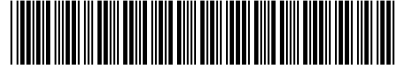


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(54) **Floating vessel**

(57) A floating vessel is disclosed. It comprises a hull (2) having a tapered bow (8) and a deck (9) having a portion that overhangs the hull (2) on either side of the tapered bow (8) to support passengers thereon. The said portion has a forward facing edge that extends across

the top of tapered bow (8). Also disclosed is a floating vessel (7) comprising a hull (2) and an upper deck (9), the hull (2) being provided with compartments below said upper deck to receive mooring equipment (19) in said compartments.

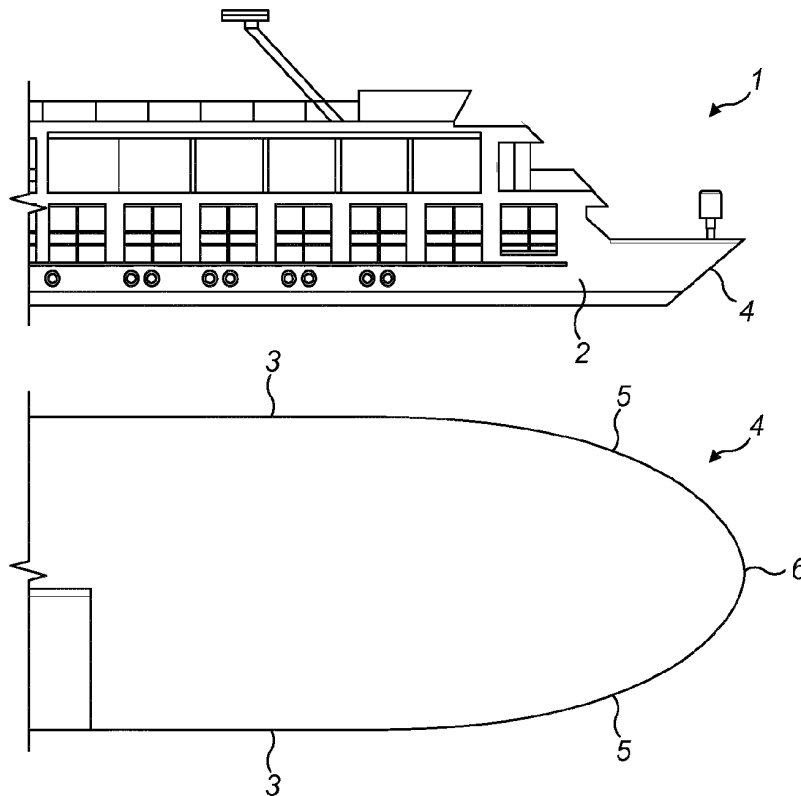


FIG. 1

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Description

Background to the Invention

[0001] Typically, ships have a tapered or pointed bow which cuts through the water to reduce hydrodynamic drag. Passenger ships are designed for maximum stability and the comfort of the passengers but they also need to be hydrodynamically efficient by moving smoothly through the water.

[0002] Typically, a passenger boat for use on a river will have a cutter bow or spoon bow with tapered sides that push water around the sides of the hull as the boat is propelled forwards. However, the tapered sides of the bow mean that the deck space at the front of the ship is significantly reduced compared to the deck space in sections of the boat where the hull is full width.

[0003] It is common to mount mooring equipment, such as anchors, ropes, chains, windlasses and winches on the top deck of a ship, located on each side of the bow. The equipment is located here so that the ground tackle or anchors can be easily deployed overboard for mooring, docking or anchoring. However, this equipment occupies a lot of the limited deck space available in the bow area and operation of the mooring equipment may require this area to be clear of any people or obstructions for safety purposes.

[0004] For many applications, the limited deck space at the bow is detrimental, as it is common for passengers to congregate at the front of the ship to look forward in its direction of travel. However, the number of passengers that may be accommodated towards the front of the vessel is limited to the tapering nature of the bow.

Summary of the Invention

[0005] Therefore, this invention seeks to provide a floating vessel that overcomes or substantially alleviates the problems referred to in more detail above.

[0006] According to a first aspect of the invention, there is provided a floating vessel comprising a hull having a tapered bow and a deck having a portion that overhangs the hull on either side of the tapered bow to support passengers thereon, said portion having a forward facing edge that extends across the top of the tapered bow.

[0007] In a preferred embodiment, the portion of the deck that overhangs the hull has a curved lower surface that blends into the tapered bow.

[0008] The forward facing edge may extend transversely across the top of the tapered bow. This gives the vessel a substantially 'squared-off' appearance to the front, in a region above the tapered bow.

[0009] The forward facing edge can be curved in shape across the front of the vessel.

[0010] The sides of the deck may remain substantially parallel to each other as they extend up to and meet said forward facing edge. The forward facing edge may meet each side at a substantially 90 degree angle.

[0011] The hull may be provided with compartments below said deck to receive mooring equipment in said compartments.

[0012] Hatches may be provided in the hull to enable access to said mooring equipment through said hatches.

[0013] According to another aspect of the invention, there is provided a floating vessel comprising a hull and an upper deck, the hull being provided with compartments below said upper deck to receive mooring equipment in said compartments.

[0014] Hatches may be provided in the hull to enable access to said mooring equipment through said hatches.

[0015] The floating vessel may be a river boat or ferry.

[0016] The aspects of the invention may be combined or remain independent.

Brief Description of the Drawings

[0017] Embodiments of the invention will now be described, by way of example only, with reference to Figures 2 to 6 of the drawings in which:

Figure 1 shows a side view and a plan view of a typical passenger ship;

Figure 2 shows a side view and a plan view of a first embodiment of a passenger ship;

Figure 3 shows an enlarged front view of the passenger ship of Figure 2;

Figure 4 shows an enlarged side view of the passenger ship of Figure 2;

Figure 5 shows a plan view of the top deck at the bow of a second embodiment of a passenger ship; and

Figure 6 shows a plan view of a lower deck at the bow of the ship of Figure 5.

Detailed Description of the Drawings

[0018] Figure 1 shows a side view and a plan view of a typical passenger ship 1. The hull 2 of the ship has generally parallel side walls 3 and a cutter or spoon bow 4 is formed of two curved side walls 5 that taper towards the stem 6 which is also tapered, or raked, relative to the water line to further help the bow 4 push through the water. The side walls 5 of the bow 4 are curved for better stress distribution and hydrodynamic performance; as the bow 4 moves through the water, and especially through waves, the bow pushes water around the hull 2 to reduce the hydrodynamic resistance to movement. It is clear from the plan view that the curved and tapered sides 5 of the bow 4 reduce available deck space. This problem may also be made worse by the typical installation of mooring equipment on both sides of the top deck of the bow, as previously described.

[0019] Figure 2 shows a side view and a plan view of a ship 7 with a deck 9 and a bow 8. The bow 8 sits in the water and comprises curved sides 10 that taper from the parallel sides 11 of the hull 12 to the stem 13, as shown

in the plan view. The deck 9, which is above the water line overhangs the bow and comprises two generally parallel side walls 14 that extend from the side walls 11 of the hull 12, and a front wall 15 that may be substantially straight and generally perpendicular to the parallel sides 11, 14 of the upper bow 9 and hull 12. The front wall 15 is intersected by the stem 13 of the lower bow 8 which is tapered to form a cutter or raked bow type. The lower and upper bows 8, 9 are joined such that the outer surfaces of the bows 8, 9 are smoothly connected, as shown in Figure 3 and 4.

[0020] The 'squared-off' bow design described with reference to Figure 2 gives increased top deck space in the bow area without reducing the hydrodynamic performance of the hull 12. The bow 8 maintains the tapered walls 10 that reduce the hydrodynamic drag on the hull 12 and the deck 9 extends over the walls 10 of the bow 8 to increase the deck space. Figures 3 and 4 show an enlarged front and side views of the front of the ship 7 of Figure 2. The bow 8 is formed of side walls 10 that taper into the stem 13 and define a flat bottom 16 and a raked stem 13. The deck 9 has side walls 14 that extend from the side walls of the hull 12 and a front wall 15 that is generally straight and perpendicular to the side walls 14. As shown, the side walls 10 of the bow 8 are curved to smoothly merge into the side walls of the deck 14 so that a smooth surface is defined between the bow 8 and the deck 14.

[0021] Figures 2 to 4 show that the deck space has been greatly increased over the typical hull and bow design described with reference to Figure 1. The full width of the hull of the ship has been extended to the front of the ship rather than tapering off, as is typical in a conventional boat.

[0022] The ship described with reference to Figures 2 to 4 may be constructed from glass fibre reinforced plastic (GFRP), carbon fibre reinforced plastic (CFRP), aluminium, steel, wood or any other ship hull manufacturing material or technique.

[0023] Figure 5 shows a plan view of the bow 8 and overhanging deck 9 of the ship 7 showing the upper surface 17 of the deck 9. As previously described, the mooring equipment would typically be mounted to the deck 9 on either side of the bow 9. However, this reduces deck space available and may also present an obstruction or safety risk.

[0024] Therefore, as shown in Figures 5 and 6, the mooring equipment 19 is mounted in a compartment or on an equipment deck 18 below the deck 9, so that no space is lost on the deck 9.

[0025] Figure 6 shows a plan view of the equipment deck 18 of the ship 7, which is below the top deck 9 shown in Figure 5. The mooring equipment 19 is positioned adjacent to the side walls 14 of the deck 9 and hatches 20 are provided that can be opened to allow the ropes 21, chains or anchors to be deployed out of the side of the ship 7 for mooring or anchoring purposes. Bollards 22 are positioned adjacent to the hatches 20 to control the

angle at which the ropes 21 leave the ship 7 to avoid damaging the hatches 20 with the ropes 21. The hatches 20 can be closed to hide the mooring equipment from view when it is not in use, maintaining the aesthetic qualities of the ship 7.

[0026] Mounting the mooring equipment 19 on the lower equipment deck 18 creates extra top deck space which can be used for other purposes, such as extra passenger space or for mounting other equipment. Furthermore, mounting the mooring equipment 19 on a lower deck 18 allows deployment, maintenance and cleaning to occur out of sight and without disturbances to the operations of the top deck 9.

[0027] The bow design and equipment deck described with reference to the drawings may be applied individually to a ship design or may be used in combination.

[0028] The bow designs described with reference to Figures 2 to 6 are especially relevant to river bound passenger ships, such as described, because the increased deck area can be used as extra social or living space for the passengers without reducing the stability of the boat or the comfort of the ride.

25 Claims

1. A floating vessel comprising a hull having a tapered bow and a deck having a portion that overhangs the hull on either side of the tapered bow to support passengers thereon, said portion having a forward facing edge that extends across the top of the tapered bow.
2. The floating vessel of claim 1, wherein said portion of the deck that overhangs the hull has a curved lower surface that blends into the tapered bow.
3. A floating vessel according to claim 1 or 2, wherein said forward facing edge extends transversely across the top of the tapered bow.
4. A floating vessel according to claim 3, wherein said forward facing edge is curved in shape.
5. A floating vessel according to any preceding claim, wherein the deck has sides that remain substantially parallel to each other as they extend up to and meet said forward facing edge.
6. A floating vessel according to any preceding claim, wherein the hull is provided with compartments below said deck to receive mooring equipment in said compartments.
7. A floating vessel according to claim 6, comprising hatches in the hull to enable access to said mooring equipment through said hatches.

- 8. A floating vessel comprising a hull and an upper deck, the hull being provided with compartments below said upper deck to receive mooring equipment in said compartments. 5

- 9. A floating vessel comprising hatches in the hull to enable access to said mooring equipment through said hatches. 10

- 10. A river ferry comprising a floating vessel according to any of claims 1 to 9. 15

- 11. A floating vessel substantially as hereinbefore described, with reference to Figures 2 to 6 of the accompanying drawings. 20

- 12. A floating vessel according to claim 8 comprising hatches in the hull to enable access to said mooring equipment through said hatches. 25

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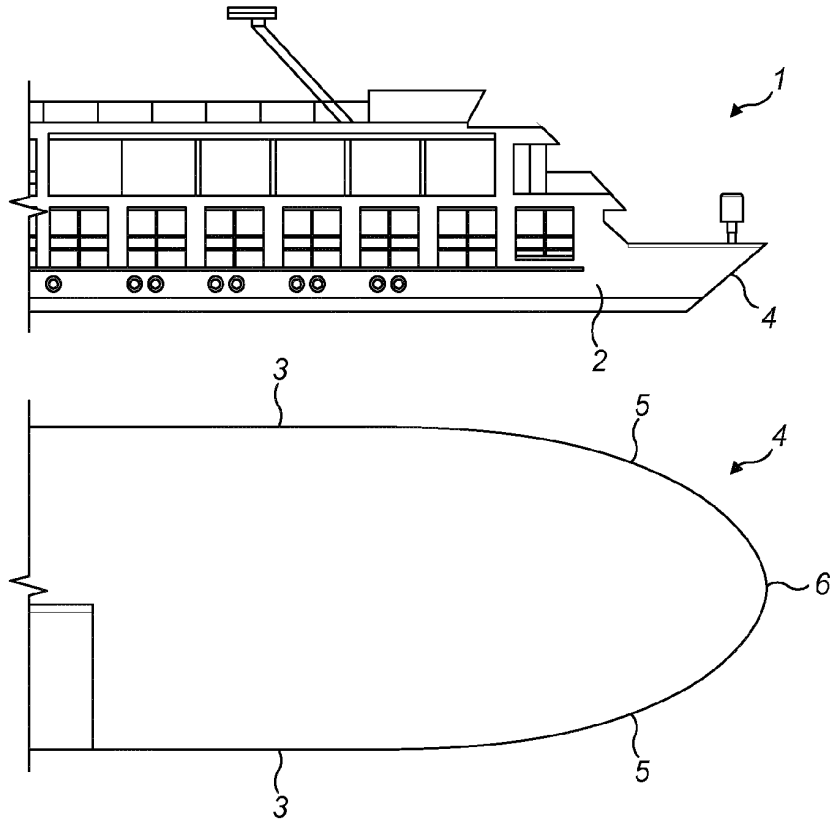


FIG. 1

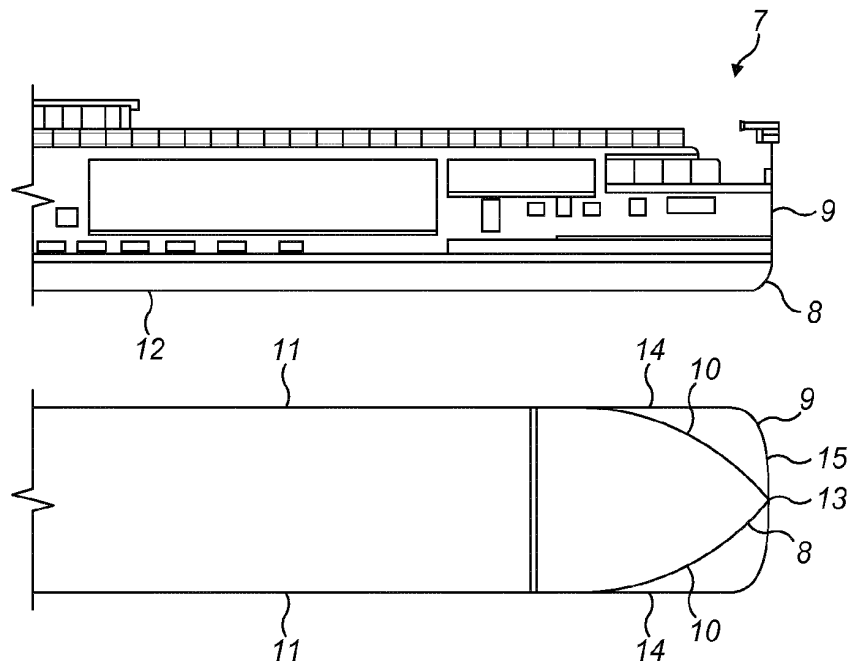


FIG. 2

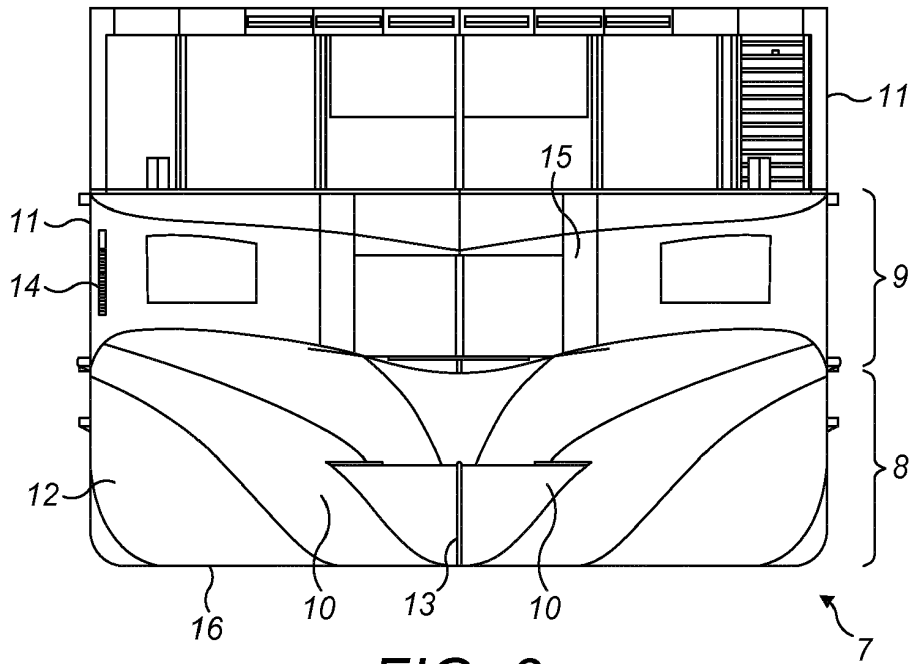


FIG. 3

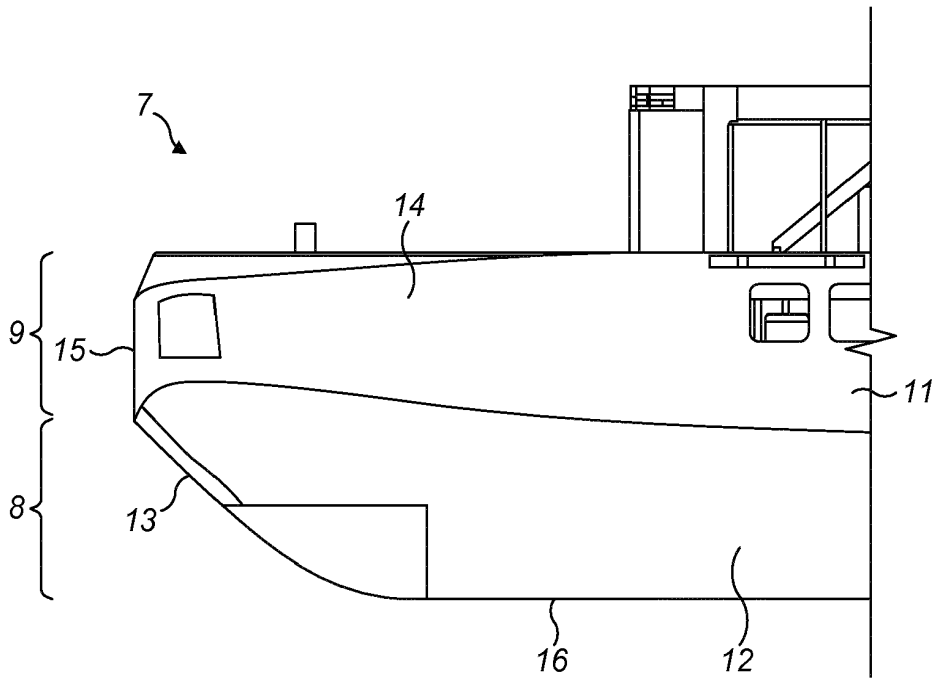


FIG. 4

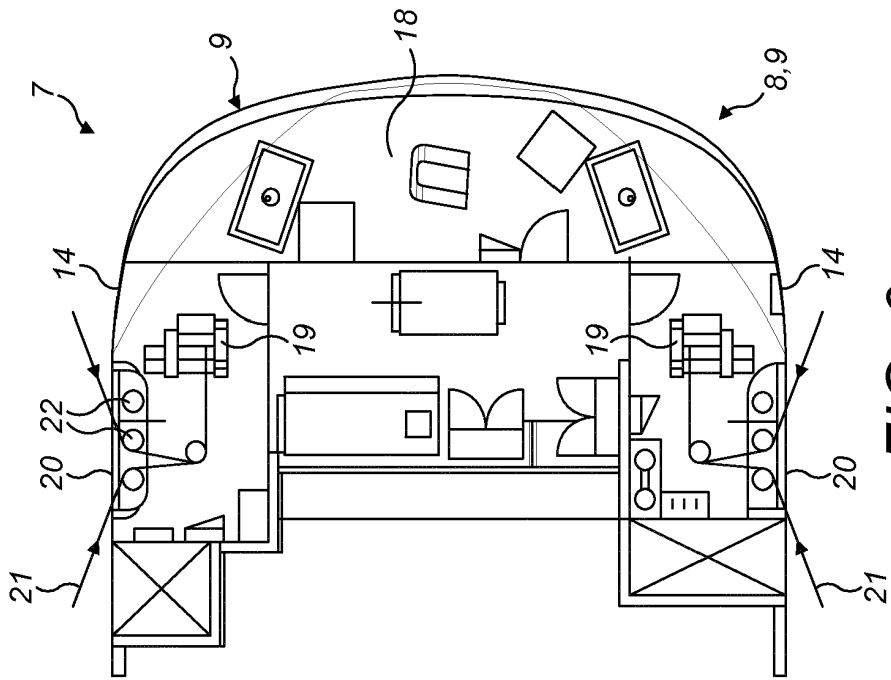


FIG. 6

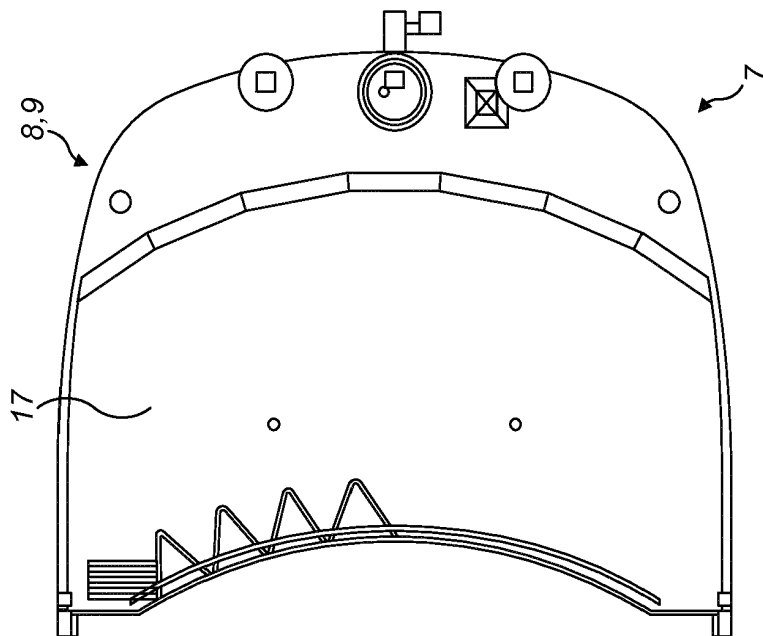


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 13 16 0733

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Place of search Munich		Date of completion of the search 16 August 2013	Examiner Lendfers, Paul
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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