



- (51) International Patent Classification:
B62D 25/08 (2006.01) *B60R 21/34* (2011.01)
- (21) International Application Number:
PCT/EP2015/051260
- (22) International Filing Date:
22 January 2015 (22.01.2015)
- (25) Filing Language: English
- (26) Publication Language: English
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- (81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

- (54) Title: RADIATOR SUPPORT COVER.

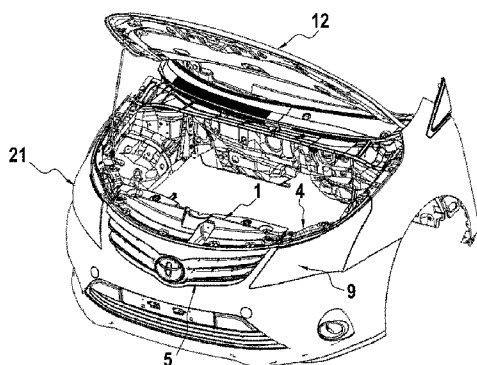


FIG.1A

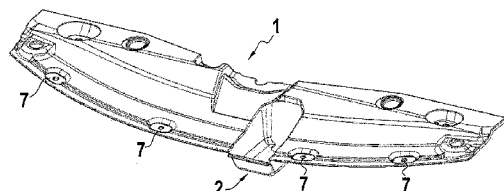


FIG.1B

(57) Abstract: A radiator support cover for a vehicle is provided. The radiator support cover includes housing means separably attached to the radiator support cover and configured to permit operation of a hood lever housed at least partially within the housing means, and at least one weakening means positioned offset from the housing means and configured to encourage deformation of the second side when a force is exerted on the radiator support cover.

RADIATOR SUPPORT COVER

Field of the Disclosure

[0001] The present disclosure is related to passive devices for improving motor vehicle/pedestrian impact safety, and more particularly to a radiator support cover configured to reduce leg injuries during pedestrian impacts.

Background of the Disclosure

[0002] Vehicle safety ratings are an important factor in the design of a vehicle and can have significant impact with regard to governmental approval and decision making by purchasers of vehicles, among others.

10 [0003] When the front end of a vehicle contacts the lower extremities of a pedestrian, the legs can be rapidly accelerated up to the speed of the vehicle while the head and torso of the pedestrian remain relatively still. As the vehicle continues to move forward, the lower extremities begin to wrap around the contour of the front end of the vehicle and portions of the vehicle in contact with
15 the pedestrian may continue to exert force upon the pedestrian based the speed of the vehicle and the amount of impact energy dissipated by the vehicle itself through deformation of components (e.g., bumper, radiator support cover, hood, etc.)

[0004] In the past, car manufacturers have installed pedestrian protection
20 airbags or active hood systems to enhance the pedestrian protection features. Such active systems can be costly and difficult to design/construct.

[0005] In addition to active systems, passive designs have also been implemented. However, while such passive systems are less expensive, there is a desire to continually to improve such systems so as to reduce the possibility
25 of injury.

[0006] JP 2012-179925 discloses a radiator support upper member, an upper member deformation permission part permitting a hood lock to be moved rearward from an impact load coming from a vehicular front side. A hood lock support member or a body constituent member is provided, and
30 a support member deformation permission part permits the hood lock support member to be tilted rearward by an impact load. On a mounting part of the hood lock to the radiator support upper member is provided hood

lock separation parts for separating the hood lock to the rear lower side with the rearward movement of the hood lock and the rearward tilt of the hood lock support member from an impact.

SUMMARY OF THE DISCLOSURE

5 [0007] Currently, it remains desirable to provide vehicle structures capable of reducing impact forces with the goal of reducing injury to pedestrians during collision with a vehicle.

[0008] It has been determined that prior systems include a relatively stable (i.e., designed to stay in place permanently) and rigid radiator support cover.

10 Such stable and rigid structures may not deform upon impact and may therefore may cause increased risk of injury to a pedestrian.

[0009] Therefore, according to embodiments of the present disclosure a radiator support cover for a vehicle is provided. The radiator support cover includes housing means separably attached to the radiator support cover, e.g.,
15 integrally formed with the radiator support cover, and configured to permit operation of a hood lever housed at least partially within the housing means and at least one weakening means positioned offset from the housing means and configured to encourage deformation of the second side when a force is exerted on the radiator support cover.

20 [0010] By providing such a radiator support cover, the risk of injury upon collision with a pedestrian may be reduced, because, embodiments of the present disclosure may limit the impact force, thus limiting or preventing risk of injury.

[0011] One or more release means configured to facilitate release of one or
25 more releasable fasteners attaching the radiator support cover to a grille of the vehicle may be provided.

[0012] Such release means and releasable fasteners may further reduce the transfer of impact energy to the pedestrian by allow portions of the radiator support cover to move away from the pedestrian.

30 [0013] The one or more release means may be configured as a through-hole having at least a portion of its periphery opening into an elongated slot.

[0014] The one or more release means may be configured to receive the one or more releasable fasteners, for example, a releasable clip.

[0015] The housing means may be separably attached, e.g., integrally formed, to the radiator support cover via one or more breakable support ribs.

[0016] The weakening means may include an elongated through-hole in the structure of the radiator support cover.

5 [0017] The one or more weakening means may extend over at least 20 percent of a width of the radiator support cover, better 30 percent.

[0018] At least two weakening means may be provided in the radiator support cover.

10 [0019] The weakening means may extend along an axis from a front of the vehicle to a back of the vehicle. For example, it may extend entirely along such an axis.

[0020] According to further embodiments of the present disclosure, a vehicle comprising the radiator support cover according to any of the previously described aspects is provided.

15 [0021] According to still further embodiments of the present disclosure, a radiator support cover for a vehicle is provided. The radiator support cover includes a hood lever housing separably attached, e.g., integrally formed, to the radiator support cover and configured to permit operation of a hood lever and at least one elongated hole positioned offset from the hood lever housing and
20 configured to encourage deformation of the radiator support cover when a force is exerted on the radiator support cover.

[0022] One or more release slots configured to facilitate release of one or more fasteners attaching the radiator support cover to a grille of the vehicle may be provided.

25 [0023] The one or more release holes may comprise a through hole having at least a portion of its periphery opening into an elongated slot.

[0024] The one or more release holes may be configured to receive the one or more releasable fasteners, for example, a releasable clip.

30 [0025] The hood lever housing may be separably attached to the radiator support cover via one or more breakable support ribs.

[0026] The at least one elongated hole may be a through-hole in the structure of the radiator support cover.

[0027] The at least one elongated hole may extend over at least 20 percent of a width of the radiator support cover.

[0028] At least two elongated holes configured to encourage deformation of the radiator support cover when a force is exerted on the radiator support cover may be provided.

5 [0029] The at least one elongated hole may extend at least partially along an axis from a front of the vehicle to a back of the vehicle. For example, it may extend entirely along such an axis.

[0030] According to further embodiments of the present disclosure, a vehicle including the radiator support cover according any of the previously described aspects may be provided.

10 [0031] It is intended that combinations of the above-described elements and those within the specification may be made, except where otherwise contradictory.

[0032] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are
15 not restrictive of the disclosure, as claimed.

[0033] The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the disclosure and together with the description, serve to explain the principles thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

20 [0034] Fig. 1A shows a first exemplary view of a prior art radiator support cover installed in a vehicle;

[0035] Fig. 1B shows another exemplary view of the prior art radiator support cover of Fig. 1A;

25 [0036] Fig. 2A shows an exemplary radiator support cover according to embodiments of the present disclosure;

[0037] Fig. 2B shows an enlarged portion of the radiator support cover of Fig. 2A;

[0038] Fig. 3A shows a cross section along A-A of the view in Fig. 2B;

[0039] Fig. 3B shows a cross section along B-B of the view in Fig. 2B.

DESCRIPTION OF THE EMBODIMENTS

30 [0040] Reference will now be made in detail to exemplary embodiments of the disclosure, examples of which are illustrated in the accompanying drawings.

Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

[0041] Fig. 1A shows a first exemplary view of a prior art radiator support cover 1 installed in a vehicle while Fig. 1B shows another exemplary view of the prior art radiator support cover shown at Fig. 1A. Prior art radiator support covers 1 typically include a rigid hood lever housing 2 formed unitarily with radiator support cover 1. Such a hood lever housing 2 is intended to enable access to a hood latch (not shown in Fig. 1A) which functions to open and close hood 12.

[0042] In addition, a plurality of fastening holes 7 configured to receive fasteners (not shown), e.g., screws and/or bolts, are provided to enable such a radiator cover to be affixed to a radiator support 4 and, e.g., a grill 5 of a vehicle as shown at Fig. 1A. A first headlamp 9 is also shown for reference to designate a first side of the vehicle, while a second headlamp 21 is shown for purposes of referring to a second side of the vehicle.

[0043] As noted above, based on the rigid structure and fastening scheme of prior art radiator support covers, a force peak during pedestrian impact may be formed and a higher force may be transmitted to a pedestrian leg.

[0044] Fig. 2A shows an exemplary radiator support cover 1 according to embodiments of the present disclosure. Radiator support cover 1 may include at least one weakening hole 10, one or more release holes 6, one or more fastening holes 7, and a hood lever housing 2, among other features.

[0045] Radiator support cover 1 may be configured to provide protection for a radiator of a vehicle while also providing protection for the radiator's supporting structure 4 (e.g., from road debris and water entering from an exterior of the vehicle). As shown at Fig. 1A, depending on an engine compartment design for a particular vehicle, radiator support cover 1 may be installed to be offset, more or less, toward a first side of a vehicle (in the present case, toward first head lamp 9), e.g., to allow for the presence of other components on a second side of vehicle (in the present case, toward second headlamp 21).

[0046] Radiator support cover 1 may be fabricated of various materials, including, for example, plastic, metal (e.g., steel), and/or a combination thereof. For example, radiator support cover 1 may be formed of polypropylene/ethylene-propylene) ABS (acrylonitrile butadiene styrene), and

any suitable mix thereof, by way of an injection molding or a compression molding process. Alternatively, radiator support cover 1 may be formed of steel or stainless steel, formed by way of, for example, a stamping process.

According to some embodiments, a radiator support cover 1 may be formed of a first material (e.g., metal) and then over-molded with another material (e.g., ABS plastic). One of skill in the art will recognize that any suitable method for forming a desired size and shape for radiator support cover 1 may be implemented without departing from the scope of the present disclosure.

[0047] Radiator support cover 1 may have any desirable thickness for purposes of carrying out its function of radiator and support protection, while also providing for desired impact energy absorption. For example, radiator support cover may have a thickness of, for example, between 1 and 3 mm, between 0.5 and 5 mm, and between 1 and 4 mm.

[0048] At least one weakening hole 10 is provided in radiator support cover 1. Weakening hole 10 is configured to encourage deformation of a portion of radiator support cover 1 when a force is exerted upon radiator support cover 1 during an impact. For example, during an impact with a pedestrian, force exerted by the pedestrian on radiator support cover 1 (e.g., via hood 12, grill 5, etc.) may cause deformation of radiator support cover 1 about weakening holes 10 such that absorbed peak force is reduced via the deformation. Such deformation may be encouraged by the presence of weakening holes 10, among others.

[0049] Weakening hole 10 may be provided offset from a centerline of radiator support cover 1, for example, toward a second side portion of the vehicle as referenced by headlamp 21. Such an offset may be configured based on a position of hood latch housing 2, for example, to provide deformation symmetry, and/or peak force symmetric behavior, between deformation on first side portion of radiator support cover 1 (e.g., where hood latch housing 2 is positioned) and deformation on a second side portion of radiator support cover 1 (e.g., toward second headlamp 21). Hood latch housing 2 will be described in greater detail below.

[0050] Weakening hole 10 may be a through hole or a blind hole, and where a collection of more than one weakening hole 10 is provided, any combination of through holes and blind holes may be comprised by the collection of weakening holes 10. For example, a first weakening hole 10 may be a through

hole, a second weakening hole 10 may be a blind hole, followed by another through hole, and so on in an alternating manner. Alternatively, only through holes may be used. One of skill will recognize that a collection of weakening holes may be designed for a particular application so as to provide a desired level of weakness resulting in deformation on impact.

[0051] Weakening hole 10 may be elongate in form and may extend along an axis in a direction from a front to a back of radiator support cover 1, as determined by a front and back of the vehicle based on an installed position of radiator support cover 1. In other words, when radiator support cover 1 is installed in a vehicle, a front of radiator support cover 1 is oriented toward a front of the vehicle in which it is installed, while a back of radiator support cover 1 is oriented toward a back of the vehicle. Where desired, weakening hole 10 may extend in other directions, for example, a triangle wave pattern may be formed along an axis in a direction from a front to a back of the vehicle. One of skill will understand that additional patterns, e.g., square wave, sine wave, etc., may be formed as desired.

[0052] According to exemplary embodiments, a total span of weakening hole 10 may extend over 5 percent, 10 percent, 20 percent, 30 percent, or more (e.g., 50 percent) of a maximum width $W_{\max}$ of radiator support cover 1. One of skill will understand that a total span of weakening hole 10 may depend on a desired level of weakening to obtain deformation, among others. Further, total span of weakening hole 10 shall be understood to mean measurement on a planar projection of weakening hole 10, such that the total span of weakening hole 10 does not include spans that extend in directions other than along the front to back axis of vehicle 1.

[0053] A width of weakening holes 10 may be determined based on a desired deformation, an anticipated impact force, a thickness of radiator support cover 1, and other suitable design factors. According to some embodiments of the present disclosure, weakening hole 10 may have a width of between 50 to 500 percent of a thickness of radiator support cover 1. According to some examples, weakening hole 10 may have a width of between 1 and 10 mm, e.g., 4 mm.

[0054] Fastener holes 7 may be provided at various locations on radiator support cover 1 to enable secure fastening of radiator support cover 1 to various pieces of the vehicle. For example, fastener holes 7 may enable

fastening of radiator support cover 1 where deformation of radiator support is less likely to occur, e.g., at headlamp assemblies 9 and 21, among others.

[0055] Fastener holes 7 may comprise a through hole of any suitable diameter configured to receive a desired fastener to assist in installation of radiator support cover 1.

[0056] Fig. 2B shows an enlarged portion 30 of the radiator support cover shown at Fig. 2A. A separably attached, e.g., integrally formed, hood lever housing 2 is provided on radiator support cover 1 to enable housing and operation of a hood lever 13 (shown at Fig. 3B) for opening hood 12 and maintaining hood 12 in a closed position on the vehicle (e.g., during operation of the vehicle). The term "separably" in the present context should be understood to mean that hood lever housing may become at least partially disconnected (e.g., break away) from radiator support cover 1 when a force (e.g., from impact with a pedestrian) is applied to hood lever housing 2 (e.g., via radiator support cover 1).

[0057] Hood lever housing 2 may have a "box-type shape," presenting several (e.g., four) sides and openings enabling insertion and operation of hood lever 13. One of skill in the art will understand that the box-type shape is exemplary only, and any desirable shape may be used for forming hood lever housing 2.

[0058] Hood lever housing 2 may be formed from the same material as radiator support cover 1, or from different material, as desired. For example, radiator support cover 1 may be formed of a plastic material, while hood lever housing 2 is formed of metal. According to some embodiments, both hood lever housing 2 and radiator support cover 1 may be formed of a plastic material, and may, for example, be formed unitarily, understanding that in such unitary construction, hood lever housing 2 is configured so as to be readily separable from radiator support cover 1 during application of a force.

[0059] As noted above, hood lever housing 2 may be separably attached to a first side portion of radiator support cover 1 (e.g., at a position offset toward first headlamp 9). Such a separable attachment may be accomplished by any suitable means. For example, one or more breakable ribs 3 may join radiator support cover 1 and hood lever housing 2. Breakable ribs 3 may be formed integrally with radiator support cover 1 during fabrication of radiator support

cover 1 (e.g., during a molding operation) or may be formed after via, e.g., a cutting operation.

[0060] Breakable ribs 3 may be provided based on a size of hood lever housing 2 and a desired retention/breaking strength with regard to an anticipated impact force. For example, between 5 and 30 breakable ribs 3 may be provided, and breakable ribs 3 may have thicknesses, based on, for example, the number of ribs provided, among others. According to some embodiments, where 10 breakable ribs 3 are provided, each breakable rib 3 may have a thickness of between 0.5 and 3mm.

[0061] Breakable ribs 3 may be cylindrical, rectangular, elliptical, or any other suitable shape for forming such breakable ribs 3. In addition, breakable ribs 3 may include areas of further weakness, e.g., an area of reduced thickness of each breakable rib 3. For example, where breakable ribs 3 are provided with a nominal thickness of 2mm, an area (e.g., near a connection with radiator support cover 1) may have a thickness of 1mm.

[0062] Alternatively, for example, when hood lever housing is formed separately from radiator support cover 1, breakable connections between hood lever housing 2 and radiator support cover 1 may be formed, e.g., by brazing, soldering, overmolding, etc. of the hood lever housing 2 and radiator support cover 1.

[0063] During an impact, at least a portion or even all of breakable ribs 3 (or other suitable separable connections) may become disconnected from radiator support cover 1, thereby allowing hood lever housing 2 to become dislocated from radiator support cover 1, rather than maintaining rigidity of radiator support cover 1, which may cause an increase of peak force transmitted to a pedestrian leg.

[0064] One or more release holes 6 may be provided in radiator support cover 1 for enabling release of one or more fasteners 8 used in installation of radiator support cover 1, e.g., fastening of radiator support cover 1 to grill 5.

[0065] According to some embodiments of the present disclosure, the one or more release holes 6 may be configured as a through-hole having at least a portion of its periphery 26 opening into an elongated slot 11 to enable a releasable fastener to release via (e.g., "push through") the opening when subjected to a force, e.g., an impact force directed toward a back of the vehicle.

[0066] Therefore, according to some embodiments, release hole 6 may comprise a circular through hole having a portion corresponding to between 5 and 180 degrees of a periphery of the through hole open (i.e., an absence of material) toward elongated slot 11. One of skill in the art will recognize that
5 release hole may have any desirable shape, for example, circular, rectangular, oval, etc., without departing from the scope of the present disclosure.

According to another example, release hole 6 may be square, and may have a portion from about 20-60 percent of its periphery open (i.e., an absence of material) to elongated slot 11. In addition, based on a desired release force,
10 open portion 26 may be designed accordingly such that a fitted fastener 8 subjected to said desired level of force may release (i.e., "break-through") into open portion and enter elongated slot 11.

[0067] As another example, release hole 6 may comprise a through hole, the through holes being adjacent to elongated slot 11 (e.g., separated by
15 approximately 0.5 mm). In such an example, material delimiting a periphery of release hole 6 may be easily breakable, such that upon impact, a fastener may break through the periphery and move into elongated slot 11.

[0068] Fig. 3A shows a cross section along A-A of the view in Fig. 2B, while Fig. 3B shows a cross section along B-B of the view in Fig. 2B. According to
20 some embodiments, fastener 8 may be inserted inside of a fastener housing 38 which may be configured to facilitate release of fastener 8 and housing 38 via open portion 26 of release hole 6. Additionally, where desired, fastener housing 38 may include one or more elements configured to grip fastener 8 while also possibly acting to clip fastener 8 when a force is exerted. This may further
25 facilitate release.

[0069] Elongated slot 11 may be configured to permit releasable fastener 8 to move in at least one dimensions following release and/or clipping of fastener 8. This may then allow radiator support cover 1 to also move in at least one dimension, for example, toward a back portion of the vehicle during an impact.
30 Therefore, elongated slot 11 may comprise a through hole of any desirable shape permitting such movement upon release.

[0070] While in the example described herein, certain features are indicated as being positioned on a first side and/or a second side of the vehicle, one of skill in the art will recognize that this is exemplary only, and the features may be
35 positioned as desired to provide weakness and deformation according to a

particular design. In other words, a mirror image of the presently described radiator support cover 1 may be implemented, as well as other designs without falling outside the scope of the present disclosure.

[0071] Throughout the description, including the claims, the term

5 "comprising a" should be understood as being synonymous with "comprising at least one" unless otherwise stated. In addition, any range set forth in the description, including the claims should be understood as including its end value(s) unless otherwise stated. Specific values for described elements should be understood to be within accepted manufacturing or industry tolerances
10 known to one of skill in the art, and any use of the terms "substantially" and/or "approximately" and/or "generally" should be understood to mean falling within such accepted tolerances.

[0072] Where any standards of national, international, or other standards body are referenced (e.g., ISO, etc.), such references are intended to refer to

15 the standard as defined by the national or international standards body as of the priority date of the present specification. Any subsequent substantive changes to such standards are not intended to modify the scope and/or definitions of the present disclosure and/or claims.

[0073] Although the present disclosure herein has been described with

20 reference to particular embodiments, it is to be understood that these embodiments are merely illustrative of the principles and applications of the present disclosure.

[0074] It is intended that the specification and examples be considered as exemplary only, with a true scope of the disclosure being indicated by the

25 following claims.

CLAIMS

1. A radiator support cover for a vehicle, comprising:
housing means separably attached to the radiator support cover and
configured to permit operation of a hood lever housed at least partially within
5 the housing means; and
at least one weakening means positioned offset from the housing means
and configured to encourage deformation of the second side when a force is
exerted on the radiator support cover.
- 10 2. The radiator support cover according to claim 1, comprising one or
more release means configured to facilitate release of one or more releasable
fasteners attaching the radiator support cover to a grille of the vehicle.
3. The radiator support cover according to claim 2, wherein the one
15 or more release means is configured as a through-hole having at least a portion
of its periphery opening into an elongated slot.
4. The radiator support cover according to any of claims 2 and 3,
wherein the one or more release means are configured to receive the one or
20 more releasable fasteners, preferably a releasable clip.
5. The radiator support cover according to any of the preceding
claims, wherein the housing means is separably attached to the radiator support
cover via one or more breakable support ribs.
25
6. The radiator support cover according to any of the preceding
claims, wherein the weakening means comprise an elongated through-hole in
the structure of the radiator support cover.
- 30 7. The radiator support cover according to any of the preceding
claims, wherein the one or more weakening means extend over at least 30
percent of a width of the radiator support cover.

8. The radiator support cover according to any of the preceding claims, wherein at least two weakening means are provided in the radiator support cover.

5 9. The radiator support cover according to any of the preceding claims, wherein the weakening means extend at least partially along an axis from a front of the vehicle to a back of the vehicle.

10 10. A vehicle comprising the radiator support cover according to any of claims 1-9.

11. A radiator support cover for a vehicle, comprising:
a hood lever housing separably attached to the radiator support cover and configured to permit operation of a hood lever; and
15 at least one elongated hole positioned offset from the hood lever housing and configured to encourage deformation of the radiator support cover when a force is exerted on the radiator support cover.

20 12. The radiator support cover according to claim 11, comprising one or more release holes configured to facilitate release of one or more releasable fasteners attaching the radiator support cover to a grille of the vehicle.

25 13. The radiator support cover according to claim 12, wherein the one or more release holes comprises a through hole, at least a portion of the through hole periphery opening into an elongated slot.

14. The radiator support cover according to claim 13, wherein the one or more release holes is configured to receive the one or more releasable fasteners.

30

15. The radiator support cover according to claim 11, wherein the hood lever housing is separably attached to the radiator support cover via one or more breakable support ribs.

16. The radiator support cover according to claim 11, wherein the at least one elongated hole is a through-hole in the structure of the radiator support cover.

5 17. The radiator support cover according to claim 11, wherein the at least one elongated hole extends over at least 20 percent of a width of the radiator support cover.

10 18. The radiator support cover according to claim 11, wherein at least two elongated holes configured to encourage deformation of the radiator support cover when a force is exerted on the radiator support cover are provided in the radiator support cover.

15 19. The radiator support cover according to claim 11, wherein the at least one elongated hole extends at least partially along an axis from a front of the vehicle to a back of the vehicle.

20. A vehicle comprising the radiator support cover according to claim 11.

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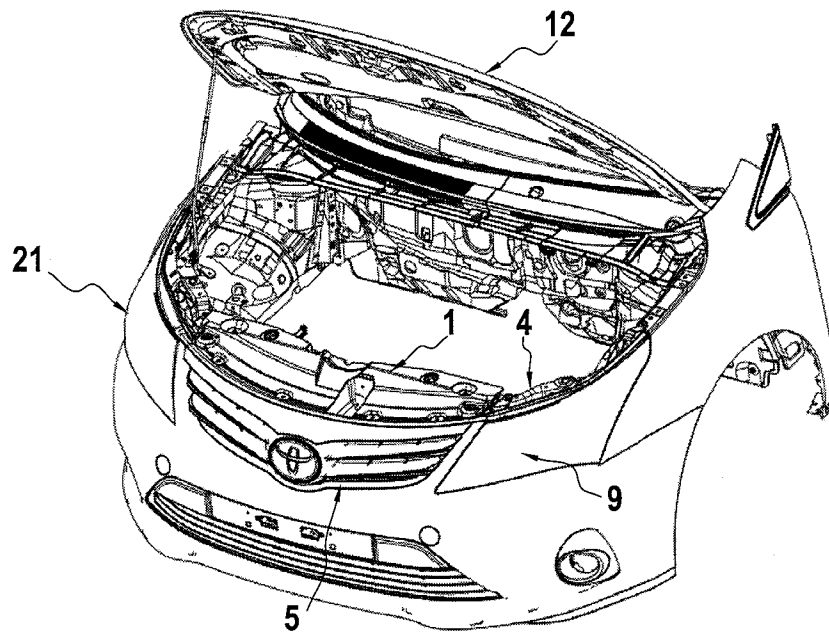


FIG. 1A

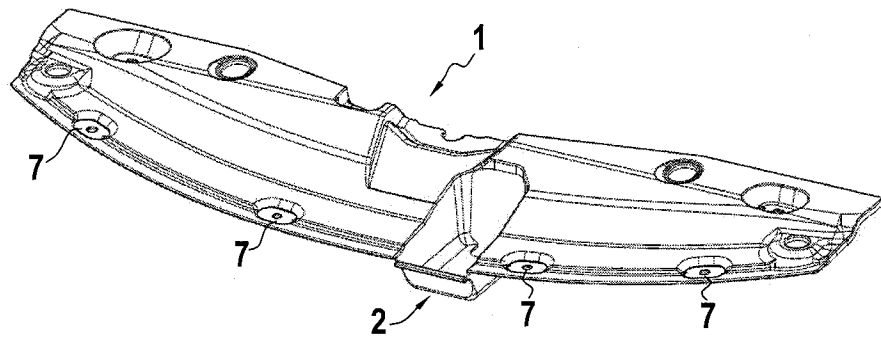


FIG. 1B

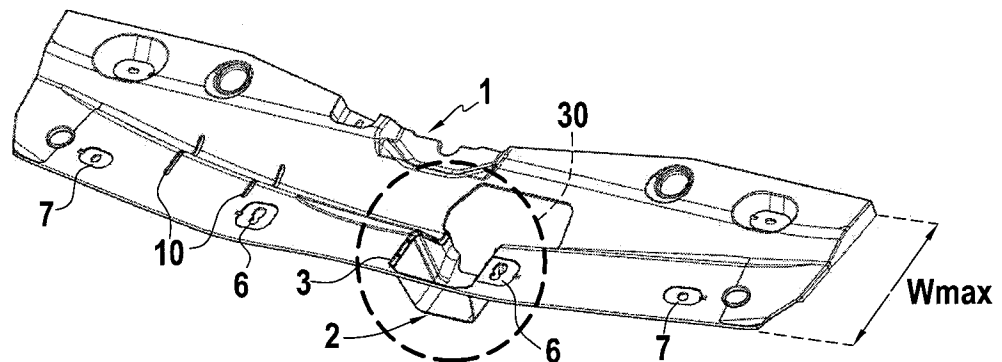


FIG. 2A

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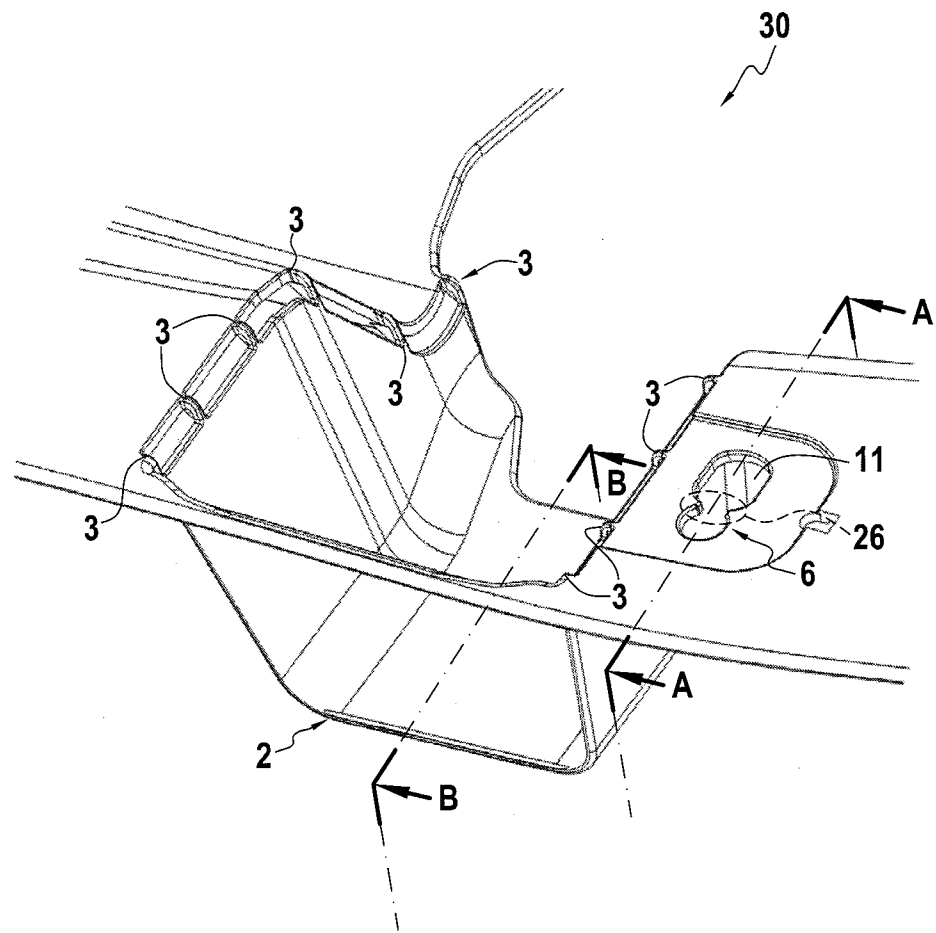


FIG. 2B

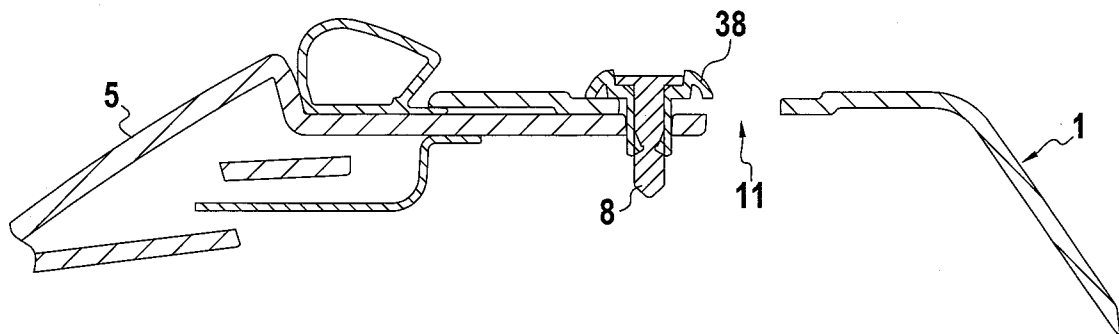


FIG. 3A

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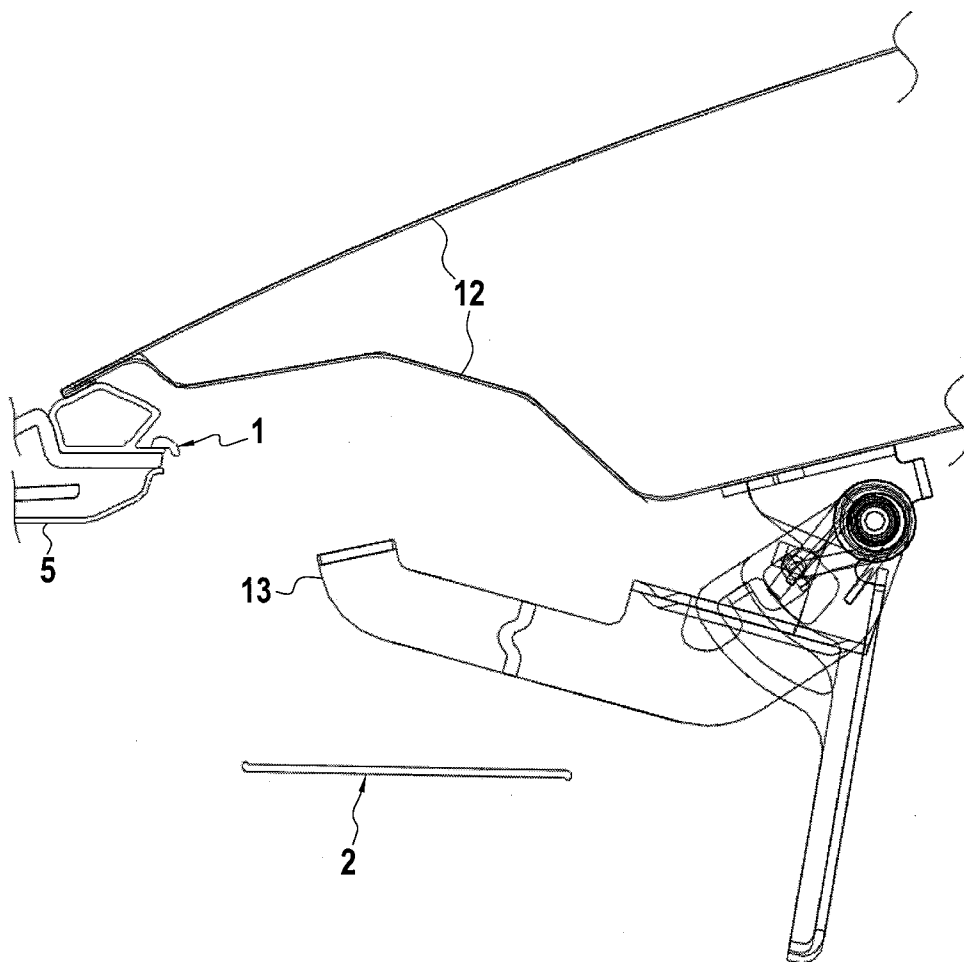


FIG.3B

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/051260

A. CLASSIFICATION OF SUBJECT MATTER
INV. B62D25/08 B60R21/34
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B62D B60R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 910 864 A1 (FAURECIA BLOC AVANT [FR]) 4 July 2008 (2008-07-04) pages 2-5; figures 1-2 -----	1-20
X	DE 100 42 037 A1 (AUDI AG [DE]) 8 March 2001 (2001-03-08) column 3; figure 1 -----	1-20
A	EP 2 284 066 A2 (FAURECIA INTERIOR SYSTEMS [US]) 16 February 2011 (2011-02-16) figures 1-5 -----	1-20
A	WO 2007/140113 A1 (DOW GLOBAL TECHNOLOGIES INC [US]; KOTNIS ASHISH VIJAY [US]; LORENZO LU) 6 December 2007 (2007-12-06) pages 2-6 ----- -/-	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

1 October 2015

Date of mailing of the international search report

08/10/2015

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/051260

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 2 708 446 A1 (TORAY INDUSTRIES [JP]; HONDA MOTOR CO LTD [JP]) 19 March 2014 (2014-03-19) abstract; figures 1-3 -----	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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