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(11)

EP 3 064 184 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.09.2016 Bulletin 2016/36

(51) Int Cl.:
A61G 3/00 (2006.01)

(21) Application number: 16159047.6

(22) Date of filing: 07.03.2016

(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**
 Designated Extension States:
BA ME
 Designated Validation States:
MA MD

(30) Priority: 06.03.2015 IT PR20150012

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(54) STRETCHER SUPPORT TO BE INSTALLED IN HEALTH COMPARTMENTS OF AMBULANCES

(57) The invention relates to a stretcher support (1) to be installed in health compartments of rescue vehicles, such as ambulances.

One or more means and/or systems for supplying and/or distributing medical gases, including vacuum, and/or possible distribution of electrical power, cables, pipes, heating systems, stretcher locking mechanisms are provided in suitable channels obtained in the sections that make up the surface and the side walls and/or

passed through the support itself.

According to a variant, the passage of the one or more means and/or systems for supplying and distributing medical gases uses the cavities of the support deck, consisting of a series of aluminum sections couplable by means of coupling systems.

One or more dedicated attachment points on the support allow the connection with the medical gas, electric, pneumatic distribution, etc.

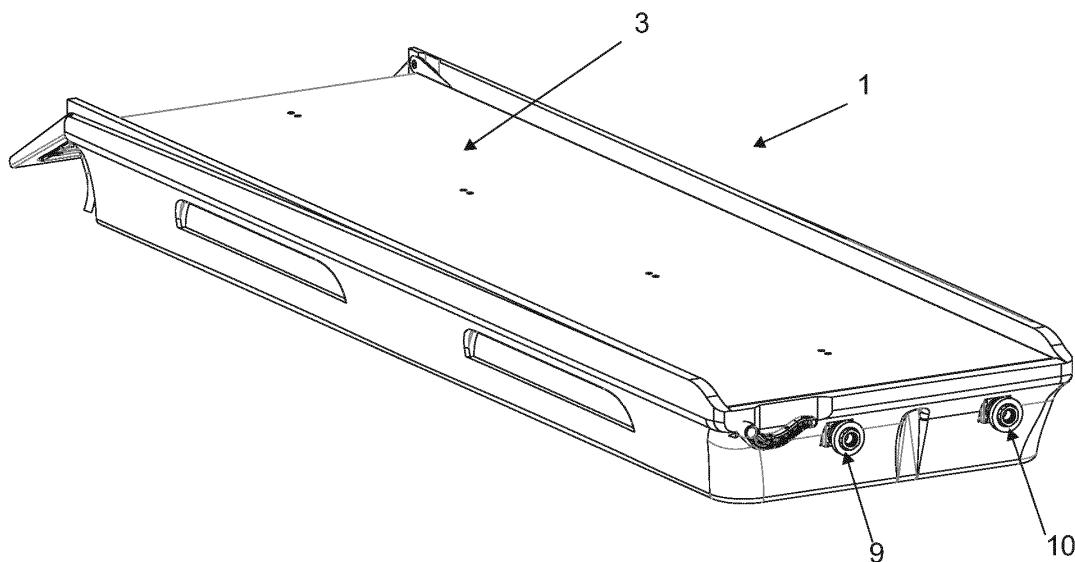


Fig. 5

Description

[0001] The present invention relates to the field of equipment for rescue vehicles, such as ambulances, for the transportation of injured, ill or disabled people on stretchers, to receive said patients in a health compartment and carry them to a hospital.

[0002] As is known, ambulances are vehicles used for the transportation of patients lying on a stretcher, in turn positioned in the health compartment.

[0003] In particular, a dedicated accessory commonly known as stretcher support, resting on the deck of the vehicle compartment, is used to optimize the loading and unloading of the so-called stretchers (beds provided with retractable legs and swivel wheels).

[0004] Stretcher supports may be fixed, sliding, tilting, cushioned, and their use allows:

- Properly loading the stretcher,
- Taking care of the patient more easily and properly
- Keeping the stretcher in position
- Also positioning the patient prone and sloping and moving him/her laterally and vertically into the health compartment, always keeping him/her lying on the stretcher.

[0005] Lifting means are used to allow said positioning.

[0006] Moreover, lateral displacements are allowed by using dedicated guides to carry out displacements even in the presence of heavy weights.

[0007] In addition to that, stretcher supports are provided with compartments for one or more stretchers (spoon-like, spinal boards, etc...) which can be inserted from the foot side by lifting a special flap.

[0008] Normally, these stretcher supports are substantially parallelepiped in shape, with two sides greater than the head sides. The support base rests on the deck and the upper surface allows accommodating the stretchers or spinal boards or others.

[0009] Fixing systems and/or straps are provided so as to retain the stretcher and/or the patient.

[0010] In addition to what described above, the current supports do not provide additional functionality.

[0011] In particular, the need to have a stretcher support that is also a poly-functional accessory is felt; specifically, the need to have a stretcher support capable of favoring the "orderly" distribution of medical gases, i.e. so as to keep adequate "cleaning" of the working environment, is felt.

[0012] This is very important because it should be kept in mind that a work environment free of obstacles for the health operators facilitates their work.

[0013] Therefore, the object of the present invention is to provide a stretcher support that achieves what said with a rational and cost-effective solution advantageously integrated in the device itself.

[0014] This object is achieved with the features of the invention described in the independent claim 1.

[0015] The dependent claims describe preferred and/or advantageous aspects of the invention.

[0016] In particular, an embodiment of the present invention provides a stretcher support (to be installed in health compartments of ambulances) bearing one or more means and/or systems for supplying and/or distributing medical gases; said means being provided in suitable channels obtained and passed through the support itself.

5 **[0017]** With this solution, one or more medical gas sources can traverse the support over the entire or part of the length thereof, though remaining concealed and protected. Advantage: distribution cables and systems untidily arranged into the ambulance compartment and hindering the operational area of the health operators are avoided.

10 **[0018]** As an example, one or more inlet areas of the medical gas ducts may be provided below the stretcher support (such as through openings on the deck) so as to be concealed by the support itself, after which the distribution, through channels, can reach connection points obtained or not obtained on the sides of the support itself, even at points distant from the source. According to another aspect of the invention, the passage area of the 15 one or more means and/or systems for supplying and/or distributing medical gases is located inside the support deck.

20 **[0019]** To this end, a deck is provided, comprising a series of aluminum sections couplable to each other 30 through coupling systems. The sections have a hollow portion.

25 **[0020]** The cavities of the set of sections thus serve as channels for the distribution of medical gases or other systems.

35 **[0021]** The surface obtained with a set of sections solves a problem felt with the current supports, increasing the resistance of the upper support surface of the stretcher which, being a sheet with uniform thickness, usually deforms, thereby impairing the flatness thereof.

40 **[0022]** With such a deck comprising a combination of multiple sections, the problem of oscillations disappears and everything remains perfectly flat.

45 **[0023]** In essence, one or more means and/or systems for supplying and/or distributing medical gases, including vacuum, and/or possible distribution of electrical power, cables, pipes, heating systems, stretcher locking mechanisms are provided in suitable channels obtained in the sections that make up the surface and the side walls and/or passed through the support itself.

50 **[0024]** According to another aspect of the invention, the support bears one or more dedicated and special attachment points so as to allow connection with the medical gas distribution system of the internal channels. One or more dedicated attachment points on the support allow the connection with the medical gas, electric, pneumatic distribution, etc. Finally, another aspect of the invention is the provision of a vacuum pump in the support, preferably at the head position; the pump is also complete

with at least one plug socket and at least one oxygen port, connectable to the main system of the ambulance. [0025] Further features and advantages of the invention will become apparent from the following description, provided by way of nonlimiting example with the aid of the figures shown in the accompanying drawings, in which:

- Figures 1, 2, 3, 4 and 5: show a stretcher support provided with internal channels for one or more means and/or systems for supplying and/or distributing medical gases;
- Figures 6, 7, 8: show the stretcher support with a deck consisting of a series of aluminum sections mutually coupled by means of coupling systems; the sections have a hollow section and the passage area of the one or more means and/or systems for supplying and distributing medical gases is located in the deck thus formed.

[0026] With particular reference to the figures, reference numeral 1 indicates as a whole a stretcher support to be installed in health compartments of ambulances.

[0027] The ambulance is not shown herein since it is prior art; only a portion is shown with reference numeral 2, identifying the rear deck, i.e. the back of the vehicle where the emergency service staff operates and where the stretcher is introduced.

[0028] Support 1 has a substantially parallelepiped geometry, i.e. with two parallel sides thereof longer than the other two, at the head.

[0029] Support 1 has an upper surface 3 and a lower surface 3, substantially parallel.

[0030] Surface 3 is preferably adapted to support a stretcher of any kind or, by extension, to support a patient. It is provided with coupling means and/or straps, adapted to hold the stretcher located on surface 3 of the support itself.

[0031] In operating configuration, the lower surface 4 faces towards deck 2.

[0032] The stretcher support comprises means for supplying or distributing medical gases.

[0033] At least one medical gas distribution system is provided into suitable channels in turn obtained and passed into the support. In particular, the distribution of medical gases, including vacuum, and/or possible distribution of electrical power, cables, pipes, stretcher locking mechanisms are provided.

[0034] According to an embodiment, said system and distribution are protected within a particular type of the support deck, specifically consisting of a series of aluminum sections couplable to each other and having a hollow section.

[0035] Special attachment points provided on the support allow the connection with the medical gas distribution system of the internal channels.

[0036] Support 1 comprises a vacuum pump, at the front of the surface, complete with at least one plug socket

9 for the vacuum and at least one oxygen port 10, connectable to the main system of the vehicle or ambulance.

[0037] More in general, support 1 is further provided with means for controlling the complete distribution of the medical gases, and for coupling the relative accessories.

[0038] Finally, the invention provides a surface also provided with a 12V outlet, indicated with reference numeral 11, at the back.

[0039] In the front left side of support 1, a hollow seat 10 in the plastic shell to place a secretion collecting vessel, to be used interconnected with the vacuum pump.

[0040] The stretcher fixing board or surface 3 is made as a series of aluminum sections 30 couplable together by means of couplings 31.

[0041] At least one of sections 30 is hollow to allow and act as a channel for the medical gases: preferably, all sections are hollow inside. The result is a light and easy to assemble deck structure.

[0042] BY way of example, at least the distribution of medical gases, including vacuum, and/or possible distribution of electrical power, cables, pipes, stretcher locking mechanisms are inserted and passed into said channels of the sections.

[0043] A blower is mounted at the back, in one of the grooves formed in the plastic shell, to remove the dust by blowing.

Claims

1. Stretcher support (1) to be installed in health compartments of ambulances, **characterized in that** it comprises one or more means and/or systems for supplying and/or distributing medical gases, including vacuum, and/or possible distribution of electrical power, cables, pipes, stretcher locking mechanisms; said means being provided in suitable channels obtained and/or passed through the support.
2. Support according to claim 1, **characterized in that** the area of passage of one or more of the means and/systems for the supply and/or distribution of medical gases is constituted by the interior of the support deck.
3. Support according to claim 4 **characterized in that** said deck comprises a series of aluminum sections couplable to each other through coupling systems and the sections have a hollow portion.
4. Support according to claim 1 **characterized in that** it bears one or more dedicated and special attachment points so as to allow connection with the medical gas distribution system of the internal channels.
5. Support according to claim 1 **characterized in that** it comprises a vacuum pump in the support, preferably at the head position; the pump is also complete

with at least one plug socket and at least one oxygen port, connectable to the main system of the vehicle.

6. Method for distributing medical gases in health compartments of a rescue vehicle, **characterized in that** it provides for exploiting the inner part of at least one stretcher support for distributing, through suitable pipes and channels, medical gases at distant points in the vehicle; one or more sources of medical gases traverse the support over the entire or part of the length thereof, though remaining concealed. 5
7. Method according to claim 6 **characterized in that** one or more inlet areas of the medical gas ducts are provided below the stretcher support and the distribution reaches, through channels, connection points, obtained or not obtained on the sides of the support, even at points distant from the source. 15

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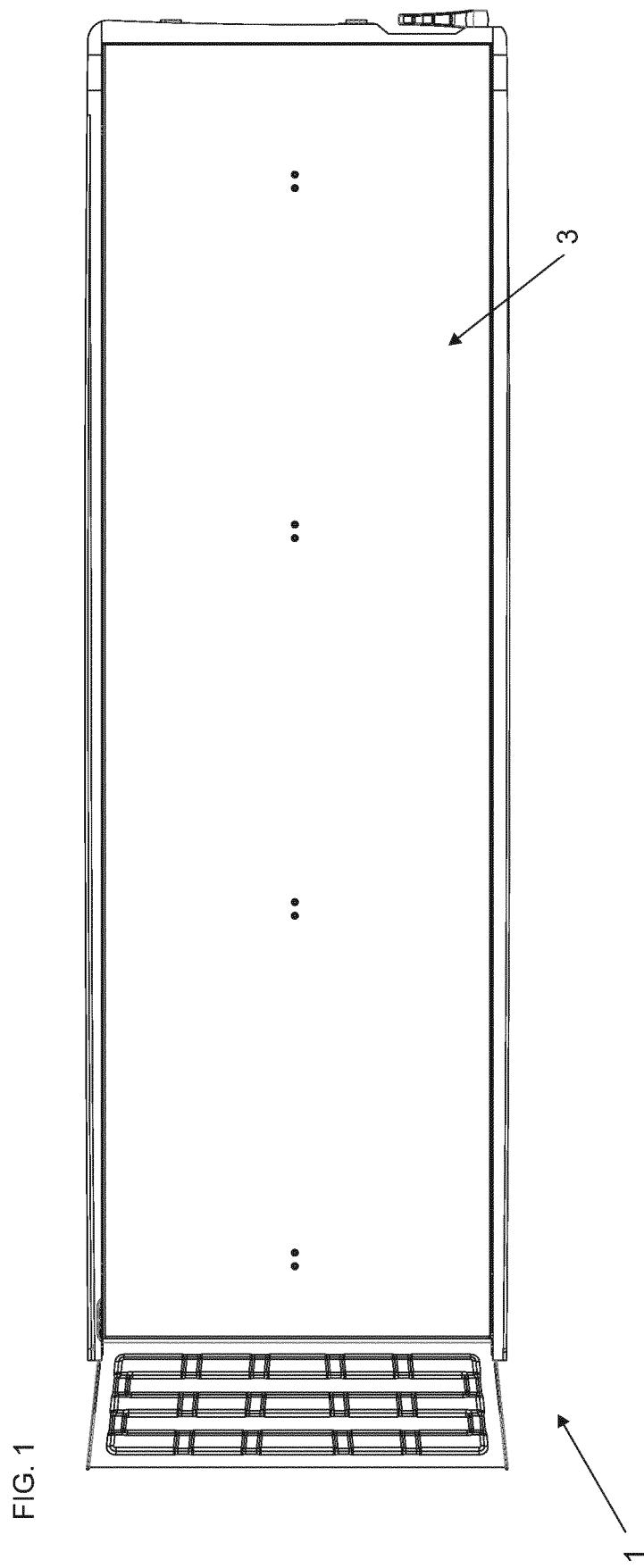


FIG. 1

FIG. 2

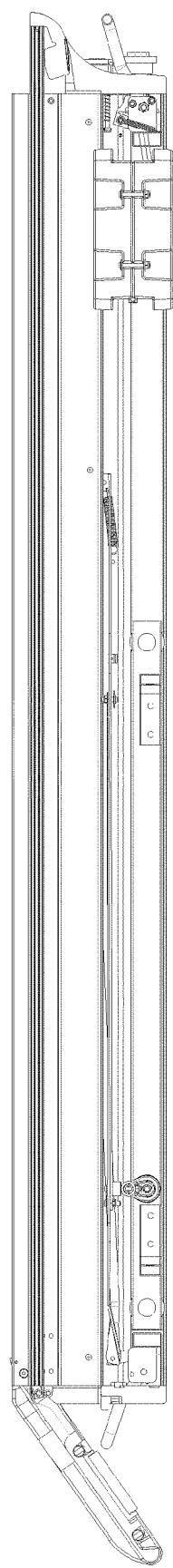


Fig. 3

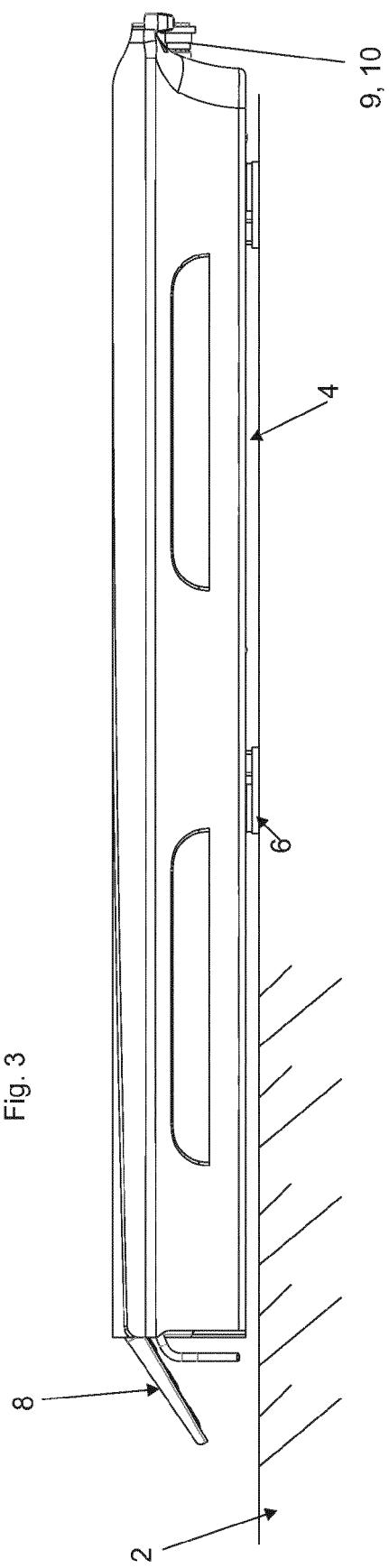


Fig. 4

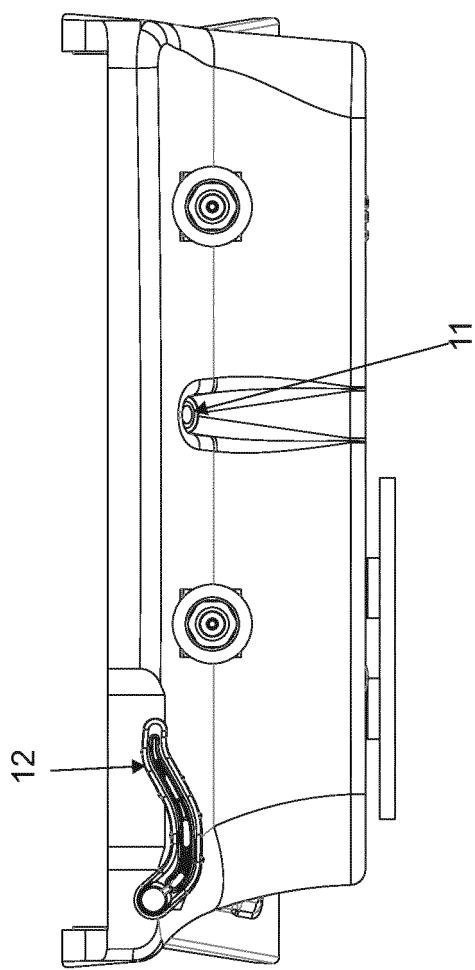
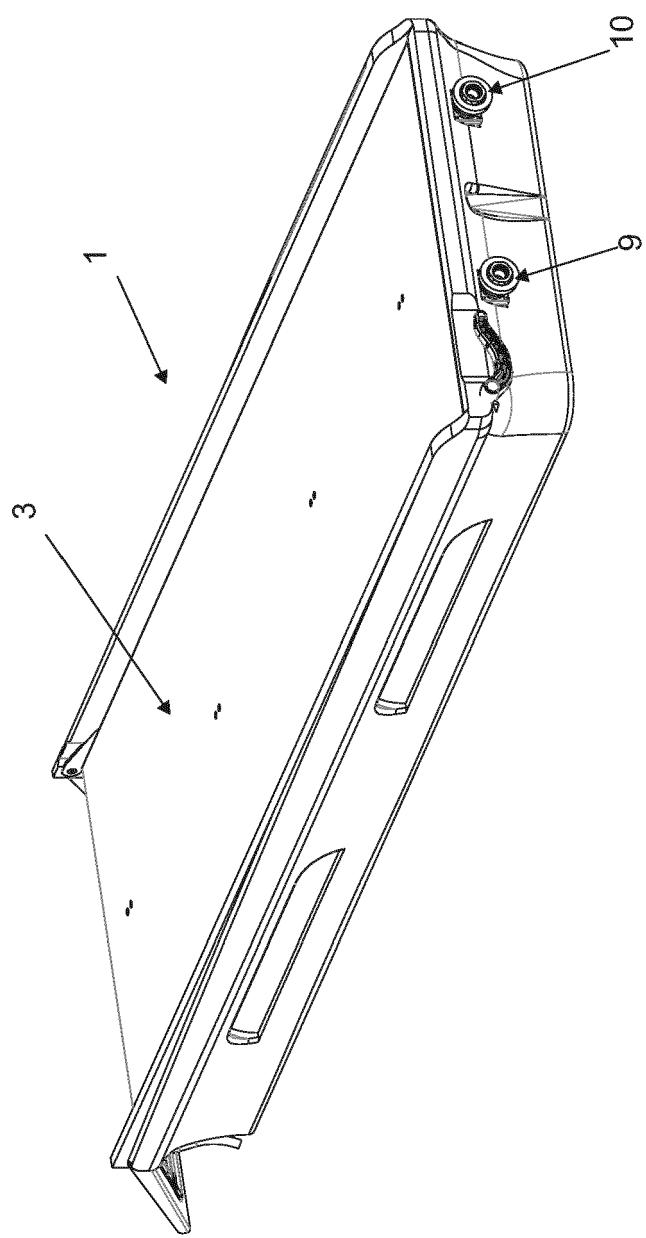
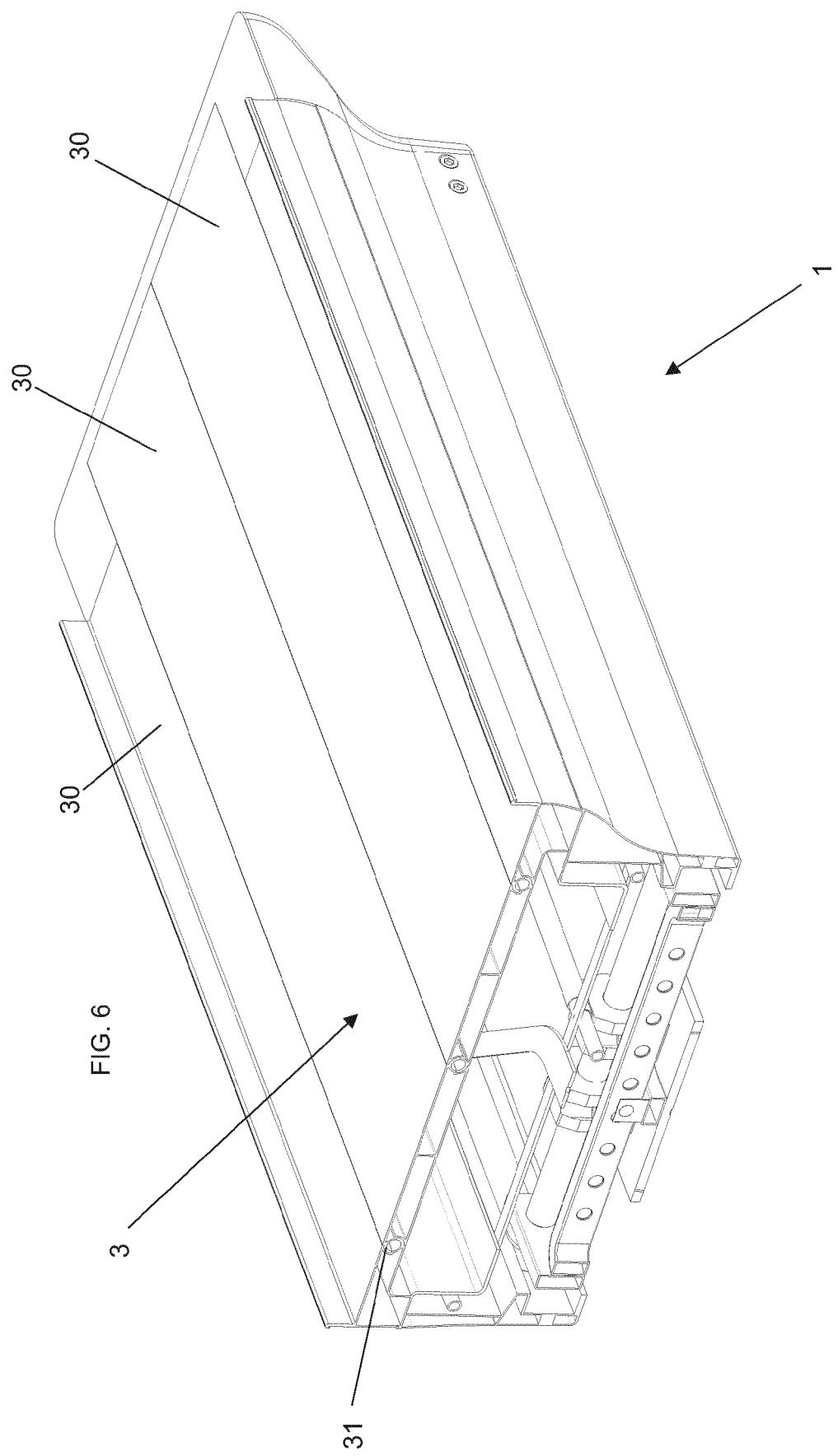


Fig. 5





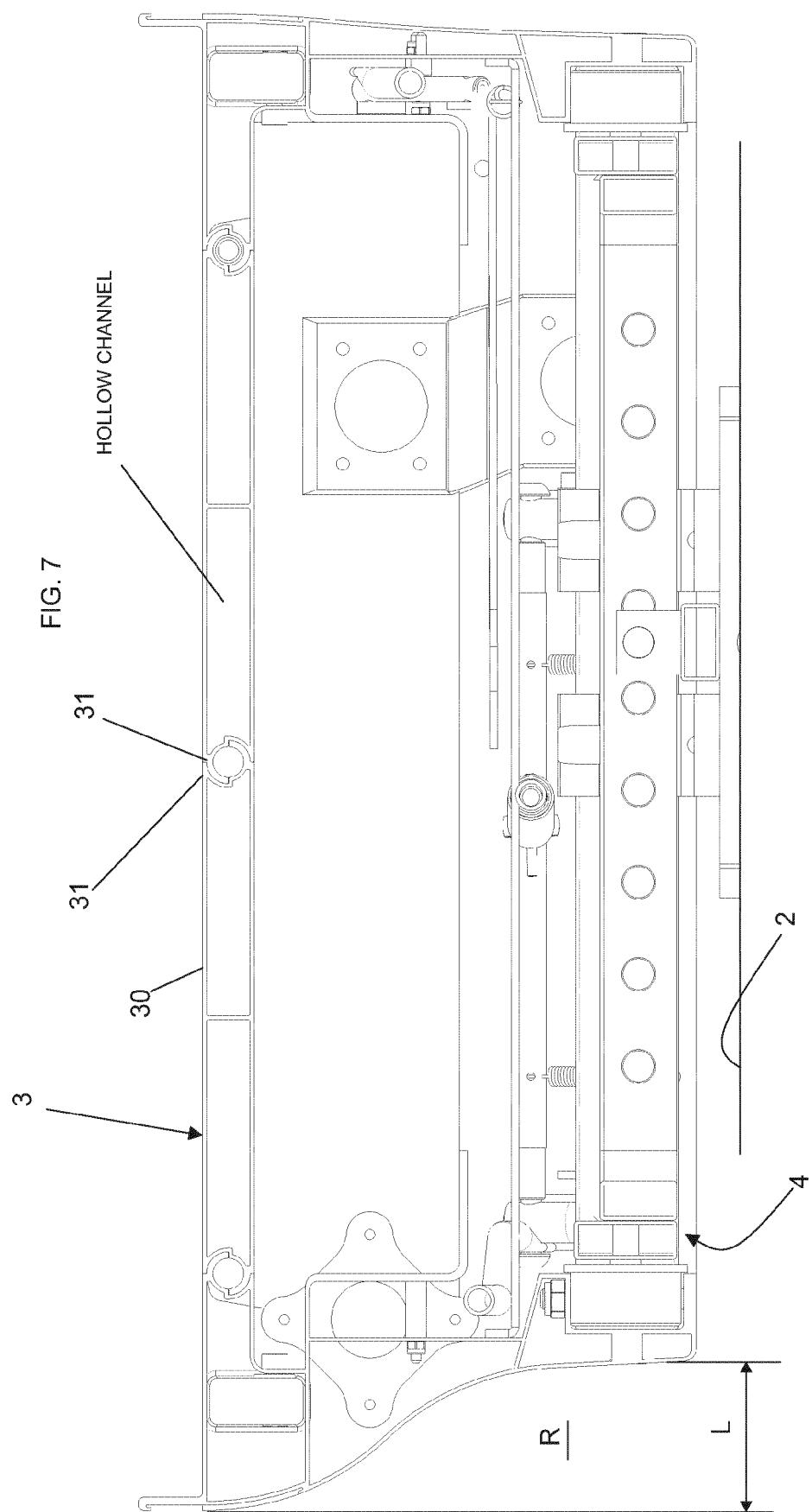
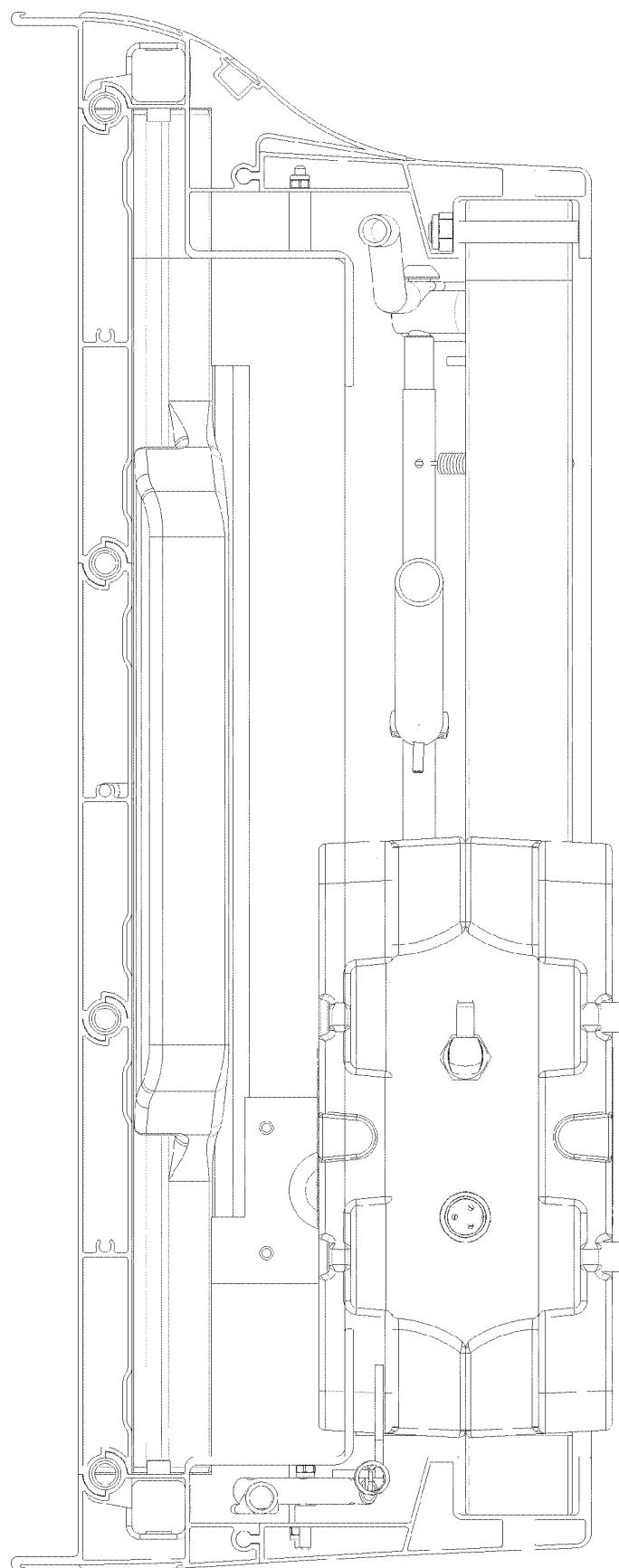


FIG. 8





EUROPEAN SEARCH REPORT

Application Number

EP 16 15 9047

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