Aug. 27, 1929. H. KAPIGIAN 1,725,923

PROPELLING MEANS FOR BOATS

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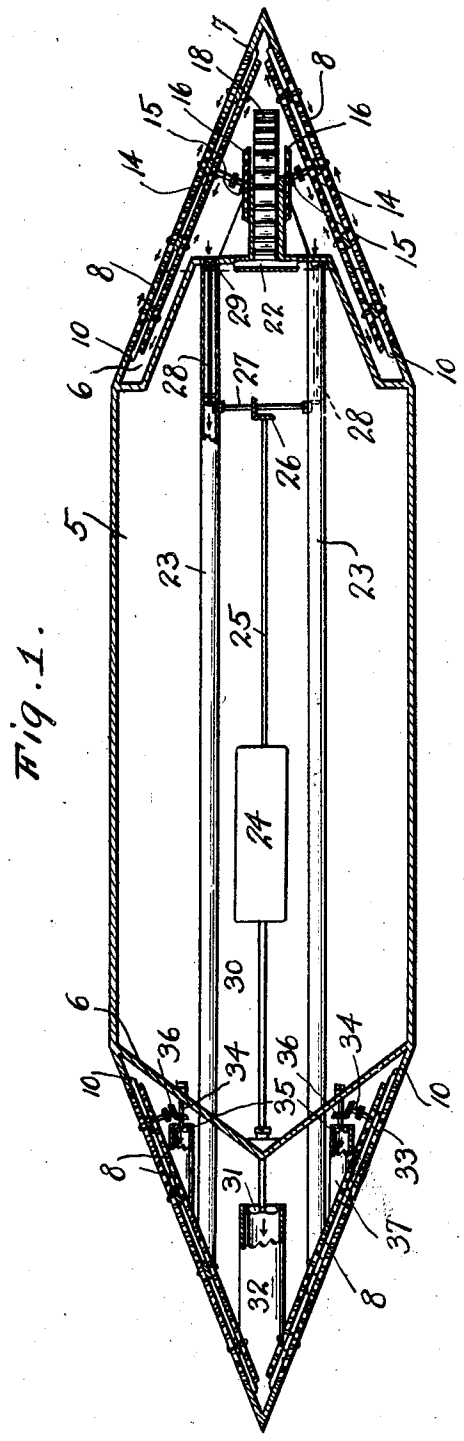


Fig. 1.

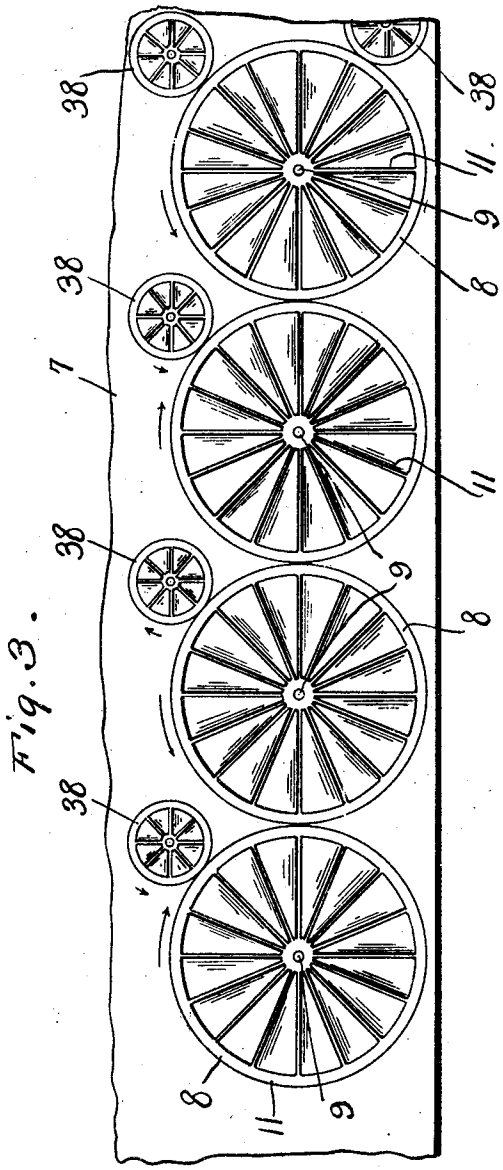


Fig. 3.

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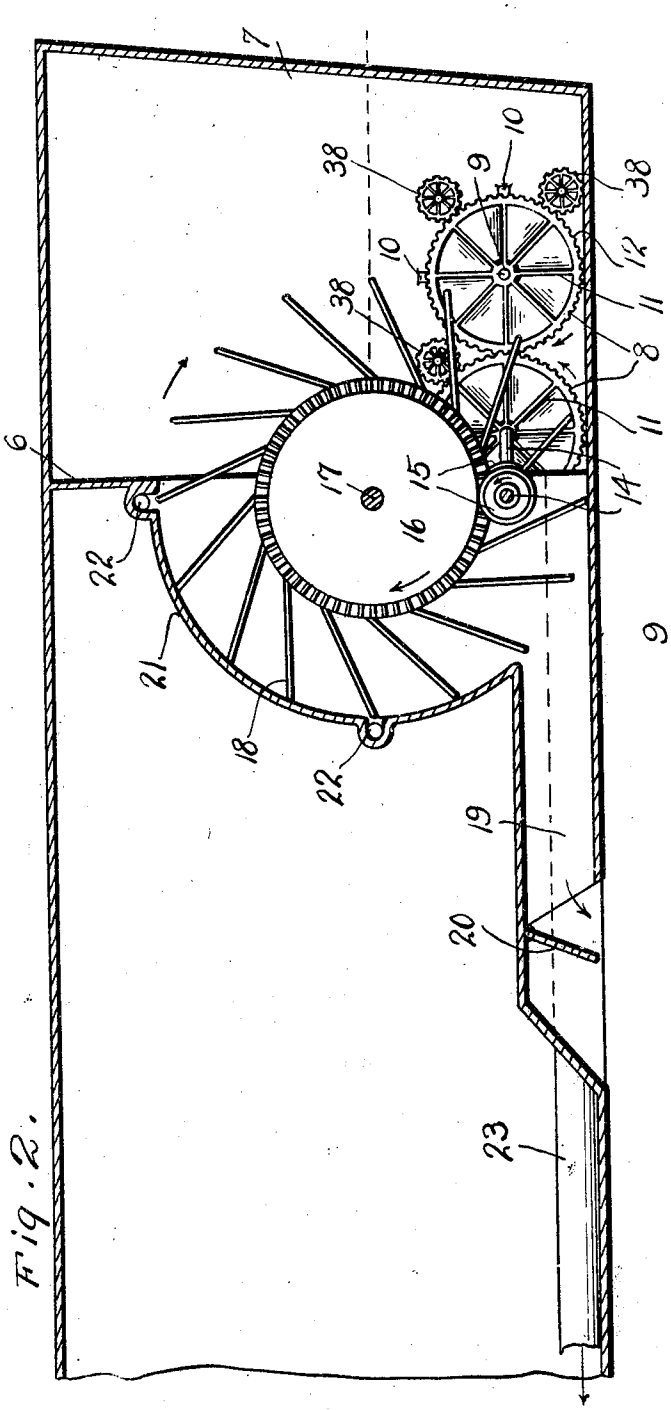


Fig. 2.

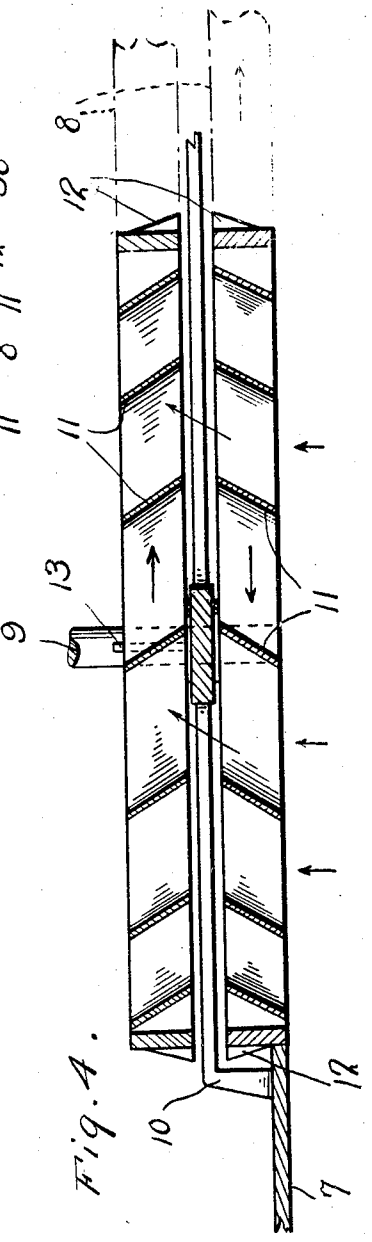


Fig. 4.

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UNITED STATES PATENT OFFICE.

HAIG KAPIGIAN, OF CAMDEN, NEW JERSEY.

PROPELLING MEANS FOR BOATS.

Application filed September 7, 1927. Serial No. 218,078.

This ivention relates to propelling means for ships and has for an object to provide a turbine construction arranged at the bow and stern of the ship and adapted for operation through the movement of the ship and including means operatively connecting the turbines with a paddle wheel whereby to utilize the power derived from the turbine in accelerating the speed of the boat.

Another object is to provide means for utilizing the suction power created by the operation of the regular propeller of the boat for the operation of the turbines arranged at the stern of the boat as a further aid for increasing the speed thereof.

A further object of the invention is to utilize the turbine for relieving the resistance of the water pressure usually encountered by the bow of the boat during its movement through the water.

An additional object is to provide an apparatus of this character of simple and practical construction, efficient and reliable in performance, which does not require any of the power from the engine for the operation thereof, relatively inexpensive to manufacture and install and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the special construction and combination of the various elements constituting the invention, reference being had to the accompanying drawings forming a part hereof, wherein:—

Figure 1 is a horizontal longitudinal sectional view through the boat.

Figure 2 is a vertical sectional view through the bow of the boat.

Figure 3 is a fragmentary elevational view of one of the sets of turbines located at the bow of the boat, and,

Figure 4 is a transverse sectional view through one of the turbines.

Referring now to the drawings in detail, my invention contemplates the use of a boat indicated at 5 having bulkheads 6 near the bow and stern thereof, whereby to form water compartments indicated at 7 at each end of the boat. At each side of the boat adjacent the bow and stern openings are provided in the hull of the boat, below the water line, communicating with the compartments 7 and within which are rotatably mounted turbine wheels 8, upon shafts 9 journaled for rotation within a bracket 10 extending horizontally of the inside of the hull of the boat. The turbine wheels 8 are arranged in pairs on each of the shafts 9 with the blades 11 of each pair of wheels arranged in opposed relation as shown in Figure 4 of the drawing, whereby to increase the force of the water as the same passes from one of the turbine wheels to the other thereof. Gear teeth 12 are formed on the periphery of each of the turbine wheels whereby to inter-engage the turbines at the respective sides of the ship for simultaneous rotation, the turbines arranged on the outer ends of the shafts 9 being freely mounted thereon whereas the turbines mounted on the inner ends of said shaft are keyed thereon as indicated at 13, one of said shafts having an extension indicated at 14 disposed inwardly of the compartment 7 with a bevel gear 15 arranged on the inner end thereof engaged with a ring gear 16 mounted on a shaft 17 which carries a paddle wheel 18.

An outlet passage 19 is formed at the bottom of the boat communicating at one end with the compartment 7 and forming a discharge passage for the water which is forced therethrough by the blades of the paddle wheel 18. The rear end of the passageway 19 is provided with a hingedly mounted door 20 which normally swings open by the pressure of the water being forced thereagainst. One side of the paddle wheel 18 is arranged within a housing indicated at 21 formed in the forward bulkhead 6, outlet pipes 22 being connected with the housing by means of which the water picked up by the blades of the paddle wheel is discharged therefrom.

Outlet pipes 23 are arranged longitudinally of the boat with their forward ends communicating with the compartment 7 and the rear ends thereof discharging water therefrom at the stern of the boat.

The engine 24 provided for operating the boat carries a forwardly extending drive shaft 25, connected by means of gears 26 and a transverse shaft 27 with propeller shafts 28 journaled for rotation within the forward end of the discharge passages 23, the forward ends of said propeller shaft 28 having propellers 29 mounted thereon for forcing the water through the passages.

The engine is also provided with a rearwardly extending drive shaft 30 having a propeller 31 mounted thereon and disposed within a tunnel 32 arranged at the stern of the boat, the forward end of the tunnel communicating with the rear water compartment

7 and discharging outwardly through the stern thereof.

The rear turbine wheels 33 are mounted in a manner similar to the wheels arranged at the bow of the boat and adapted for operating a shaft 34 for driving relatively small propellers 35 through gears 36 also carried within the forward ends of tunnels 37 arranged at each side of the stern of the boat. The suction created through the operation of the main propeller 31 in driving the water from the rear compartment through the tunnel 32 will cause the operation of the rear turbine wheels 33 whereby to operate the auxiliary propellers 35, and thereby further assist in driving the water from said rear compartment.

A number of auxiliary turbine wheels indicated at 38 of a relatively smaller diameter, may be positioned at the bow and stern of the boat, and also provided with gear teeth engaging the wheels 8 and combining therewith to increase the power for driving the paddle wheel 18.

The arrangement of the turbine wheels at the bow of the boat below the water line thereof will serve to decrease the resistance of the water against the bow of the boat as the same moves in a forward direction, the inrushing water into the compartment 7 operating to drive the turbine wheels which being operatively connected with the paddle wheel will assist in driving the boat forwardly.

It is obvious that the invention is susceptible of various changes and modifications without departing from the spirit or scope of the appended claims, and I accordingly claim all such forms of the device to which I am entitled.

I claim:—

1. In a boat having bulkheads formed at each end thereof whereby to create a water compartment at the bow and stern, a plurality of turbine wheels, positioned at the sides adjacent the end of the boat, a paddle wheel rotatably mounted within one of said compartments and means operatively connecting said paddle wheel with said turbine wheels.

2. In a boat having bulkheads formed at each end thereof whereby to form water compartments at the bow and stern of the boat, the sides of the boat at the bow and stern having openings formed below the water-line, a plurality of turbine wheels rotatably mounted within said opening, having gear teeth formed on the periphery thereof whereby to operatively engage the wheels for simultaneous movement, a drive shaft extending from one of said wheels, a paddle wheel rotatably carried within the compartment, a ring gear carried by the paddle wheel and a drive pinion arranged on the end of said drive shaft operatively engaged therewith.

3. In a boat having bulkheads arranged at each end thereof whereby to form water compartments at the bow and stern of the boat, the sides of the boat adjacent said compartment having openings formed therein below the waterline, turbine wheels rotatably mounted within said opening, a turbine wheel disposed in axial alinement with each of said first-named turbine wheels and having the blades thereof oppositely disposed, gear teeth formed on the periphery of said wheels providing means for engaging each of the wheels at each side of the boat for simultaneous rotation, a drive shaft extending from one of said wheels, a paddle wheel rotatably mounted within the compartment at the bow of the boat, a ring gear carried thereby, a drive pinion arranged on said drive shaft and operatively connected with the ring gear, a plurality of discharge passages communicating with the compartments in the bow of the boat, propellers operatively mounted in certain of said discharge passages, a plurality of tunnels arranged at the stern of the boat and communicating with the stern compartment, propellers operatively arranged in each of said tunnels, means operatively connecting the stern turbine wheels with certain of said propellers and a power plant carried by the boat operatively connected with the remainder of said propellers.

In testimony whereof I affix my signature.

HAIG KAPIGIAN.