L. GABETTI.

STEERING MECHANISM.

APPLICATION FILED MAR. 2, 1909.

928,957.

Patented July 27, 1909.

3 SHEETS—SHEET 1.

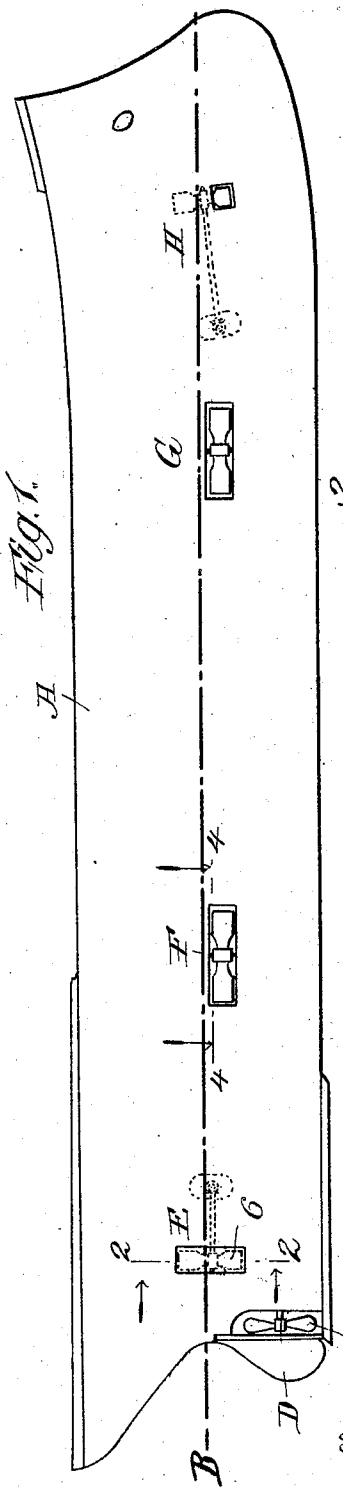


Fig. 1.

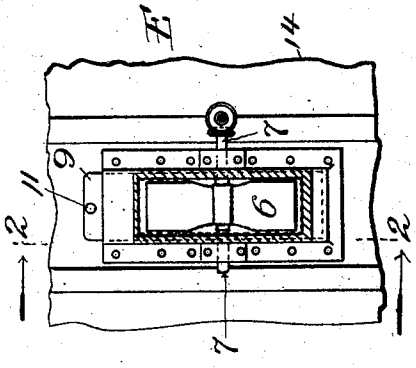


Fig. 3.

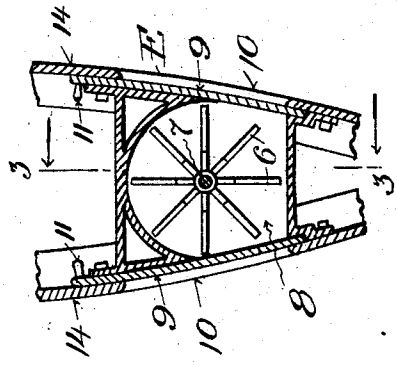


Fig. 2.

Witnesses.

Inventor

Louis Gabetti

By his Attorney

Samuel E. Darby

NORRIS PETERS, INC., LITHO., WASHINGTON, D. C.

L. GABETTI.

STEERING MECHANISM.

APPLICATION FILED MAR. 2, 1909.

928,957. Patented July 27, 1909.

3 SHEETS—SHEET 2.

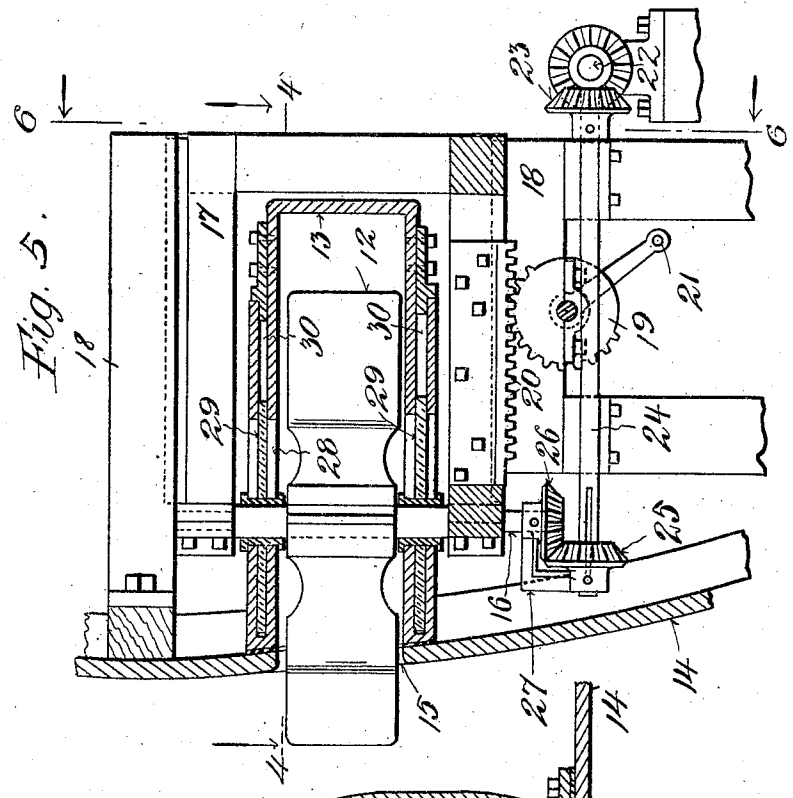


Fig. 5.

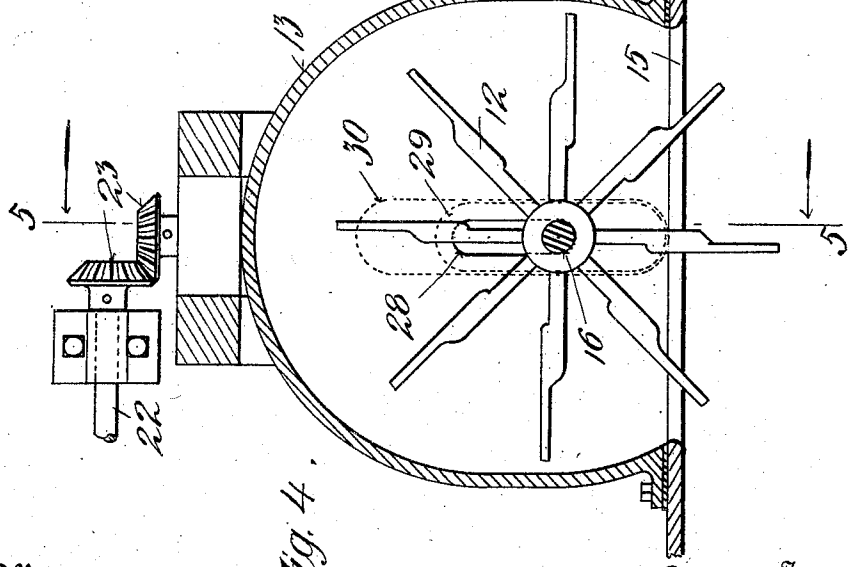


Fig. 4.

Witnesses:
W. W. Benjamin
J. C. Clerc

Inventor
Louis Gabetti
By his Attorney
Samuel E. Darby

MARRIS PETERS, INC., LITHO., WASHINGTON, D. C

L. GABETTI.

STEERING MECHANISM.

APPLICATION FILED MAR. 2, 1909.

928,957.

Patented July 27, 1909.

3 SHEETS—SHEET 3.

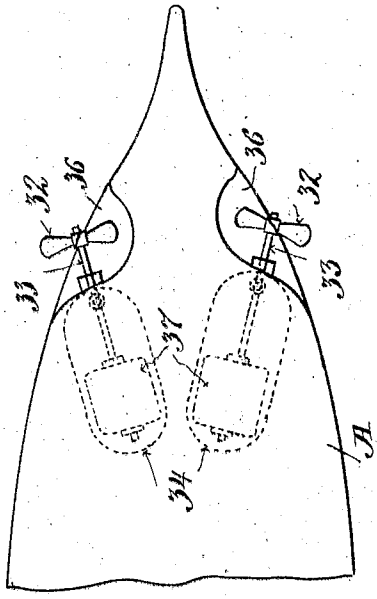


Fig. 7.

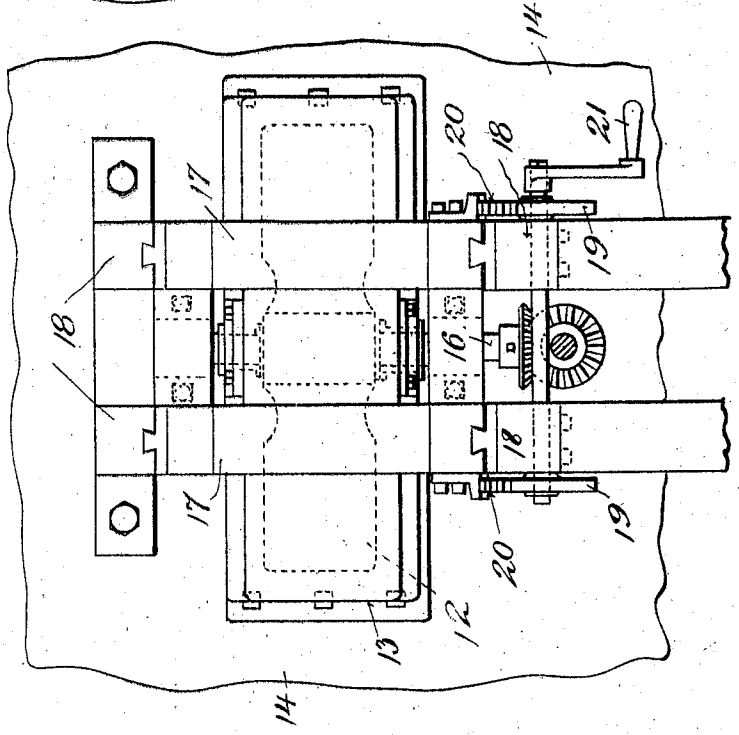


Fig. 6.

Witnesses:
W. B. Benjamin
J. Klein

Inventor
Louis Gabetti
By his Attorney
Samuel E. Darby

NORRIS PETERS, INC. LITHO., WASHINGTON D

UNITED STATES PATENT OFFICE.

LOUIS GABETTI, OF HOBOKEN, NEW JERSEY.

STEERING MECHANISM.

No. 928,957. Specification of Letters Patent. Patented July 27, 1909.

Application filed March 2, 1909. Serial No. 480,936.

To all whom it may concern:

Be it known that I, LOUIS GABETTI, a citizen of the United States, residing at Hoboken, in the county of Hudson, State of New Jersey, have made a certain new and useful Invention in Steering Mechanism, of which the following is a specification.

This invention relates to steering mechanism for ships, boats or other water craft.

The object of the invention is to provide means for steering ships, boats or the like and for maneuvering the same whereby they may be handled expeditiously and easily in difficult places, as, for instance, in making a landing, entering berthing slips, coming alongside of docks, navigating narrow or tortuous channels, or crowded fairways, and without requiring the use of tugs to effect the turning or steering operations.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference signs appearing thereon, Figure 1 is a view in side elevation, somewhat diagrammatic, of a boat showing the application thereto of steering devices embodying the principles of my invention. Fig. 2 is a broken view in vertical section on the line 2, 2, Figs. 1 and 3, looking in the direction of the arrows. Fig. 3 is a broken view in section on the line 3, 3, Fig. 2, looking in the direction of the arrows. Fig. 4 is a broken view in horizontal section on the line 4, 4, Figs. 1 and 5, looking in the direction of the arrows. Fig. 5 is a broken view in section on the line 5, 5, Fig. 4, looking in the direction of the arrows. Fig. 6 is a broken view in section on the line 6, 6, Fig. 5, looking in the direction of the arrows. Fig. 7 is a broken view in diagrammatic plan, showing certain features of my invention.

The same part is designated by the same reference sign wherever it occurs throughout the several views.

In the navigation and handling of ships, boats, or other water craft, and especially in navigating narrow or tortuous channels, crowded basins, harbors, or fairways, and in entering anchorages, slips or channels, or in docking or berthing, the use of tugs or other auxiliary assistance is necessary, and much time is consumed, and not infrequently damage or injury to property and loss of life is suffered through the inability to accomplish the required steering movements of the ship or boat with its ordinary steering devices.

It is among the special purposes of my present invention to avoid these and other objections and practical difficulties encountered in the handling of ships, boats or the like, and to provide auxiliary steering mechanism whereby the boat or ship may be easily and expeditiously handled maneuvered, turned in either direction and on any desired turning radius, or moved sidewise, or otherwise controlled in the direction of movement thereof, thereby reducing danger of collision to a minimum and enabling the ship or boat to come along side of a dock, enter a berthing slip or be otherwise handled without requiring the use, aid or assistance of tugs or other outside agency. These results may be accomplished in a wide variety of ways and by various specifically different constructions and arrangements. While therefore, I have shown and described, and will now describe constructions and arrangements devised by me for accomplishing the objects and purposes set forth, I do not desire to be restricted or confined in the scope of my invention as defined in the claims to the specific details of construction and arrangement shown.

In the drawings reference sign A, designates a ship, boat or the like, and B, the water line thereof. The ship or boat is provided with the usual propeller C, and steering rudder D. These parts may be of the usual or any well known construction and arrangement. In addition to these usual appliances with which ships or boats are ordinarily equipped, I propose, in accordance with my invention, to employ auxiliary steering devices indicated at E, F, G, H, Fig. 1. These may be of any desired construction and controlled in any desired manner, and placed at any desired point to accomplish the objects and purposes of my invention. In practice, and in one form of arrangement as illustrative of an operative embodiment, well adapted for the purposes, I have shown these auxiliary steering devices in the form of paddle wheels. These are preferably arranged to be effective below the water line and at various points along

the length of the vessel, and on each side thereof.

The steering device E is positioned near the stern of the vessel and is arranged to operate in a vertical plane, transversely of the length of the vessel. In this case the wheel 6 is mounted on a shaft 7, and operates in a chamber 8 which may be opened or closed by means of the slide plates 9, controlling openings 10 in the sides 14 of the vessel. By moving these slide plates a transverse opening all the way through the vessel is made and which opening extends through the chamber 8 in which the wheel 6 operates. In practice the wheel 6 is so positioned that in operation, only its lower portion lies below the water line, and is immersed in the water, the upper part of the wheel moving in the closed upper part of the chamber 8. Of course this chamber should be shut off water tight from the interior of the vessel. The slides 9 are received in suitable guides, and may be moved into and out of their closed positions in any suitable or convenient manner, as, for instance, by means of handles 11. By varying the extent of the opening made by these slides when raised the effective action of the wheel 6 may be controlled and varied.

A wheel having the location and arrangement above described is effective to move the stern of the vessel sidewise in one direction or the other according to the direction of operation of the wheel.

The devices indicated at F and G, Fig. 1, are also in the form of wheels 12, which are arranged within casings 13, closed water tight except for openings 15 in the sides 14 of the vessel, the paddles of the wheel operating through this opening. The extent of the projection of the blades of the wheels through this opening determines the degree of effectiveness of the wheels for the accomplishment of their function. In practice I arrange these wheels 12 to operate in horizontal planes, and, to this end, each of said wheels is mounted on a vertical shaft 16, journaled in a frame 17. In order to regulate the degree of effectiveness of the wheel, that is, the degree of projection of the blades thereof through the openings 15, I mount the frame 17, to slide in guides 18 secured to the sides of the vessel. The frames 17, may be shifted in their guides in any suitable or convenient manner, as for instance, by means of pinions 19, engaging in racks 20, secured to said frames, said pinions being actuated by a crank 21, on the shaft thereof, or otherwise, as may be desired. The wheels 12, may be driven in any convenient way. I have shown a simple gearing for this purpose wherein a drive shaft 22, designed to be rotated from any suitable source of power is geared through the bevel gearing 23, to drive a stationary shaft 24 which, through the gears 25, 26, drives the wheel shaft 16. The gear 25 is splined to rotate with shaft 24, but is capable of movement lengthwise thereon, and is connected by a bracket 27, with the gear 26, whereby a driving relation of said gears 25, 26, is always maintained whatever may be the position of adjustment of the frame 17, carrying the wheel 12 and shaft 16. The shaft 16, is arranged to extend through elongated openings 28, in the casing 13, and these openings are maintained closed water tight by means of sliding packing plates 29, connected to move with the shaft 16 in the lateral movements thereof when the sliding frame 17, carrying said shaft is moved. These packing plates slide in pockets 30, formed in the casing 13.

The devices F, G, are located at any desired point with reference to the length of the vessel. Convenient positions therefor are shown where one is located about one third and the other about two thirds the length of the vessel from the stern. In practice these devices F, G, are located on both sides of the vessel.

The devices H, are located near the bow of the vessel and may have the same construction, arrangement and operation as the device E, at the stern and above described. If desired, however, two of these devices may be employed, one on each side of the vessel, as shown in Fig. 7. In this case, and as indicated, each wheel 32, is carried on a shaft 33, which projects through the side of the vessel, and is mounted on a swinging frame 34, whereby the angle of the shafts 33, with the longitudinal center line of the vessel may be varied according to requirements. In this case the wheels 32, operate in pockets or recesses 36, formed in the sides of the vessel, and, as will be evident, the degree of effectiveness of the wheels will depend upon the degree to which the blades of the wheels project beyond these pockets or recesses. The auxiliary steering devices may be operated from any convenient source of power and controlled from any convenient point. In Fig. 7, I have shown motors 37 for this purpose.

From the foregoing description it will be seen that I provide exceedingly simple and efficient auxiliary devices whereby the handling and maneuvering of vessels may be accomplished under its own power without the necessity for the use of tugs or other or similar aid. The vessel may be moved laterally at stern or bow, or both, and in either direction, thereby enabling the vessel to make an expeditious landing at a dock or in a berth, or to navigate safely a narrow or tortuous channel, or a crowded harbor.

Having now set forth the object and nature of my invention and a construction and arrangement embodying the principles

thereof, what I claim as new and useful and of my own invention and desire to secure by Letters Patent is:

1. In a steering mechanism for vessels, a casing formed in the side of the vessel and having pockets therein, said casing opening into the water, a shaft extending through the casing, packing plates arranged in said pockets, and connected to said shaft, a frame in which the shaft is journaled, a steering propeller arranged in the casing and carried on the shaft and means for shifting said frame.

2. In a steering mechanism for vessels, guides mounted in the vessel, a frame mounted in said guides, a shaft journaled in said frame, a casing having elongated openings in the side thereof through which said shaft passes, said casing opening into the water at a point below the water line, a steering propeller arranged in said casing and mounted on said shaft, means for driving said shaft, and means for shifting said frame.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses, on this 24 day of February A. D., 1909.

LOUIS GABETTI.

Witnesses:
GEO. THUTE,
CHARLES FAIST.