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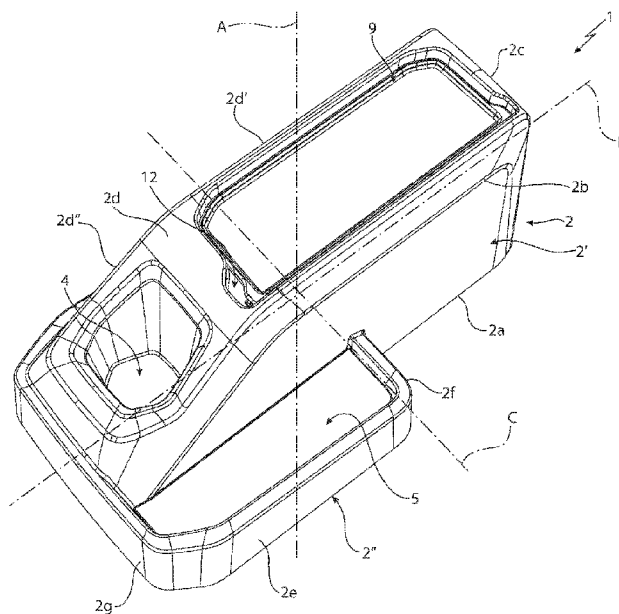
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(54) Title: IMPROVED VEHICULAR SUPPORT SYSTEM

FIG. 1



(57) Abstract: Support system (1) for a vehicular cab, provided with a structure (2) configured to be fixed to a portion of the vehicular cab and defining a main portion (2'), the main portion (2') defining at least one first seat (3), the support system (1) comprising a lid (9) configured to selectively cooperate in contact with the main portion (2') so as to assume a first configuration in preventing, at least partially, access to the first seat (3) from the external environment and a second configuration in which said seat (3) is accessible from the external environment.

LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,
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"IMPROVED VEHICULAR SUPPORT SYSTEM"CROSS-REFERENCE TO RELATED APPLICATIONS

This Patent Application claims priority from Italian
5 Patent Application No. 102023000012210 filed on June 14,
2023, the entire disclosure of which is incorporated herein
by reference.

TECHNICAL FIELD

The present invention relates to a vehicular support.

10 The present invention is preferably, although not
exclusively, applied to a cab of a vehicle, such as a vehicle
of commercial type. In the following, reference will be made
to such application by way of example.

STATE OF THE PRIOR ART

15 Vehicles of commercial type, such as "LCV" (Light
Commercial Vehicles) light vehicles or heavy vehicles, such
as lorries or trucks, are equipped with a cab defining a
driving place.

The need is increasingly felt to provide cabs which are
20 as comfortable and ergonomic as possible. An element which
affects the comfort and the ergonomics of the cabs is given
by the support systems, such as consoles for resting elements
such as keys, bottles, mobile phones and other driver's
objects.

25 The need is thus felt to improve the existing support

systems in order to increase their versatility and ergonomics, while maintaining their production costs low and their dimensions inside the cab small.

The object of the present invention is to satisfy the needs set forth above in an optimized and cost-effective manner.

SUMMARY OF THE INVENTION

The aforementioned object is achieved by a support system and a vehicle as claimed in the appended claims.

10 BRIEF DESCRIPTION OF THE DRAWINGS

In order to better understand the present invention, a preferred embodiment is described in the following, by way of non-limiting example and with reference to the accompanying drawings, wherein:

- 15 • Figure 1 is a perspective view of a support system according to a first embodiment of the invention in a first operating condition;
- Figure 2 is a perspective view of a support system according to a second embodiment of the invention in a first operating condition;
- 20 • Figure 3 is a top view of the support system of Figure 1;
- Figure 4 is a top view of the support system of Figure 2;
- 25 • Figure 5 is a perspective view of a support system

according to a second embodiment of the invention in a first operating condition;

- Figure 6 is a top view of the support system of Figure 5;

- 5
- Figures 7A-7B-7C are perspective views of the support system according to the second embodiment of the invention indicating the operating steps for passing from the first operating condition to a second operating condition.

10 DETAILED DESCRIPTION OF THE INVENTION

In the accompanying figures, reference numeral 1 illustrates a support system for a vehicular cab, for example a console. The support system 1 is adapted to be housed in a vehicular cab, for example of a vehicle of light commercial
15 type, "LCV" - Light Commercial Vehicle - or of heavy type such as a truck or a lorry.

In particular, the support system 1 can be fixed, as is described in the following, to the vehicular floor or to portions extending therefrom such as, for example, armrests
20 between the seats of the cab.

In both embodiments, the support system 1 comprises a structure 2 defining a main portion 2'. The main portion 2' has a prismatic shape along a first vertical axis A, advantageously having a substantially rectangular plan
25 defined on a plane comprising a second longitudinal axis B

and a third transversal axis C perpendicular to the first axis A.

In particular, the main portion 2' comprises a bottom wall 2a configured to allow the connection of the support
5 system 1 to a vehicular portion of the cab.

The main portion 2' further comprises a bottom wall 2a along the first axis A and arranged on opposite side with respect to a second axis B and a rear wall 2c connecting the side walls 2b to each other and parallel to the third axis
10 C.

Specifically, the main portion 2' further comprises an upper wall 2d defining a planar portion 2d' connecting the side walls 2b and the rear wall 2c to each other and an inclined portion 2d'' connecting the planar portion 2d' to
15 the bottom wall 2a and the side walls 2b on the opposite side of the rear wall 2c. Advantageously, the inclined portion 2d'' has a substantially linear shape. According to what described above, therefore, the side walls 2b have a substantially trapezoidal shape.

20 The structure 2 further comprises an auxiliary portion 2'' connected to one of the side walls 2b. Also the auxiliary portion has a prismatic shape extending along the first axis A and advantageously a rectangular plan.

Advantageously, the main portion 2' and the auxiliary
25 portion 2'' are made in one single piece so that the bottom

wall 2a of the auxiliary portion 2'' is continuous with the bottom wall 2a of the main portion.

Specifically, the auxiliary portion 2'' comprises a side wall 2f extending from the bottom wall 2a and preferably
5 parallel to the side wall 2b of the main portion 2' and a pair of front and rear walls 2g, 2f opposite each other along the third axis C and joining the side wall 2f of the portion.

Advantageously, the front wall 2g is collinear with the joint between the inclined portion 2d'' and the bottom wall
10 2a, whereas the rear wall 2f is placed at the front along the second axis B with respect to the rear wall 2c of the main portion 2'.

The support system 1 defines a plurality of seats configured to support objects having various shape and size
15 which can be utilized by the driver, such as cups, bottles, electronic devices, coins, keys, etc.

In particular, the structure 1 defines a first seat 3 made from the flat portion 2d', a second seat 4 made from the inclined portion 2d'' and a third seat 5 made in the
20 auxiliary portion 2''.

The third seat 5 is advantageously delimited by the side, rear and front walls 2e, 2f, 2g which in fact delimit the perimeter thereof.

The second seat 4 extends with a polygonal shape and
25 thus has a variable height along the first axis A and

preferably has a hexagonal shape.

The first seat 3, as is better visible in Figures 2 and 4, advantageously has a substantially rectangular shape and extends from the planar portion 2d'. Specifically, inside
5 the first seat 3 a pair of projecting portions 5 are housed.

Preferably, as is illustrated, the first seat 3 has a volume greater than the second seat 4 which, in turn, has a volume greater than the third seat 5.

In the first embodiment (Figures from 1 to 4), the
10 projecting portions 5 have a prismatic shape with a trapezoidal base with the greater base defined from the side walls defining the first seat 3 and facing each other in a symmetrical manner. In this manner, as is visible in Figure 4, the first seat 3 is divided into a pair of housings 3',
15 3'', for example for containing bottles.

In the second embodiment (Figures from 5 to 7C), the projecting portions 5 have a prismatic shape with a sinusoidal base, i.e. provided with a linear base from the side walls defining the first seat 3 and facing each other
20 in a symmetrical manner. From the edge opposite the linear base, the projecting portions 5 have a sinusoidal development thus defining three different housings 3', 3'', 3''', for example for containing bottles.

The support system 1 further comprises electrical
25 connection means 6 configured to allow the electrical and/or

electronic connection of electrical devices to the vehicle.

In the first embodiment, the electrical connection means 6 are made in one of the two projecting portions 5.

In the second embodiment, the electrical connection 5 means 6 are made in the inclined portion 2d'' in particular in the proximity of the second seat 4.

Advantageously, the support system 1 comprises a lid 9 configured to selectively close the first seat 3 so as to define a resting shelf. Therefore, the lid 9 can be 10 selectively coupled to the first seat 3 so as to assume a first support configuration in which it prevents access to the first seat 3 from the external space, advantageously insulating it, and can be decoupled from the same 3 so as to assume a second configuration of minimum occupied space in 15 which it allows the communication between seat 3 and external space, i.e. allowing access thereof.

In particular, the structure 2 defines a shoulder in the first seat 3 configured to extend on at least part of the perimeter of the opening of the first seat and adapted to 20 cooperate in contact with the lid 9 for supporting it.

In the first embodiment, the lid 9 is a rigid component, in particular it can be entirely disconnected from the structure 2, i.e. made as a separate element from it.

In such embodiment, the shoulder 8 is defined on front 25 and rear edges of the perimeter of the opening of the first

seat 3; such portions of shoulder 8 support the lid 9 so as to insulate the first seat 3 when cooperating in contact with them.

In such embodiment, the structure 2 also defines a housing 11 sized to house the lid 9 when not cooperating with the shoulder 8, in particular to house it entirely.

Specifically, the housing 11 is part of the first seat 3, i.e. is part thereof. Specifically, it is made adjacent to an inner side wall defining the first seat 3 and sized so that, when inserted therein, the lid 9 defines one of the inner side walls delimiting the first seat 3.

Consequently, the housing 11 extends along the vertical axis A and the longitudinal axis B so that the lid 9 is housed in the housing 11 parallel to a plane defined by the vertical axes A, B.

Advantageously, the housing 11 is continuous with the first seat 3 along the direction of the transversal axis C so as to leave a face of the lid 9 exposed for facilitating the extraction thereof.

In the second embodiment, the lid 9 is a flexible component, in particular at least in part connected to the structure 2. In such embodiment, the shoulder 8 is defined the almost totality of the perimeter of the opening of the first seat 3.

In such embodiment, the lid 9 comprises a plurality of

rigid segments 9' configured to cooperate in contact with the shoulder 8 and connected to each other by a flexible portion 9'', such as a portion made of plastic or fabric-finish material.

5 The rigid segments 9' are spaced apart from each other along the axis B and separated by the flexible portion 9'' so as to fold on each other freeing the first seat 3. More specifically, the rigid segments 9' are substantially rectangular with longitudinal axis parallel to the second
10 axis B and substantially of same extension with respect to each other. Preferably, they are also spaced apart along the second axis B in a manner equidistant from each other.

Advantageously, the rigid segment 9' adjacent to the front wall 2c is connected to it by means of the flexible
15 portion 9'' so as to allow the total overturning of the lid 9 outside the structure 2 thus entirely freeing the first seat 3.

Advantageously, the structure 2 also defines an indentation 12 configured to facilitate the extraction of
20 the lid 9 with respect to the first seat 3.

In the first embodiment, the indentation 12 is made on the planar portion 2d' adjacent to the front edge of the opening of the first seat 3.

In the second embodiment, the indentation 12 is made on
25 the lid 9 so as to allow the overturning of a segment 9' on

the following one along the second axis B.

The operation of the embodiment of the support system according to the invention described above is as follows.

In both embodiments it is possible to entirely move or
5 overturn the lid 9 allowing accessing the first seat 3 and
using it to place, for example, bottles or elements which
one needs to access, or, coupling the shoulder 8 to the lid
9, insulating the first seat 3 and obtaining a resting shelf
for the use of the driver.

10 In particular, in the first embodiment, the driver can,
by means of the indentation 12, overturn the lid 9 and insert
it in the housing 11 so as to free the first seat 3 (Figures
2-4). When necessary, the driver will be able to take the
lid 9 again from the housing 11 and place it again on the
15 shoulder 8 so as to insulate again the first seat 3 and
obtain the resting shelf (Figures 1-3).

In the second embodiment, the driver can, by means of
the indentation 12, overturn the segments 9' on each other
(as is illustrated in the sequence of Figures 7A-7B-7C)
20 reducing the space of plane along the second axis B and
freeing, progressively and according to need, access to the
space of the first seat 3, up to a maximum opening
corresponding to the total overturning of the lid 9 outside
the structure 2. Clearly, the illustrated sequence can be
25 performed in reverse for closing the access to the first

seat 3 and repropose the entire resting shelf (Figures 5-6).

Based on the foregoing, the advantages of the support system according to the invention are evident.

Thanks to the proposed support system, it is possible
5 to provide a versatile use of containment space of objects,
by means of the first seat, or of support plane by means of
the lid.

In particular, the lid selectively removable from the
space of the first seat 3 and which can be housed in the
10 structure 2 prevents from losing the lid with consequent
loss of time. A similar effect is obtained should the lid be
connected to the structure 2, as in the second embodiment.

In particular, the housing in the shoulder 8 or the
presence of a flexible portion 9'', as in the second
15 embodiment, decreases the noises caused by the road
vibrations.

Furthermore, the proposed system does not provide for
the use of hinges or leverages as in the known systems and
thus results to be less expensive and less bulky.

20 Still, the electrical connection means 6 can be housed
in one of the seats 3, 4, or on the external surface of the
structure 2 thus providing a great positioning versatility
so as to comply with the requirements of different Countries.

Finally, it is clear that modifications and variations
25 can be made to the support system according to the present

invention, which anyway do not depart from the scope of protection defined by the claims.

Clearly, the shapes of the structure and the number of seats can vary, as well as the number of lids with which the support system is equipped or its shape.

Still, it is advantageously possible to combine the two embodiments providing a flexible lid which can be housed in a seat obtained in the structure 2; in such case, obviously, the lid will not be connected to the structure 2.

CLAIMS

1.- Support system (1) for a vehicular cab, said support system (1) comprising a structure (2) configured to be fixed to a portion of said vehicular cab and defining a main portion (2'),
5 said main portion (2') defining at least one first seat (3), said support system (1) comprising a lid (9) configured to selectively cooperate in contact with said main portion (2') so as to assume a first configuration in preventing, at least partially, access to said first seat (3) from the external environment and a second
10 configuration in which said seat (3) is accessible from the external environment,

characterized in that said structure (2) defines a housing (11) sized to contain said lid (9) in said second configuration, in which said lid (9) is rigid and made as a separate element
15 from said structure (2).

2.- Support system according to claim 1, wherein said structure (2) defines a shoulder (8) on at least part of the perimeter of the opening of said at least one first seat (3), said lid (9) cooperating in contact with said shoulder (8) to
20 assume said first and/or second configuration.

3.- System according to claim 1 or 2, wherein said housing (11) is part of said at least one first seat (3).

4.- System according to one of the preceding claims, wherein said housing (11) extends along vertical (A) and longitudinal
25 (B) axes of said support system (1), said lid (9) being entirely

housed in said housing (11) in said second configuration.

5.- System according to claim 2, wherein said structure (2) defines an indentation (12), said indentation (12) facilitating the holding of said lid (9) in said first configuration.

5 6.- Support system (1) for a vehicular cab, said support system (1) comprising a structure (2) configured to be fixed to a portion of said vehicular cab and defining a main portion (2'), said main portion (2') defining at least one first seat (3), said support system (1) comprising a lid (9) configured to selectively
10 cooperate in contact with said main portion (2') so as to assume a first configuration in preventing, at least partially, access to said first seat (3) from the external environment and a second configuration in which said seat (3) is accessible from the external environment, characterized in that said lid (9)
15 comprises a plurality of segments (9') configured to cooperate in contact with said shoulder (8) and a flexible portion (9'') connecting said segments (9') to each other, wherein said flexible portion (9'') is configured to allow the overturning of one segment (9') on the other, and wherein said flexible portion
20 (9'') connects one of said segments (9') to said structure (2).

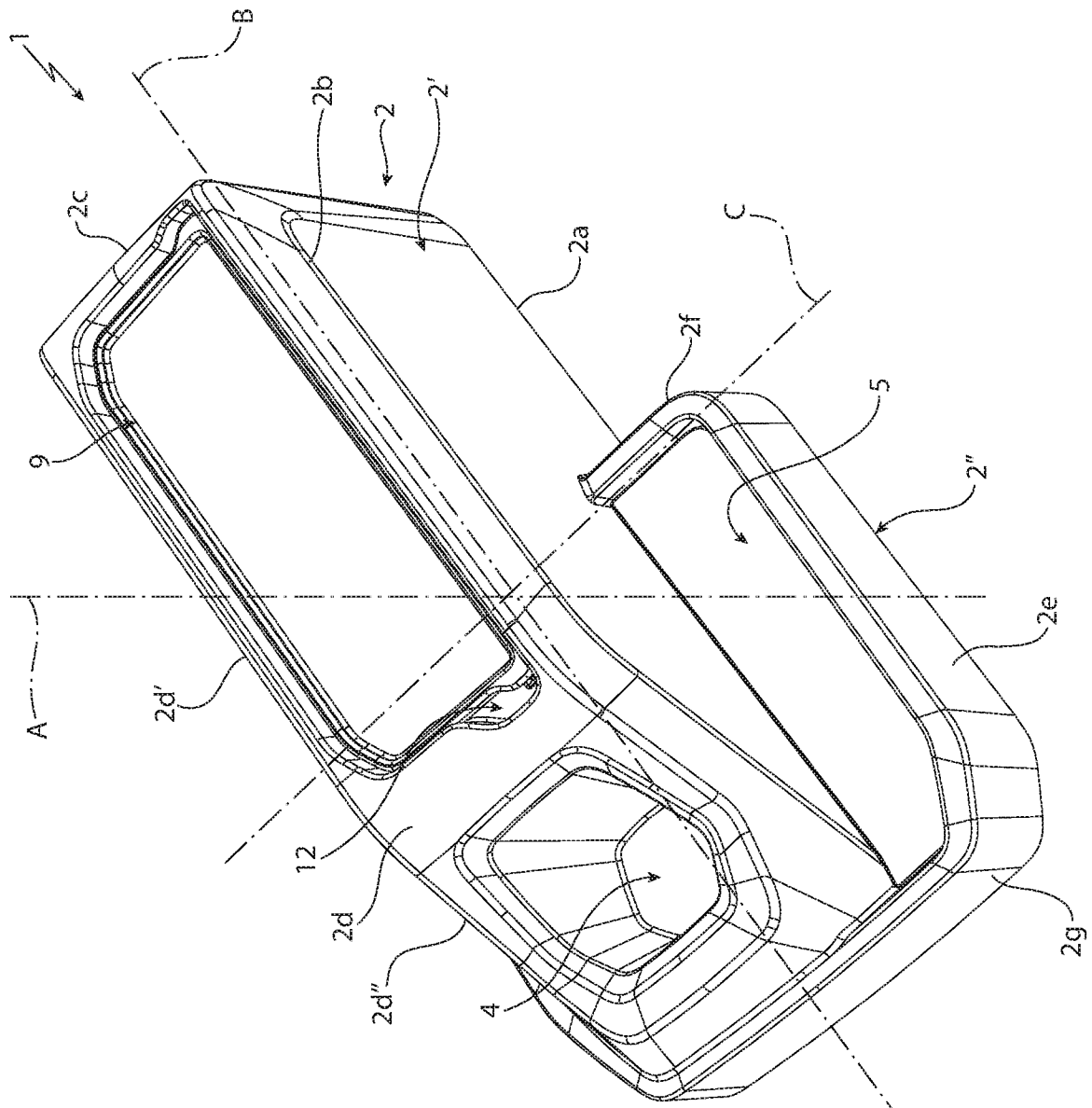
7.- System according to one of the preceding claims, further comprising electrical connection means (6), said electrical connection means (6) being carried by said structure (2) outside said at least one first seat (3).

25 8.- System according to one of the preceding claims, further

comprising electrical connection means (6), said electrical connection means (6) being carried by said structure (2) inside said at least one first seat (3).

9.- System according to one of the preceding claims, wherein
5 said structure (2) defines further seats (4, 5) in addition to said at least one first seat (3).

10.- Vehicle comprising a vehicular cab and a support system (1) fixed to a portion of said vehicular cab and made according to one of the preceding claims.



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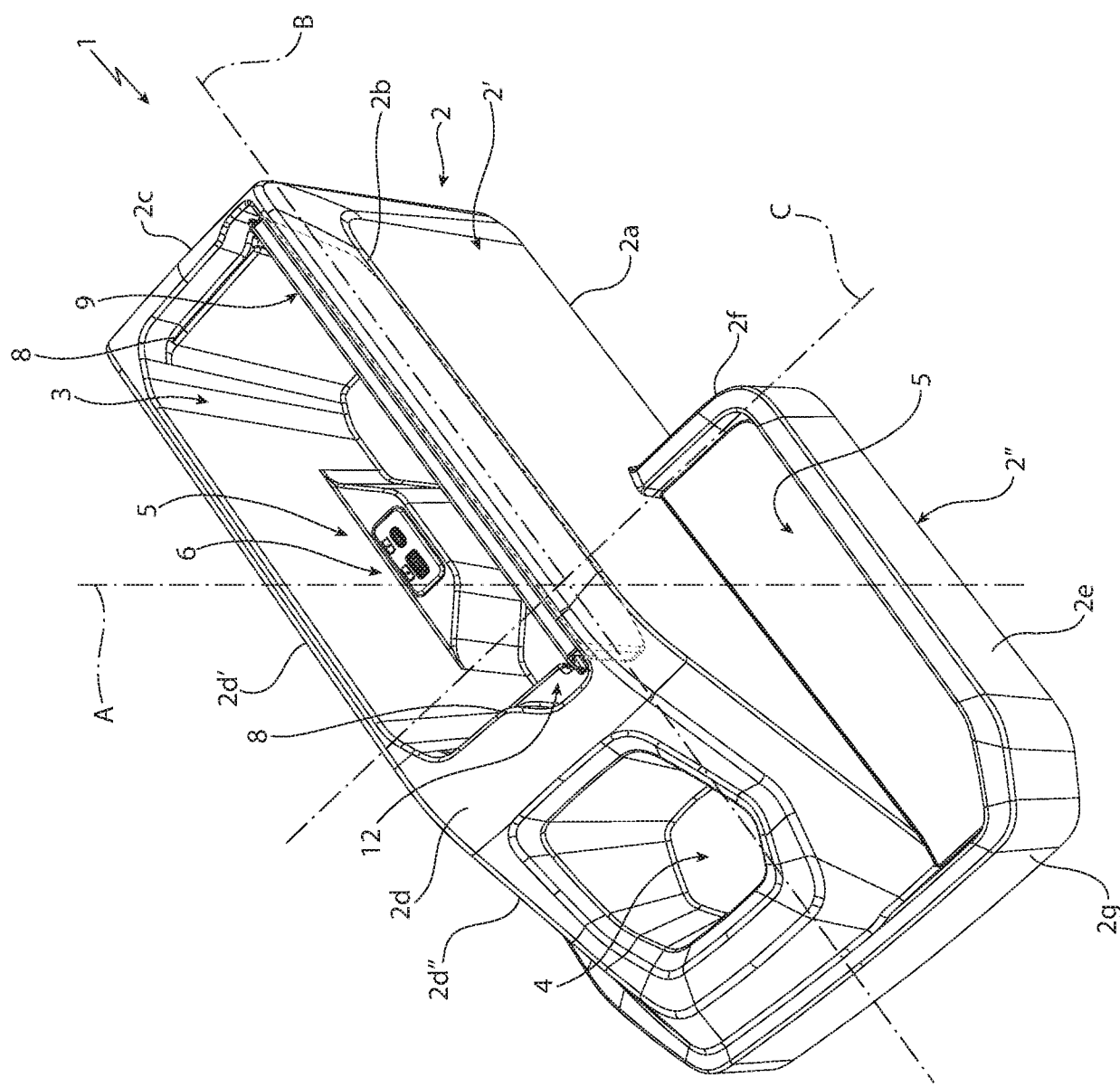
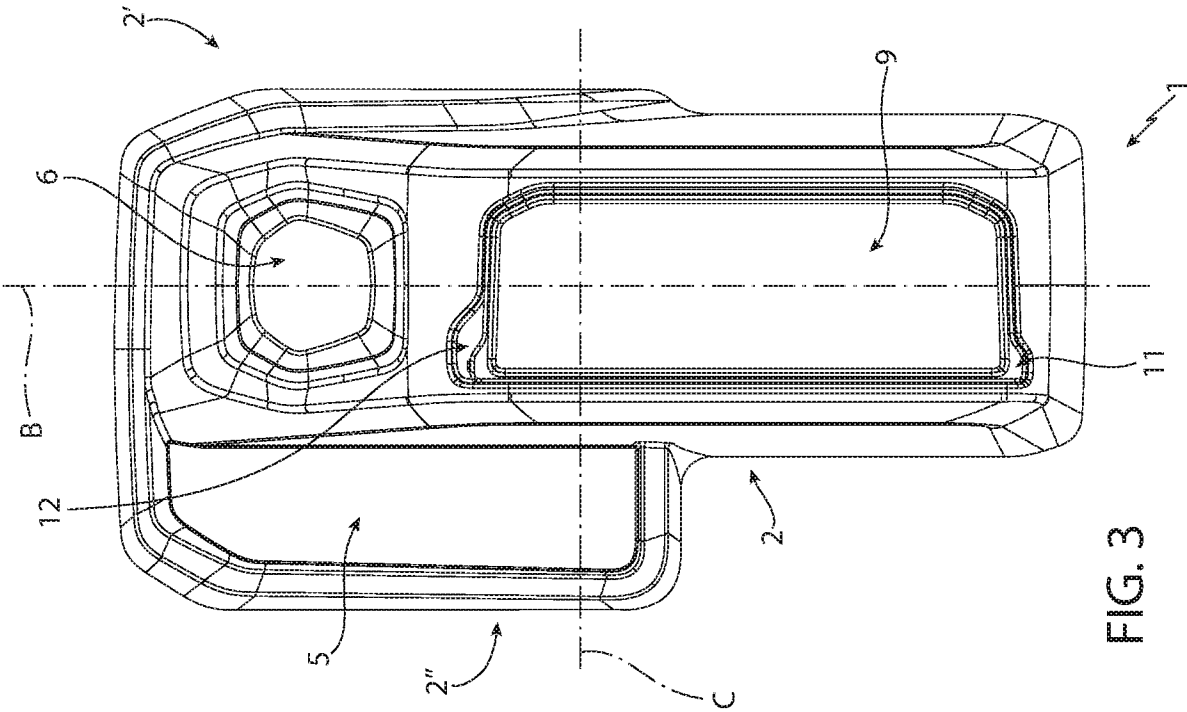
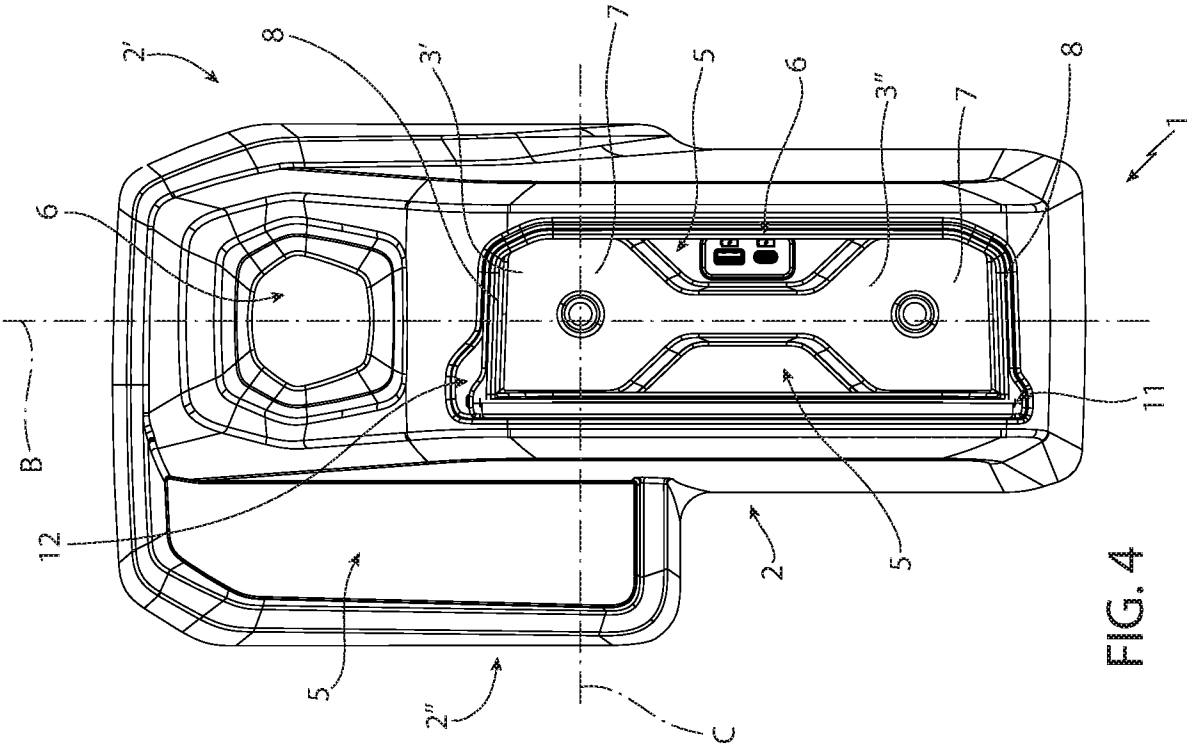
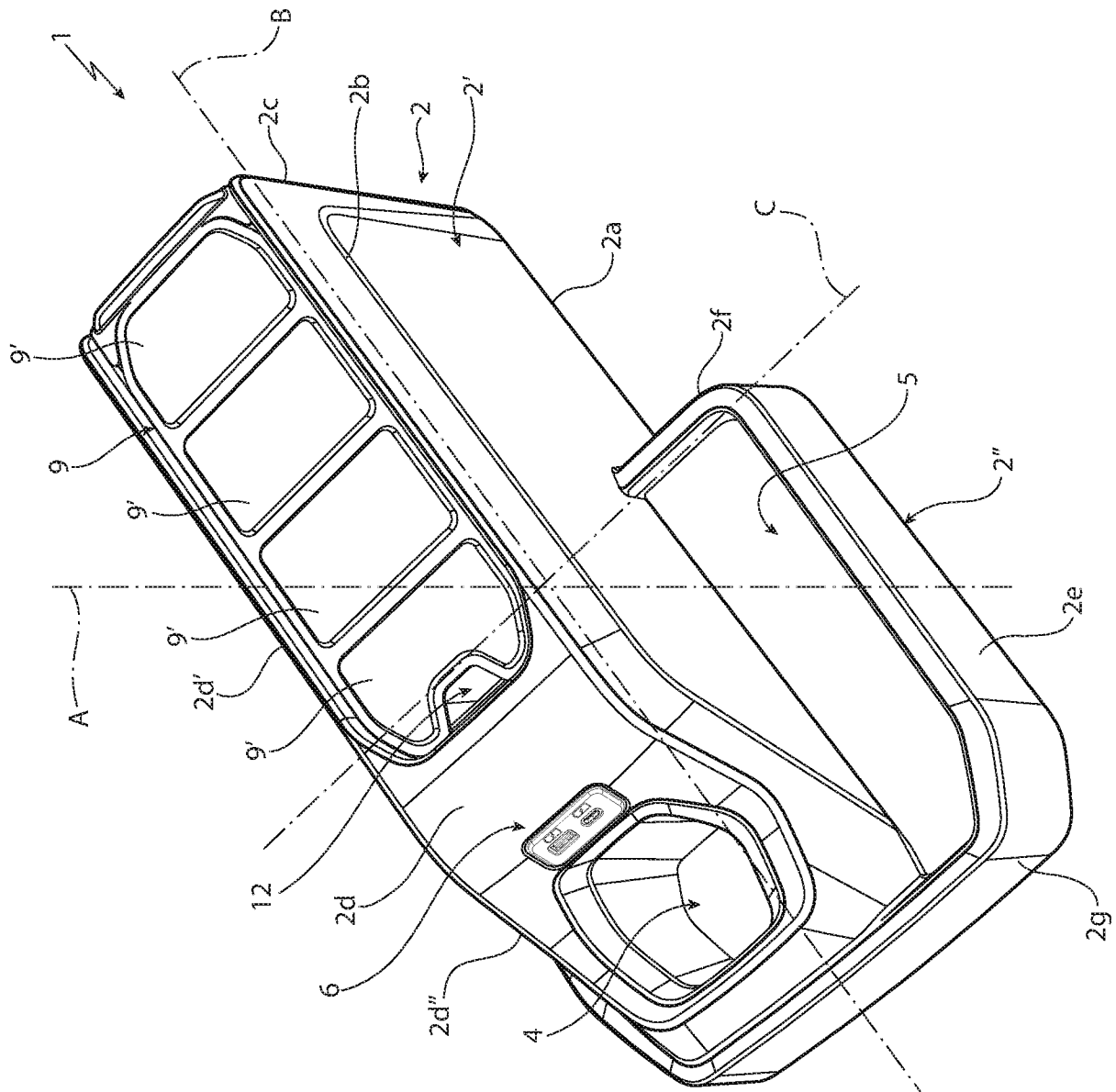


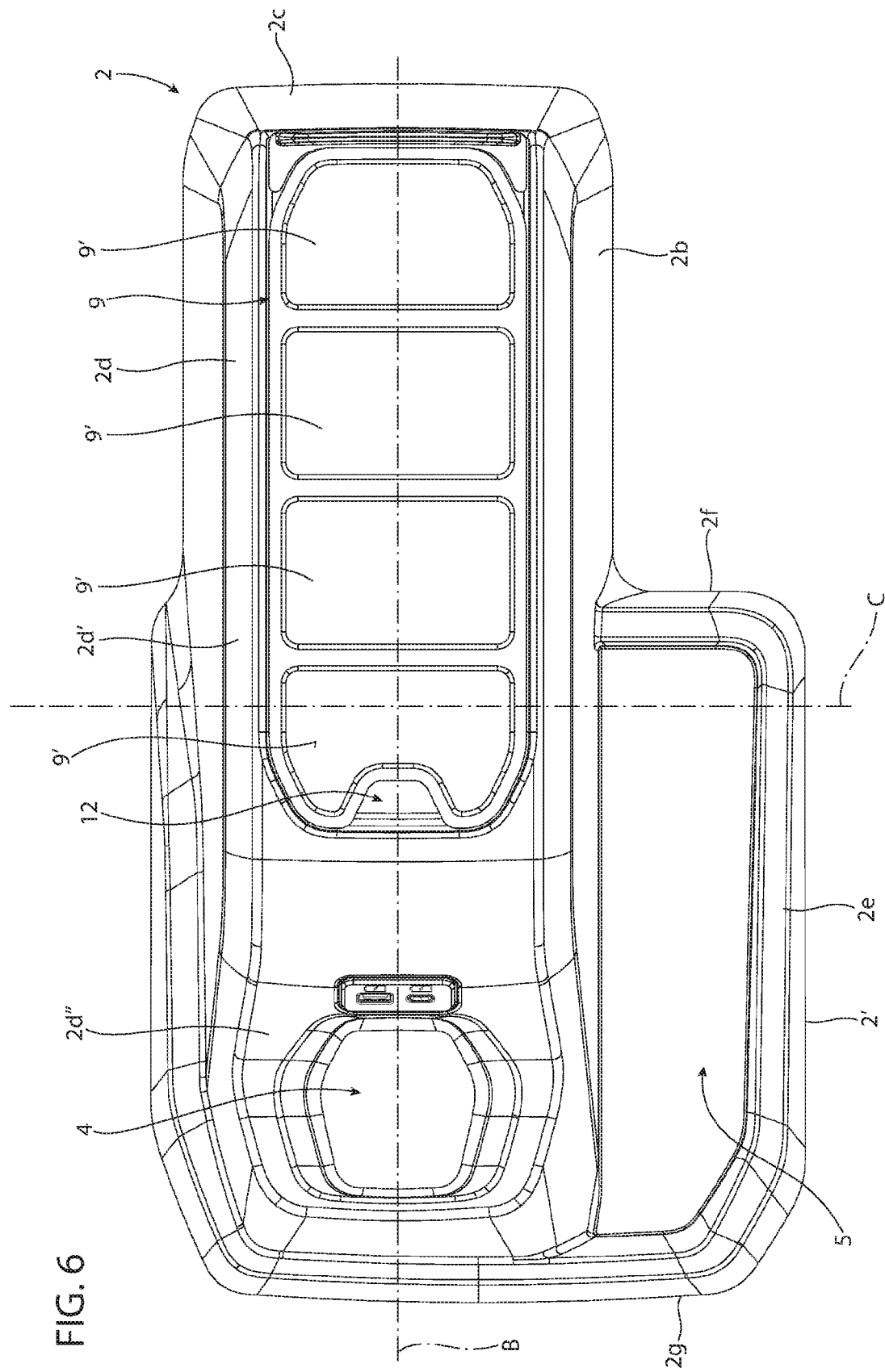
FIG. 2





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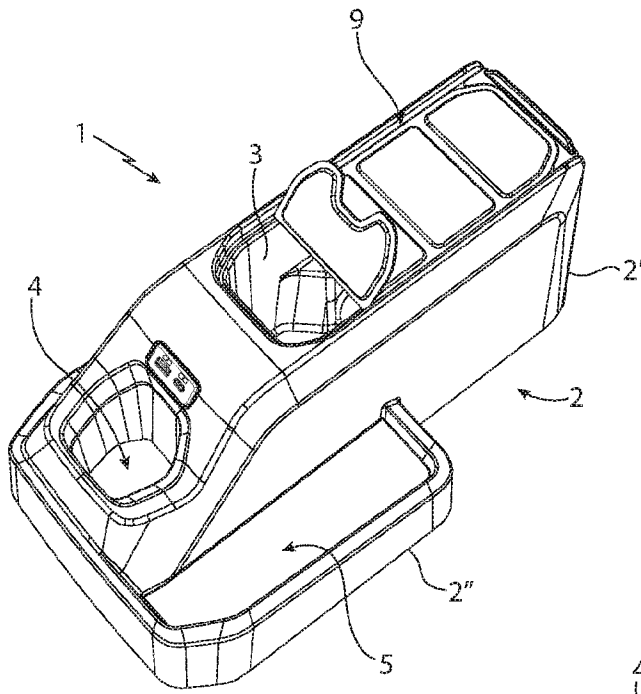


FIG. 7A

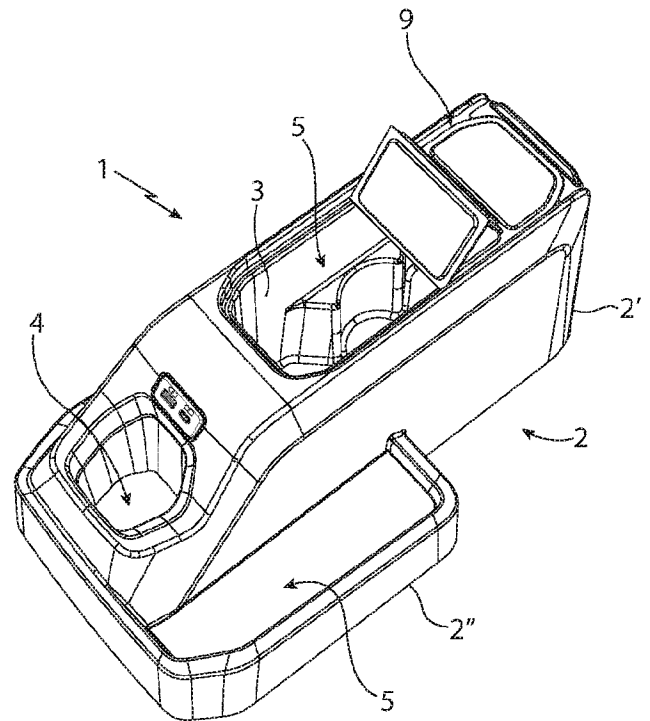


FIG. 7B

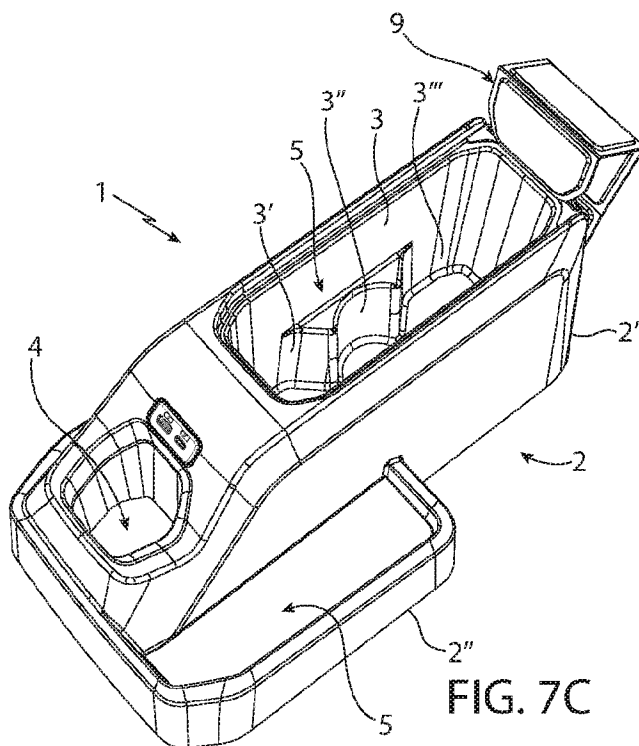


FIG. 7C

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2024/055744

A. CLASSIFICATION OF SUBJECT MATTER

INV. B60R7/04

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)

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	DE 10 2016 014027 A1 (DAIMLER AG [DE]) 24 May 2018 (2018-05-24) figures 1-4 ----- - / - -	1-10



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Date of the actual completion of the international search

2 September 2024

Date of mailing of the international search report

16/09/2024

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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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