dem zweiten Riegel (580) einen elastischen Riegel umfasst, der eine Haltetasche (485, 585) umfasst.

8. Karosseriemontagesystem nach einem der vorhergehenden Ansprüche, wobei in Gebrauch:

die erste Halterung (400) dazu angeordnet ist, durch erste Stützen (470A, 470B) um eine erste Ebene herum verstärkt zu werden, die im Wesentlichen senkrecht zur ersten Richtung (490) steht; und/oder
die zweite Halterung (500) dazu angeordnet ist, durch zweite Stützen (570A, 570B) um eine zweite Ebene herum verstärkt zu werden, die im Wesentlichen senkrecht zur zweiten Richtung (590) steht.

9. Karosseriemontagesystem nach Anspruch 8, wenn von Anspruch 4, 5 oder 7 abhängig, wobei:

die erste Karosseriehalterung (460) die erste

Stütze (470A, 470B) umfasst und die erste Chassishalterung (410) eine erste Stützaufnahme (430A, 430B) umfasst; und/oder die zweite Karosseriehalterung (560) die zweite Stütze (570A, 570B) umfasst und die zweite Chassishalterung (510) eine zweite Stützaufnahme (530A, 530B) umfasst.

10. Karosseriemontagesystem nach Anspruch 9, wobei:

die erste Stütze (470A, 470B) und die erste Stützaufnahme (430A, 430B) dazu konfiguriert sind, die erste Karosseriehalterung (460) relativ zur ersten Chassishalterung (410) daran hindern, sich um die erste Ebene herum zu bewegen, die senkrecht zur ersten Richtung (490) steht; und/oder die zweite Stütze (570A, 570B) und die zweite Stützaufnahme (530A, 530B) dazu konfiguriert sind, die zweite Karosseriehalterung (560) relativ zur zweiten Chassishalterung (510) daran zu hindern, sich um die zweite Ebene herum zu bewegen, die senkrecht zur zweiten Richtung (590) steht.

11. Modellfahrzeug (100), umfassend:

ein Modellfahrzeugchassis (300);
eine Modellfahrzeugkarosserie (200); und
das Karosseriemontagesystem nach einem der vorhergehenden Ansprüche, das dazu konfiguriert ist, die Modellfahrzeugkarosserie (200) lösbar mit dem Modellfahrzeugchassis (300) zu koppeln.

12. Modellfahrzeug (100) nach Anspruch 11, wobei die Modellfahrzeugkarosserie (200) ferner einen Karosseriestützmechanismus (700) umfasst, und:

eine erste Halterung (400) des Karosseriemontagesystems dazu konfiguriert ist, über den Karosseriestützmechanismus (700) schwenkbar mit der Modellfahrzeugkarosserie (200) verbunden zu werden;
eine zweite Halterung (500) des Karosseriemontagesystems dazu konfiguriert ist, über den Karosseriestützmechanismus (700) mit der Modellfahrzeugkarosserie (200) verbunden zu werden; und/oder
der Karosseriestützmechanismus (700) dazu konfiguriert ist, die erste Halterung (400) mit der zweiten Halterung (500) des Karosseriemontagesystems zu koppeln.

13. Modellfahrzeug (100) nach Anspruch 12, wobei die erste Halterung (400) dazu konfiguriert ist, über ein elastisch flexibles Scharnier schwenkbar verbunden zu werden.

14. Modellfahrzeug (100) nach Anspruch 11, 12 oder 13, wobei das Modellfahrzeugchassis (300) ferner eine Hilfshalterung (600) umfasst, die dazu konfiguriert ist, fest mit dem Modellfahrzeugchassis (300) gekoppelt zu werden und lösbar mit der Modellfahrzeugkarosserie (200) gekoppelt zu werden.

15. Modellfahrzeug (100) nach Anspruch 14, wobei die Hilfshalterung (600) Pfosten (610) umfasst, und wobei die Modellfahrzeugkarosserie (200) dazu konfiguriert ist, über in die Pfosten (610) eingesetzte Klammern (630) lösbar mit dem Modellfahrzeugchassis (300) gekoppelt zu werden.

Revendications

1. Système de montage de carrosserie pour un véhicule modèle comprenant :

une première monture (400) destinée à être raccordée de manière pivotante à une première extrémité d'une carrosserie de véhicule modèle (200) ; et

une deuxième monture (500) destinée à être raccordée à une deuxième extrémité de la carrosserie de véhicule modèle (200),

caractérisé en ce que :

la première monture (400) est configurée pour coupler de manière amovible la première extrémité de la carrosserie de véhicule modèle (200) à un châssis de véhicule modèle (300) dans une première direction (490) ;

la deuxième monture (500) est configurée pour coupler de manière amovible la seconde extrémité de la carrosserie de véhicule modèle (200) au châssis de véhicule modèle (300) dans une seconde direction (590), la seconde direction (590) étant différente de la première direction (490) ; et lorsque le système de montage de carrosserie est utilisé, la carrosserie de véhicule modèle (200) est conçue pour pivoter autour d'un point de rotation et se coupler de manière amovible au châssis de véhicule modèle (300) via la seconde monture (500).

2. Système de montage de carrosserie selon la revendication 1, dans lequel la seconde extrémité de la carrosserie de véhicule modèle (300) est située à l'opposé de la première extrémité.

3. Système de montage de carrosserie selon l'une quelconque des revendications précédentes, dans lequel la première direction (490) est sensiblement perpendiculaire à la seconde direction (590).

4. Système de montage de carrosserie selon l'une quelconque des revendications précédentes, dans lequel :

la première monture (400) comprend une première monture de carrosserie (460) et une première monture de châssis (410) ;
la deuxième monture (500) comprend une deuxième monture de carrosserie (560) et une deuxième monture de châssis (510) ;
la première monture de carrosserie (460) est configurée pour se coupler de manière amovible à la première monture de châssis (410) dans la première direction (490), et la première monture de carrosserie (460) est configurée pour se coupler de manière pivotante à la carrosserie de véhicule modèle (200) ; et
la deuxième monture de carrosserie (560) est configurée pour se coupler de manière amovible à la deuxième monture de châssis (510) dans la seconde direction (590).

5. Système de montage de carrosserie selon la revendication 4, dans lequel la première monture de carrosserie (460) comprend une charnière configurée pour coupler de manière pivotante la première monture de carrosserie (460) à la carrosserie de véhicule modèle (200).

6. Système de montage de carrosserie selon l'une quelconque des revendications précédentes, dans lequel au moins l'une des première ou deuxième montures (400, 500) est configurée pour coupler de manière amovible la première ou deuxième extrémité correspondante de la carrosserie de véhicule modèle (200) au châssis de véhicule modèle (300) via une connexion à encliquetage.

7. Système de montage de carrosserie selon la revendication 6 lorsqu'elle dépend de la revendication 4 ou 5, dans lequel :

la première monture de carrosserie (460) comprend un premier loquet (480A, 480B) et la première monture de châssis (410) comprend un premier réceptacle de loquet (420) ; et/ou
la deuxième monture de carrosserie (560) comprend un deuxième loquet (580) et la deuxième monture de châssis (510) comprend un deuxième réceptacle de loquet (520),
et la connexion à encliquetage comprend :

le premier loquet (480A, 480B) et le premier réceptacle de loquet (420) ; et/ou
le deuxième loquet (580) et le deuxième réceptacle de loquet (520),
et éventuellement dans lequel au moins l'un du premier loquet (480A, 480B) et du deu-

xième loquet (580) comprend un loquet élastique comprenant une languette de retenue (485, 585).

8. Système de montage de carrosserie selon l'une quelconque des revendications précédentes, dans lequel, lors de l'utilisation :

la première monture (400) est agencée pour être renforcée par des premiers supports (470A, 470B) autour d'un premier plan sensiblement perpendiculaire à la première direction (490) ; et/ou
la deuxième monture (500) est agencée pour être renforcée par des deuxième supports (570A, 570B) autour d'un deuxième plan sensiblement perpendiculaire à la deuxième direction (590).

9. Système de montage de carrosserie selon la revendication 8 lorsqu'elle dépend de la revendication 4, 5 ou 7, dans lequel :

la première monture de carrosserie (460) comprend le premier support (470A, 470B) et la première monture de châssis (410) comprend un premier réceptacle de support (430A, 430B) ; et/ou
la deuxième monture de carrosserie (560) comprend le deuxième support (570A, 570B) et la deuxième monture de châssis (510) comprend un deuxième réceptacle de support (530A, 530B).

10. Système de montage de carrosserie selon la revendication 9, dans lequel :

le premier support (470A, 470B) et le premier réceptacle de support (430A, 430B) sont configurés pour contraindre la première monture de carrosserie (460) par rapport à la première monture de châssis (410) à se déplacer autour du premier plan perpendiculaire à la première direction (490) ; et/ou
le deuxième support (570A, 570B) et le deuxième réceptacle de support (530A, 530B) sont configurés pour contraindre la deuxième monture de carrosserie (560) par rapport à la deuxième monture de châssis (510) à se déplacer autour du deuxième plan perpendiculaire à la deuxième direction (590).

11. Véhicule modèle (100) comprenant :

un châssis de véhicule modèle (300) ;
une carrosserie de véhicule modèle (200) ; et
le système de montage de carrosserie selon l'une quelconque des revendications précéden-

tes configuré pour coupler de manière amovible la carrosserie du véhicule modèle (200) au châssis du véhicule modèle (300).

- 12.** Véhicule modèle (100) selon la revendication 11, dans lequel la carrosserie de véhicule modèle (200) comprend en outre un mécanisme de support de carrosserie (700), et :

une première monture (400) du système de montage de carrosserie est configurée pour se raccorder de manière pivotante à la carrosserie de véhicule modèle (200) via le mécanisme de support de carrosserie (700) ;
 une deuxième monture (500) du système de montage de carrosserie est configurée pour se raccorder à la carrosserie de véhicule modèle (200) via le mécanisme de support de carrosserie (700) ; et/ou
 le mécanisme de support de carrosserie (700) est configuré pour coupler la première monture (400) à la deuxième monture (500) du système de montage de carrosserie.

- 13.** Véhicule modèle (100) selon la revendication 12, dans lequel la première monture (400) est configurée pour se raccorder de manière pivotante via une charnière élastiquement souple.

- 14.** Véhicule modèle (100) selon la revendication 11, 12 ou 13, dans lequel le châssis de véhicule modèle (300) comprend en outre une monture auxiliaire (600) configurée pour se coupler de manière fixe au châssis de véhicule modèle (300) et se coupler de manière amovible à la carrosserie de véhicule modèle (200).

- 15.** Véhicule modèle (100) selon la revendication 14, dans lequel la monture auxiliaire (600) comprend des montants (610), et dans lequel la carrosserie de véhicule modèle (200) est configurée pour se coupler de manière amovible au châssis de véhicule modèle (300) via des clips (630) insérés dans les montants (610).

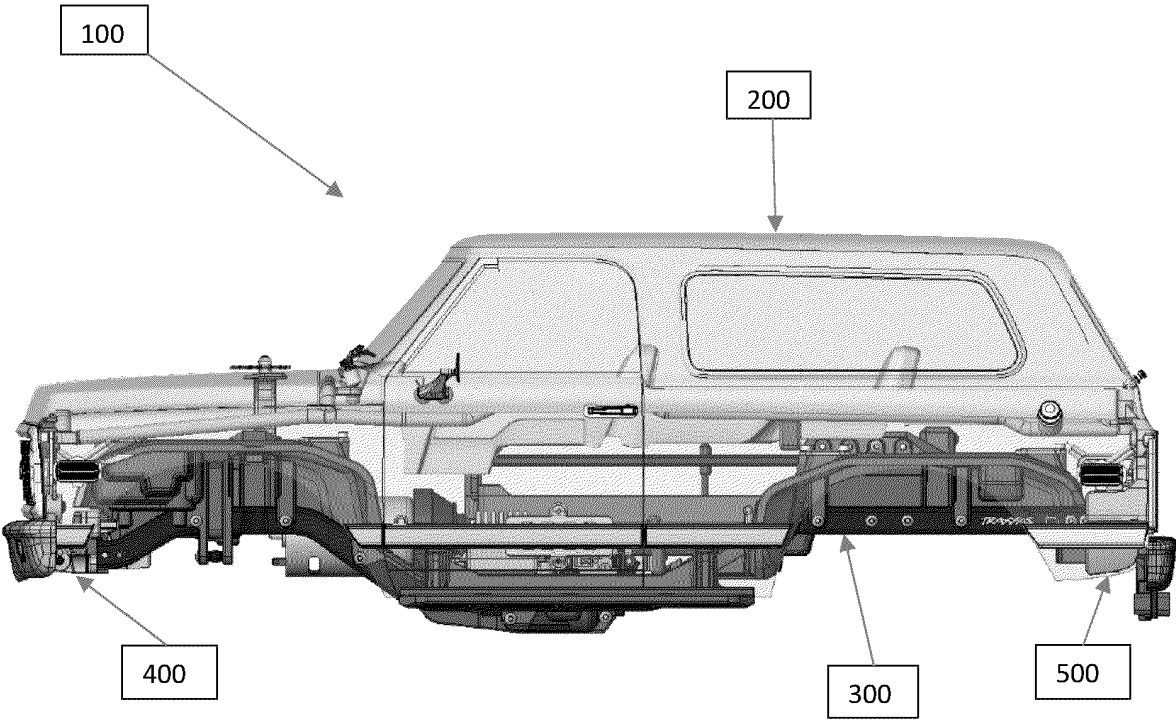


FIG. 1

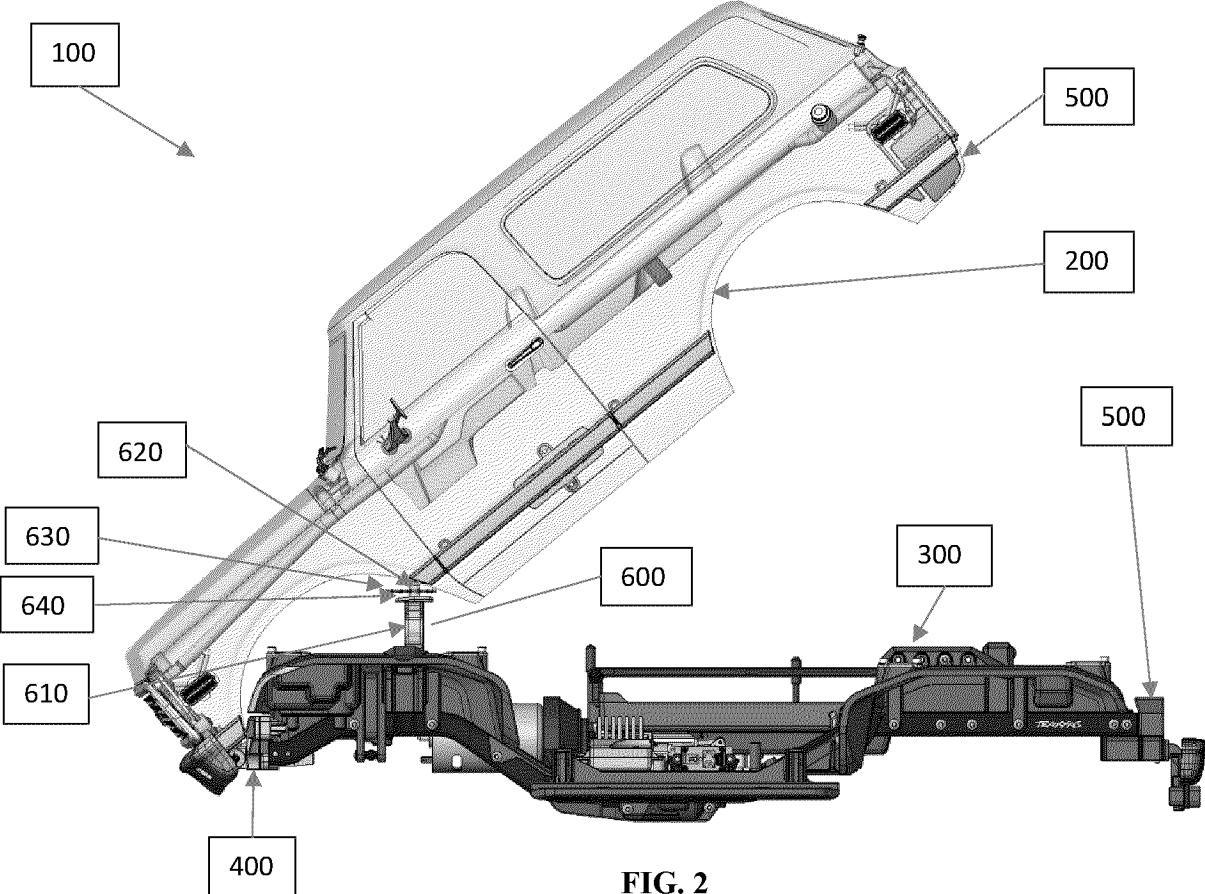


FIG. 2

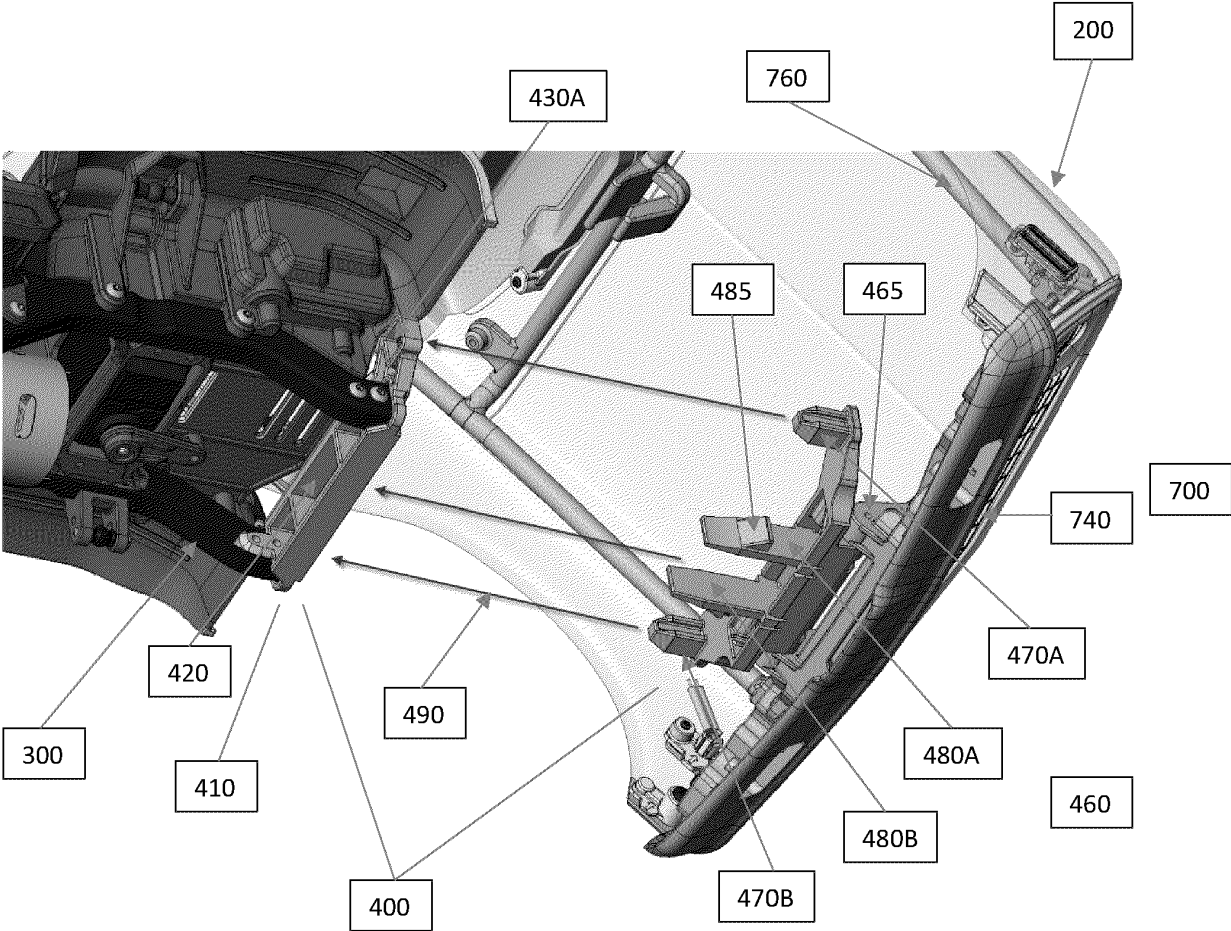


FIG. 3

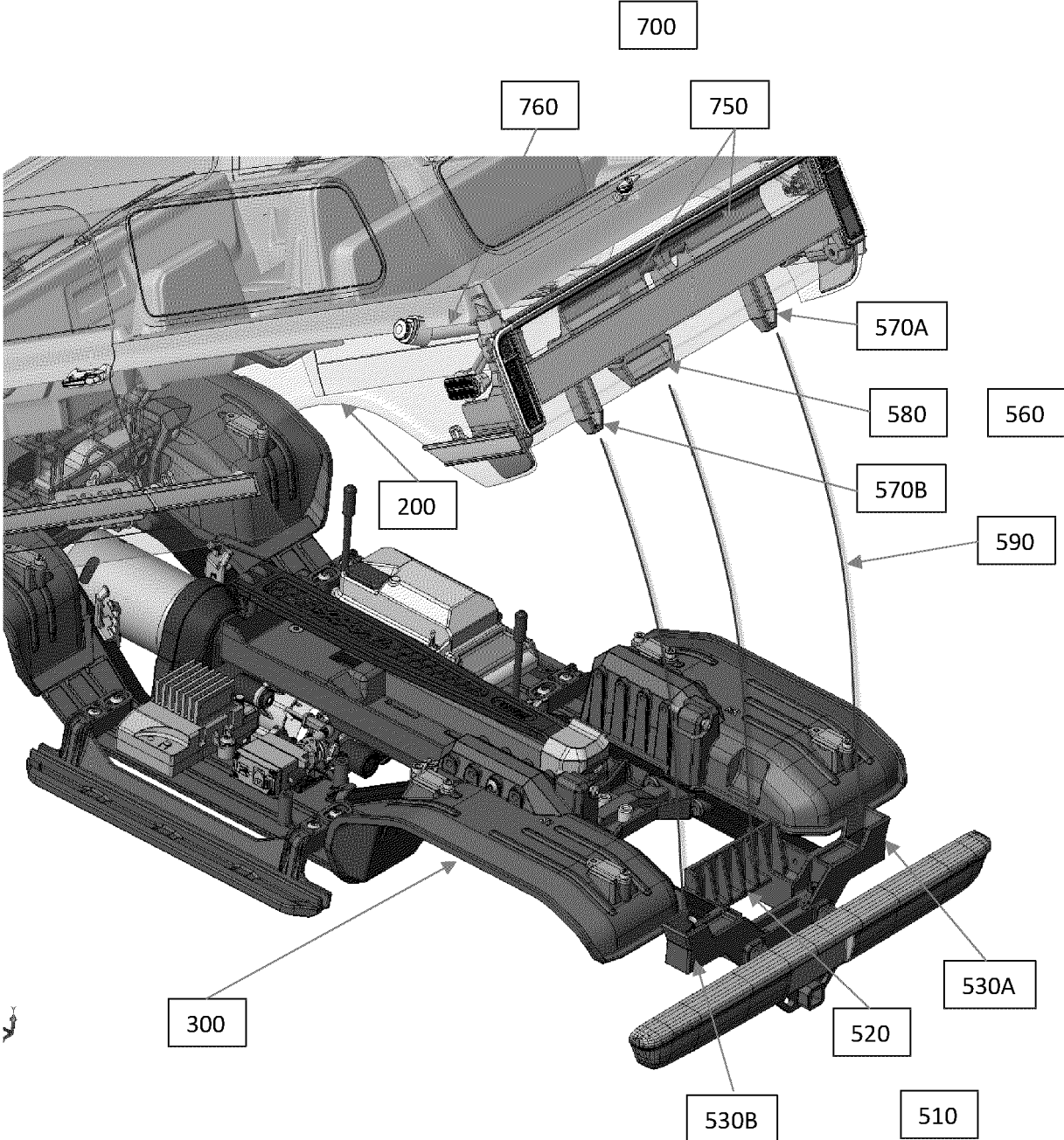


FIG. 4

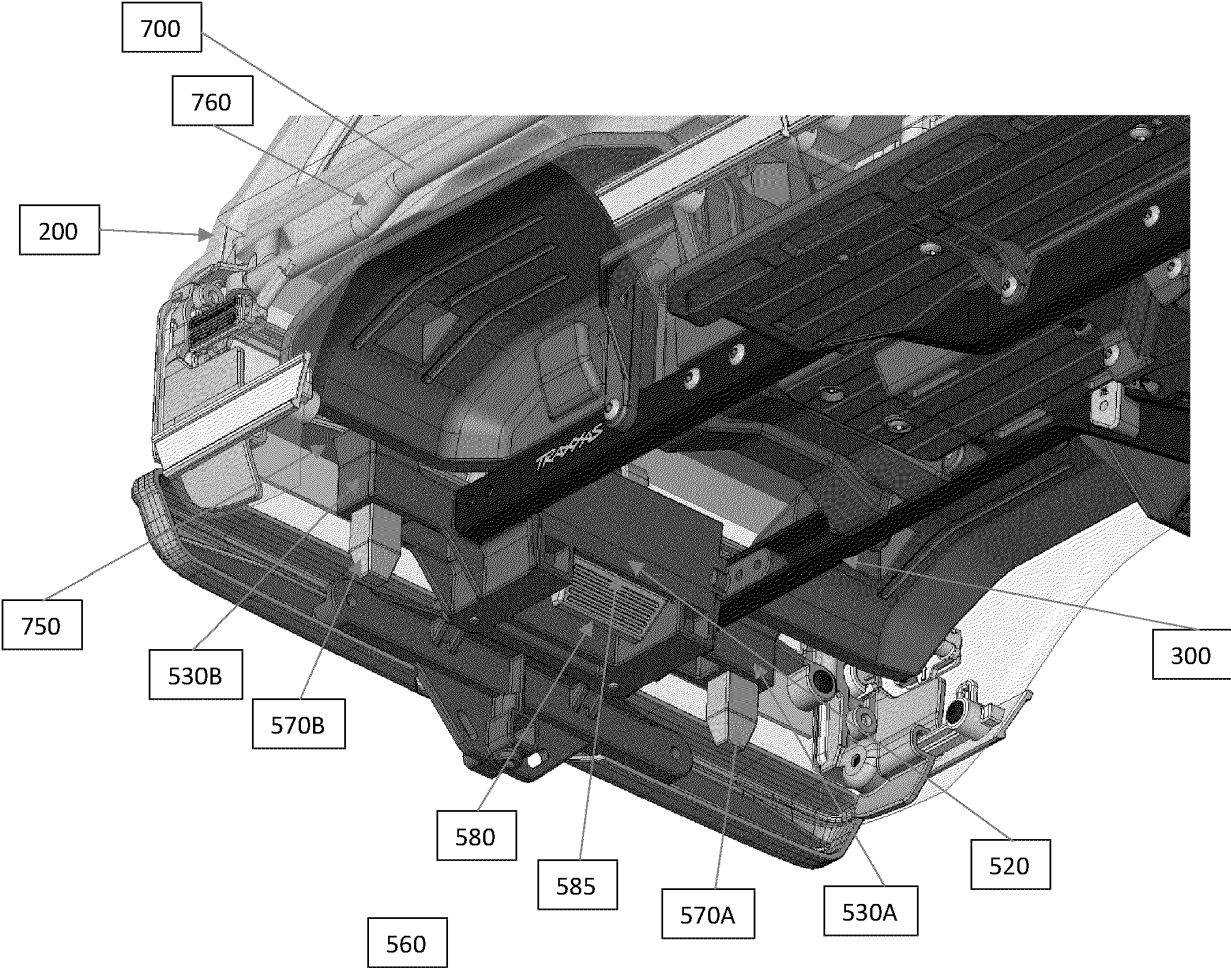


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 3653149 A1 [0004]
- US 2141267 A1 [0005]