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(54) **A boat with a shiftable roof**

(57) The present invention concerns a watercraft vehicle, such as a tender boat, having a cabin with a moveable roof, shiftably mounted, whereby the cabin becomes easily accessible to the passengers of the boat, The moveable roof is mounted for quick and easy deploying or retracting, thereby providing comfort to the passengers of the vehicle according to weather conditions, as well as more easy embarking and disembarking.

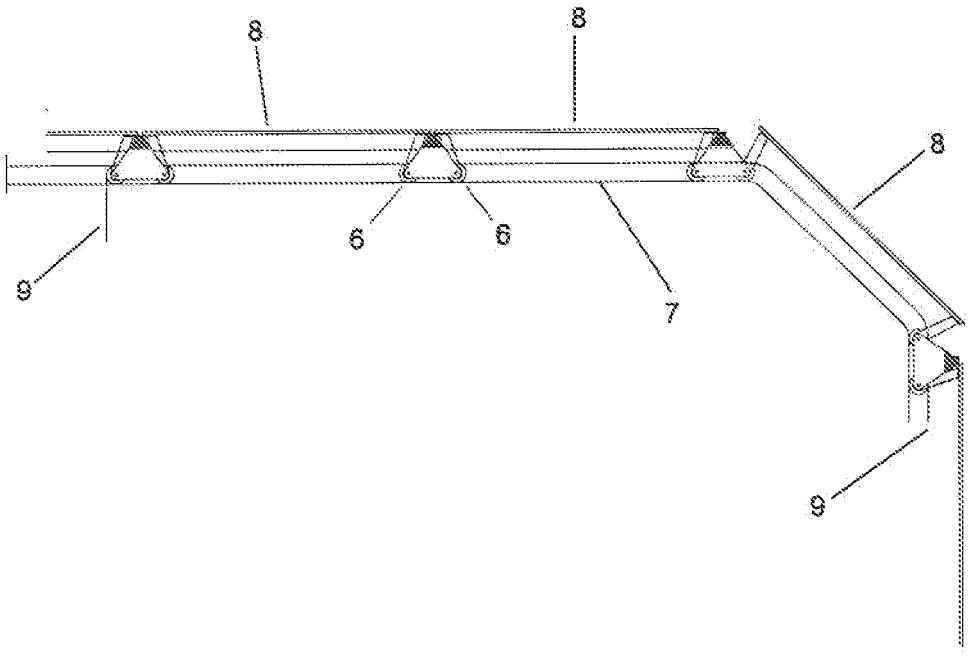

Fig. 5

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Description

Technical Field

[0001] The present invention relates to a watercraft vehicle, such as a tender boat, with a cabin that is easily accessible to the passengers of the boat.

Background

[0002] Usually, most boats have some kind of shelter to protect the passengers from rain and bad weather in general. For boats with cabins on top of the hull, a roof on the cabin is often suitable; however, in many cases, such a roof is stationary leaving no possibility for shifting the roof for better access for the passengers to the cabin or for sailing with the roof open in good weather. A roof that can be shifted, i.e. retracted or deployed is therefore a great enhancement to the boat. For a specific class of boats, namely tender boats, which main purpose is to service larger ships with transport of passengers and supplies, a roof, which can be easily shifted, has large usability.

[0003] Today, many manifestations of moveable roofs are known, one of such is disclosed in US 3,898,947, where the entire roof of the boat can be shifted by rolling means, in such a way that the retracted rolled roof segments hang on each side of the boat, thereby giving the passengers easy access to the cabin.

[0004] However, such a movement of the roof can be cumbersome and time consuming, and the rolled roof segments take up the view for the passengers. Moreover, since the roof sections are made of a rollable material, the roof may not be as resistant to harsh weather and generally not as sustainable as a roof made of harder longer lasting material.

[0005] Included in the class of moveable roofs on boats are foldable convertible manifestations using pivoting means, see for instance US 2008/0066671, where the entire roof can be retracted and deployed.

[0006] However, the type of foldable roof described in US 2008/0066671 is limited in use compared to a sliding opening roof, which is faster and more easy to use. Moreover, for longer boats with larger numbers of passenger, foldable convertible roofs have little use, since the deploying of such a large foldable convertible roof is strongly subjected to excessive weathering and generally cumbersome to deploy and retract.

Summary of the invention

[0007] To overcome the mentioned difficulties, it is the object for the invention to provide a watercraft vehicle with a moveable roof that can easily be shifted, substantially in the horizontal direction. By the term, substantially in the horizontal direction, is meant, in the lengthwise direction of the boat, or in the sidewise direction of the boat, or in an angle between the lengthwise direction and the sidewise direction of the boat, and further the direction can have a vertical component, which magnitude is small when the moveable roof is nearly fully deployed.

[0008] The object is achieved by a watercraft vehicle comprising a hull and a cabin with a moveable roof, thereby giving the passengers easy access to the cabin of watercraft vehicle, said moveable roof shiftably mounted on side and front members extending the hull of the vehicle, said moveable roof, side members, and front members comprise a plurality of sections which can be at least partly transparent. The said moveable roof comprises a plurality of foldable, pivotable and guiding means such as rails, allowing the moveable roof to be moved, in a substantially horizontal direction, into at least one housing facility on the vehicle by use of a plurality of chains and wires connecting said moveable roof to at least one driving means such as an electrical motor which is connected to controlling means such as a control panel on the vehicle.

[0009] In a preferred embodiment of the vehicle, the said moveable roof comprises rails as guiding means and a plurality of planar rectangular solid elements hinged together, i.e. the roof is solid. This embodiment allows faster and more easy deployment or retraction of the moveable roof compared to existing solutions.

[0010] In a second preferred embodiment of the vehicle, the said side and front members are moveable and shiftably mounted and comprise a connection to at least one drive means, whereby a large advantage is realized over existing inventions, since the vehicle easily can change between a wide open or closed manifestation.

Brief description of the drawings

[0011] The invention is disclosed in more detail with reference to the accompanying drawings, in which:

figure 1 is a perspective view of the watercraft vehicle according to a preferred embodiment of the invention,
figure 2 is a top view of the watercraft vehicle in fig. 1,
figure 3 is an end view of the back end of the watercraft vehicle in fig. 1,
figure 4 is a cut away cross section view of a preferred embodiment of the moveable roof on the watercraft vehicle,
figure 5 is a side view of a preferred embodiment of the guiding means for the moveable roof on the watercraft vehicle.

Description of a preferred embodiment

[0012] With reference to the figures, the moveable roof 3 is shiftably mounted 5 on the side members 2 and front members 4 extending the hull 1 of the vehicle. In a preferred embodiment the watercraft vehicle is a boat, where the moveable roof comprises rails 5 as guiding means, and the said moveable roof comprises wheels 6 running

on corresponding tracks 7 by use of a plurality of chains and wires 9 connecting said moveable roof to at least one drive means such as an electrical motor connected to controlling means, for instance a control panel on the vehicle.

[0013] In a preferred embodiment, the side and front members comprise a plurality of sections, which can be at least partly transparent. Furthermore, in a preferred embodiment, the moveable roof comprises a plurality of sections, which can be at least partly transparent, such as planar rectangular solid elements 8 hinged together and the said moveable roof is deployed or retracted in a lengthwise direction into at least one housing facility on the vehicle, for instance under the deck, behind one of the bulkheads, into or behind the side members.

[0014] In another preferred embodiment, a means for retracting or deploying the moveable roof comprises a plurality of rails, wires, cables, chains, hydraulic, pneumatic, magnetic or inductive transfer, racks and spindles.

[0015] In another preferred embodiment, the moveable roof comprises a plurality of foldable, pivotable and guiding means, for instance the use of foldable means to reduce the volume of the said moveable roof when it is retracted into at least one housing facility on the vehicle.

[0016] In another preferred embodiment, a plurality of the side and front members are moveable and shiftably mounted and connected to at least one drive means, for instance to give the passengers a better view by retracting the side members.

[0017] The invention is described above with reference to some preferred embodiments. However, it is realised that variants to these embodiments may be provided without departing from the scope of the invention as set forth in the accompanying claims. For instance, the direction of retraction or deployment of the moveable roof can have a vertical component, allowing for the moveable roof to be at least partly shifted in a custom angle with respect to the horizontal plane and further the shifting direction can be not only lengthwise but also sidewise.

Claims

1. A watercraft vehicle comprising a hull and a cabin with a moveable roof that can be shifted thereby giving the passengers easy access to the cabin of the vehicle, said vehicle comprising
   a cabin comprising front members and side members which extend in a longitudinal direction of the hull of the vehicle,
   a moveable roof shiftably mounted on the side members, and
   a means for retracting or deploying said moveable roof.

2. A vehicle according to claim 1, wherein the moveable roof is shiftably mounted on a plurality of the side and front members.

3. A vehicle according to claims 1 or 2, wherein the moveable roof comprises a foldable structure.

4. A vehicle according to any of the claims 1 to 3, wherein the moveable roof comprises a pivotable structure.

5. A vehicle according to any of the claims 1 to 4, wherein the moveable roof comprises guiding means.

6. A vehicle according to claim 5, wherein the said guiding means comprises rails.

7. A vehicle according to any of the preceding claims, wherein the entire roof of the passenger cabin is shiftably mounted.

8. A vehicle according to any of the preceding claims, wherein the entire roof of the vehicle is shiftably mounted.

9. A vehicle according to any of the preceding claims, wherein the means of moving the roof comprise a plurality of chains and wires.

10. A vehicle according to any of the preceding claims, wherein the side and front members comprise a plurality of sections.

11. A vehicle according to any of the preceding claims, wherein the roof is moved into at least one housing facility on the vehicle.

12. A vehicle according to any of the preceding claims, wherein the roof comprises a plurality of sections.

13. A vehicle according to claim 12, wherein the sections of the said moveable roof are hinged.

14. A vehicle according to claims 12 or 13, wherein the sections of the said moveable roof are planar rectangular elements.

15. A vehicle according to any of the preceding claims, wherein at least one of the roof sections is at least partly transparent, and/or
    wherein the moveable roof is shifted in a substantially horizontal direction, and/or
    wherein the moveable roof is shifted by means of at least one drive means, such as an electric motor, and/or
    wherein a plurality of the side and front members are moveable and shiftably mounted, and/or
    wherein a plurality of moveable side and front members and the moveable roof are shifted by means of at least one drive means, and/or
    wherein a plurality of the side and front members is

at least partly transparent, and/or
wherein the vehicle comprises means for controlling the moveable roof, and/or
wherein the vehicle comprises means for controlling a plurality of the moveable side and front members, and/or
wherein the vehicle is a tender boat.

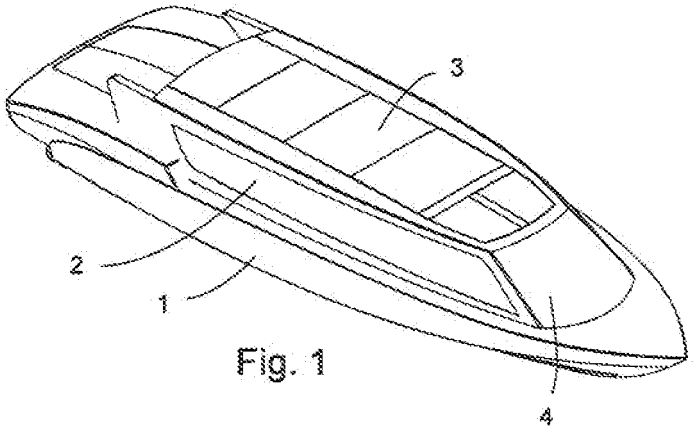

Fig. 1

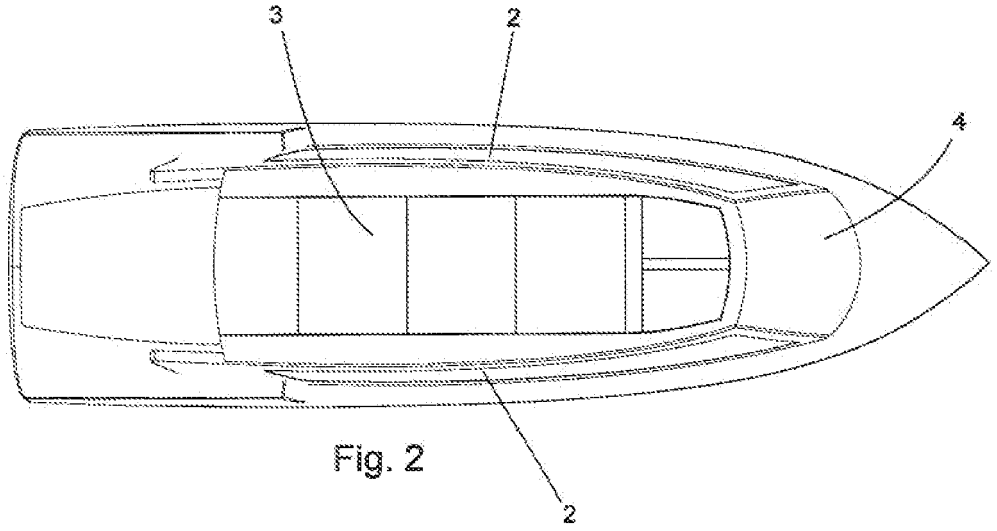

Fig. 2

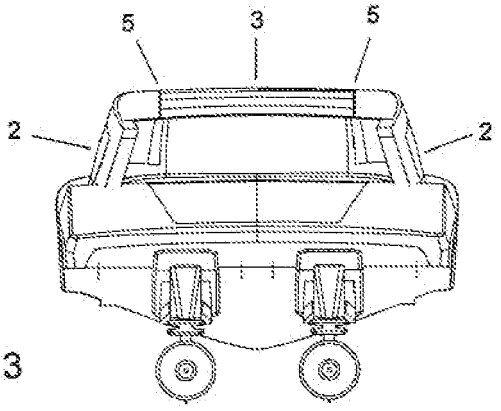

Fig. 3

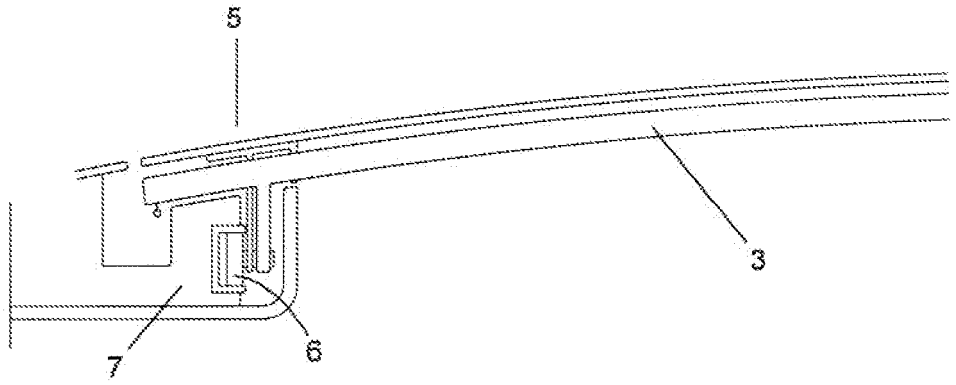

Fig. 4

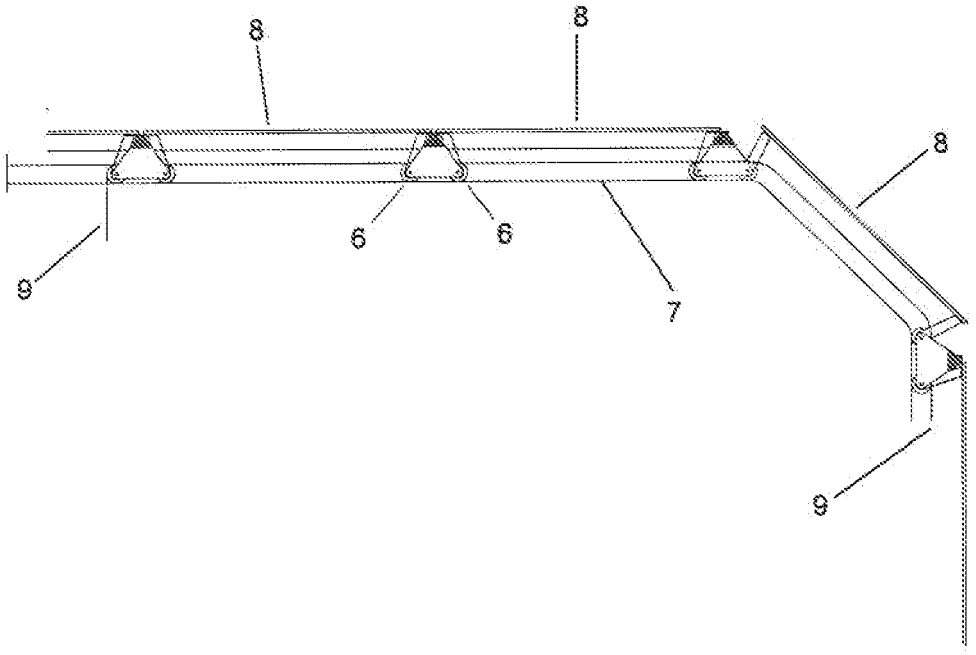

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 08 10 5262

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	11 March 2009	van Rooij, Michael

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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