May 5, 1970 T. P. DOYLE 3,509,844

POWER STEERING FOR SHIPS AND BOATS

Filed Oct. 4, 1967

Fig. 1.

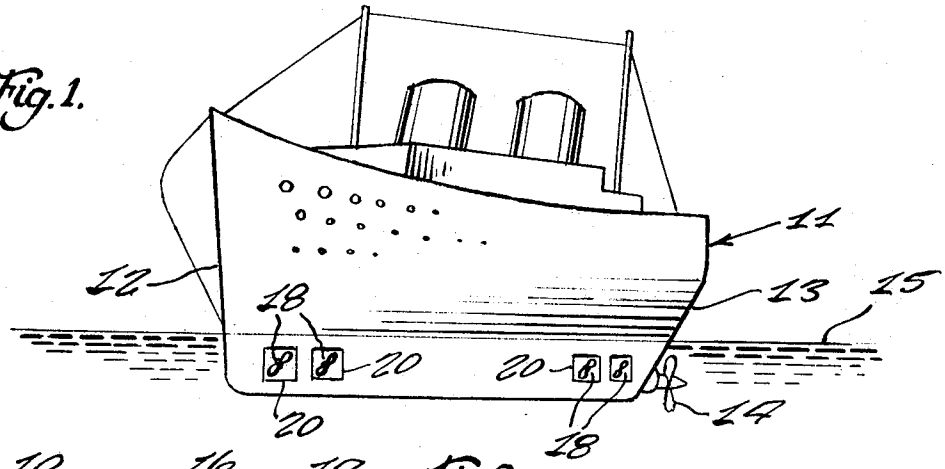


Fig. 2.

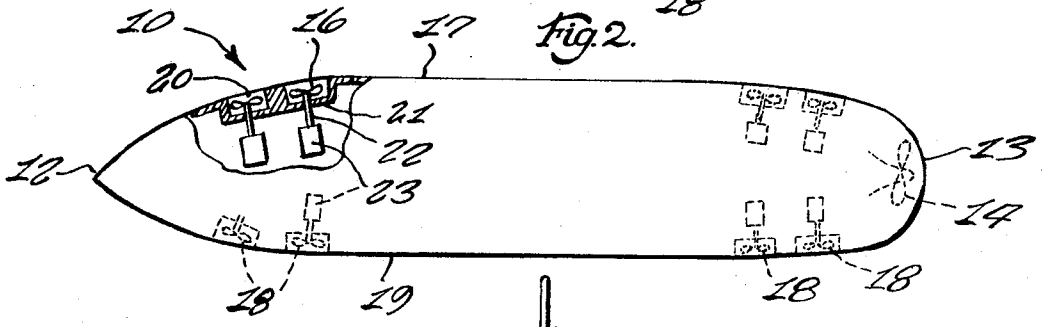


Fig. 3.

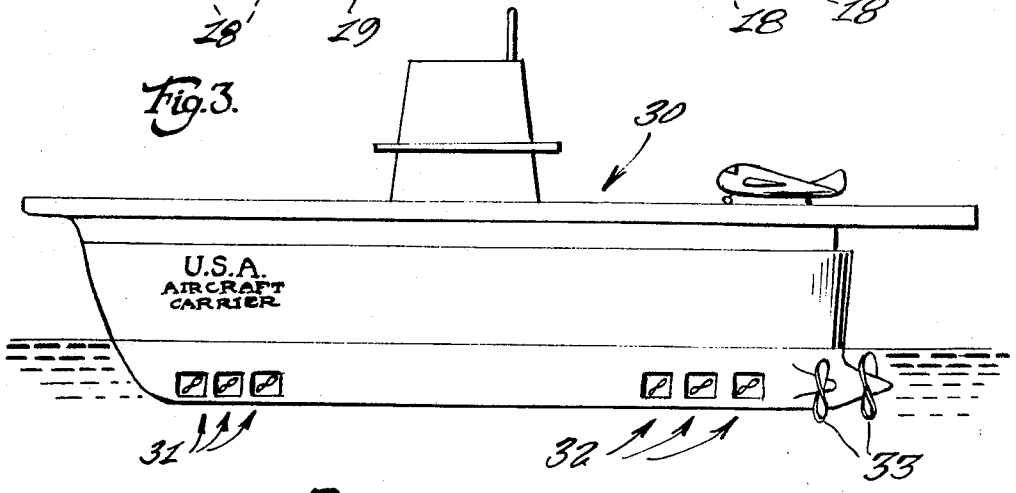
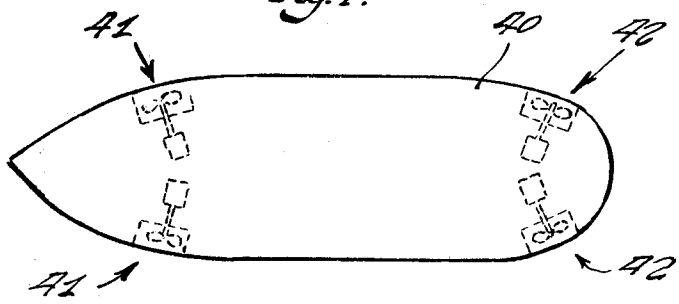


Fig. 4.



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POWER STEERING FOR SHIPS AND BOATS

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U.S. Cl. 114—147 1 Claim

ABSTRACT OF THE DISCLOSURE

An improved steering for a vessel comprising auxiliary propellers along the starboard and the port sides of the vessel, some of the propellers being located relatively close to the bow while others are located relatively close to the stern, whereby the vessel may turn sharply without the assistance of tugboats.

This invention relates generally to ships. More specifically it relates to steering mechanisms for ships.

A principal object of the present invention is to provide an improved steering system for a ship which comprises the provision of a plurality of propellers along the port and starboard sides.

Another object of the present invention is to provide a power steering for ships whereby a ship may turn with great precision without the assistance of tugboats.

Yet a further object of the present invention is to provide a power steering for ships which will permit a ship to turn within a relatively narrow space and wherein the ship may turn around within a space equal to its own length.

Still another object of the present invention is to provide a power steering for ships which will permit a ship to move sideways without gaining headway, and wherein accordingly the ship may dock itself without the assistance of tugs.

Yet a further object of the present invention is to provide a power steering for ships which will permit the ship to hold a course in a narrow channel without danger of going aground.

Yet a further object of the present invention is to provide a power steering for ships whereby the ship may be steered by its propellers located forwardly without the assistance of the conventional rudder.

Other objects of the present invention are to provide a power steering for ships which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specification and accompanying drawing wherein:

FIG. 1 is a perspective view of a ship incorporating the present invention;

FIG. 2 is a top plan view thereof shown partly in cross-section;

FIG. 3 is a side elevation view of a relatively large ship such as an aircraft carrier shown incorporating the present invention; and

FIG. 4 is a top plan view of a relatively smaller boat incorporating the present invention.

Referring now to the drawing in detail, the reference numeral **10** represents a power steering system for a ship wherein, as shown in FIGS. 1 and 2 of the drawing, there is a ship **11** having a bow **12** at its forward end and a stern **13** at its opposite end. As is conventional upon modern ships, one or more propellers **14** extend rearwardly of the ship so as to provide forward propulsion thereof through the water **15**.

In the present construction, the ship may be provided without the conventional steering rudder, the ship being steered by the power steering system **10** which comprises

a plurality of propellers **16** being located along the starboard side **17** and a plurality of propellers **18** being located along the port side **19**.

As is shown in FIG. 2 of the drawing, each of the propellers may be located within a nacelle **20** formed within the hull **21** of the vessel, each of the propellers being operated by a shaft **22** extending through the hull and being driven by a motor or engine **23** within the ship. It will be readily evident that some of the propellers are located relatively close to the bow whereas others are located relatively close to the stern of the ship whereby the propellers may influence that particular portion of the vessel to move sidewardly.

In operative use, when the ship desires to make a rapid turn into the starboard direction, the forward propellers **16** upon the starboard side may be operated so as to pull the bow of the vessel toward the right whereas the propellers **18** located near the stern upon the port side may be made to pull the stern toward the left, thus giving the ship a rotating movement. Likewise the port propellers **18** located near the bow may be reverse operated so as to draw the ship toward the right. Likewise the starboard propellers **16** near the stern may be operated in reverse so as to draw the vessel toward the left. Thus a complete steering control of great precision is made possible by forces applied throughout the length of the vessel instead of only at the stern such as is possible upon conventional vessels employing only a rudder for steering.

In FIG. 3 of the drawing, a relatively large vessel **30** such as an aircraft carrier is shown incorporating the present invention wherein the vessel includes a relatively larger number of propeller assemblies located at the bow of the ship and also in relatively larger number of propellers assemblies **32** located near the stern of the vessel. In the present instance the vessel is shown also provided with a plurality of conventional propellers **33** located at the stern of the vessel for moving the ship forwardly.

In FIG. 4 of the drawing, a relatively small vessel is shown incorporating the present invention wherein only one propeller unit is provided on each opposite side near the bow and another similar propeller unit is provided near the stern. The ship may or may not include conventional propeller at the rear end of the vessel for moving it forwardly, if the propeller units upon the side are sufficiently angled so as to have a component force along the forward-rearward direction of the vessel whereby the propellers along the sides of the vessel may be used for accomplishing the forward movement. Thus is the vessel **40** shown in FIG. 4 of the drawing; propeller units **41** are slightly inclined forwardly, and the propeller units **42** are inclined slightly toward the stern.

It will thus be readily evident that a more precise maneuvering of the ship may be accomplished without the assistance of a tug to allow the ship to dock or travel through a relatively narrow channel.

While various changes may be made in the detailed construction, it is understood that such changes will be within the spirit and scope of the present invention as is defined by the appended claim.

I claim:

1. In a power steering for a ship, the combination of a ship having a bow at its forward end, a stern at a rear end, port and starboard sides on opposite sides of said ship, and said ship being provided with a plurality of propeller units located along said port and starboard sides for controlling the steering of said ship, each of said propeller units comprising a nacelle upon the outer side of a hull of said ship, said nacelle being located below the water line of said hull, a propeller being rotatably positioned within said nacelle, said propeller being mounted upon a shaft extending through said hull and into said ship, and said shaft being driven by an engine located within said

ship, one or more of said propeller units being located at the bow, port and starboard sides and one or more of said propeller units being located at the stern, port and starboard sides, said ship being of rudderless type, said ship including no propeller at its stern, said propeller units along said port and starboard sides being fixedly positioned and being slightly inclined toward the longitudinal axis of said ship so to provide a component force along said forward and rearward axis for forward or rearward propulsion of said ship, and the propellers at the bow, port and starboard side being of fixedly inclined position forwardly while the propellers at the stern, port

and starboard sides being fixedly inclined rearwardly, and each propeller being on an axis which is perpendicular to the side of the hull adjacent said nacelle.

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