Aug. 11, 1925. 1,548,936

F. A. DUMONT

MEANS FOR PROPELLING BOATS

Filed Nov. 18, 1924 2 Sheets-Sheet 1

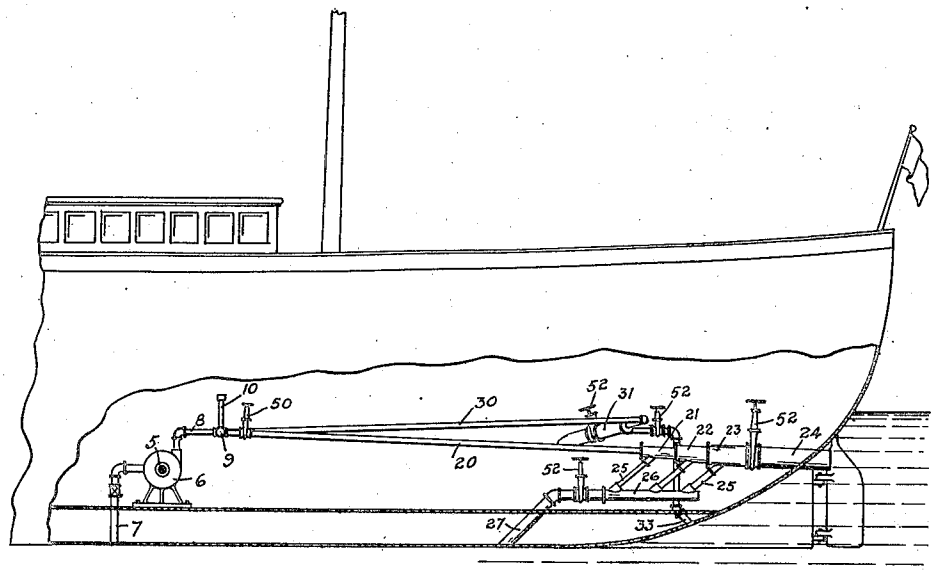


Fig. 2.

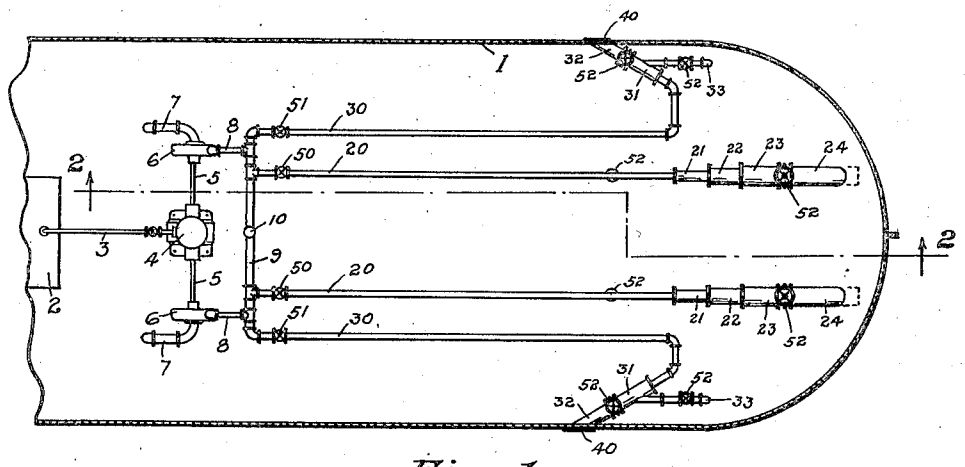


Fig. 1.

INVENTOR
Frank A. Dumont
BY J. R. Rivers
ATTORNEY

Aug. 11, 1925. 1,548,936

F. A. DUMONT

MEANS FOR PROPELLING BOATS

Filed Nov. 18, 1924 2 Sheets-Sheet 2

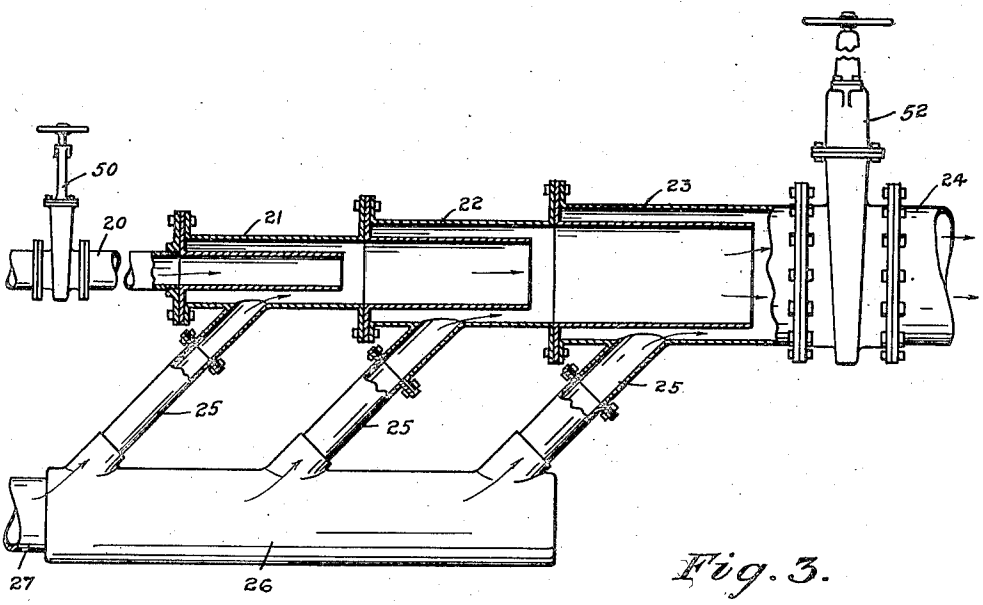


Fig. 3.

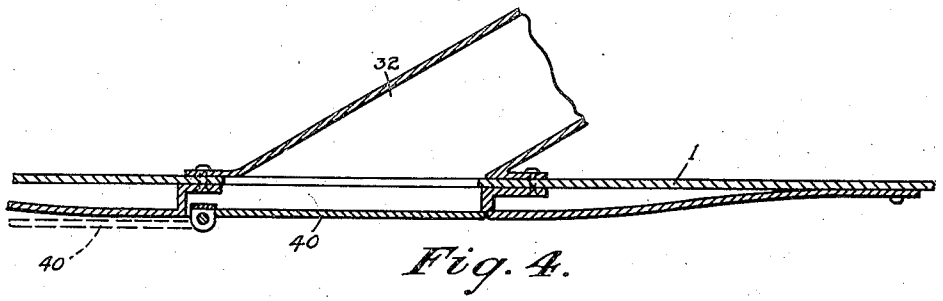


Fig. 4.

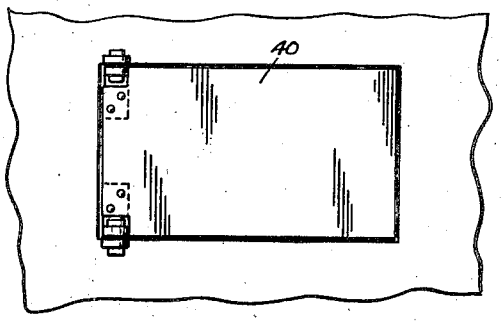


Fig. 5.

INVENTOR
Frank A. Dumont
BY J. K. Rivers.
ATTORNEY

Patented Aug. 11, 1925. 1,548,936

UNITED STATES PATENT OFFICE.

FRANK A. DUMONT, OF SHELTON, WASHINGTON.

MEANS FOR PROPELLING BOATS.

Application filed November 18, 1924. Serial No. 750,669.

To all whom it may concern:

Be it known that I, FRANK A. DUMONT, a subject of the King of Great Britain, residing at Shelton, in the county of Mason and State of Washington, have invented new and useful Means for Propelling Boats, of which the following is a specification.

My invention has reference to improvements in devices for boat propulsion wherein water is utilized as the primary actuating force; and its objects are, to provide in a boat suitable pumping means and mechanism associated therewith through which water is received, and ejected with sufficient force to propel the boat in the direction desired; and, to afford simple mechanism, in lieu of the usual screw propeller, having no outstanding parts liable to be broken or disarranged, and which will, when compared with the propelling devices commonly in use, tend to increase the speed of the boat.

Other objects will appear as the description of my invention progresses.

In the accompanying drawings—

Figure 1 indicates in plan, the stern of a boat with the device installed and connected up with a pair of pumps and a source of power.

Fig. 2, is a sectional elevation of the same, a portion of the stern being broken away, and showing the device as drawn on the line 2—2, of Fig. 1.

Fig. 3, an enlarged view, illustrating in detail portions of one of the main discharge pipe lines, valves therefor, a plurality of suction pipes connecting with said line, a manifold for the suction pipes, and in broken section, another suction pipe communicating with the manifold and adapted to extend through the bottom of the stern.

Fig. 4, a sectional view in detail of a side portion of the stern, showing one of the discharge pipes utilized in reversing the boat, and a gate for the free end of the pipe swingingly mounted in said side.

Fig. 5, an elevation of said gate, a side of the stern being indicated by broken lines.

Referring more particularly to the drawings, 1 denotes the stern of a boat, and in the present embodiment of the invention, 2 a boiler, 3 a pipe establishing communication between the boiler and a steam engine 4, and 5, a pair of driving shafts connected up with a pair of pumps 6, of the rotary variety. The particular means for pumping, or supplying power therefor, are not essential elements of the invention and can be varied as may be deemed desirable.

Connected with each pump is a suction pipe 7, the free end of which extends through the bottom of the boat. A pair of discharge pipes 8 of the pump communicate with the header pipe 9, and a standpipe 10, located centrally of the header pipe, is provided for the purpose of affording an air cushion to prevent pounding of water in the pipe lines of the device.

A pair of pipe lines communicate with the header pipe, extend in spaced parallel relation longitudinally of the stern and discharge outside of the boat and on either side of the rudder. These I characterize as the main discharge pipes, and while they are disposed in a horizontal direction, as indicated in Fig. 2, they have a slight pitch downwardly toward the outer terminals to facilitate the flow of water through them. Each of said lines comprises a pipe 20 communicating with the header pipe, and having an enlarged portion adjacent the outer terminal, consisting of the pipes 21, 22 and 23, Fig. 3. Each of said last-named pipes, as it will be noted, is of larger diameter than the preceding pipe, is concentric therewith, and all are secured together by flange connections. The pipe 23 is provided with an extension 24, which is likewise secured thereto and terminates outside of the stern, as shown in Fig. 2.

As detailed in Fig. 3, a plurality of suction pipes 25 communicate with the main discharge pipes and are connected up with a manifold 26. 27 designates a suction pipe communicating with the manifold at one end, and extending through the bottom of the boat at the other end, as is indicated in Fig. 2.

The boat is propelled forwardly by pumping water from underneath the boat through the pipes 7 and then through the main discharge pipes heretofore described; the impact of the water, swiftly ejected through the outer terminals of said discharge pipes at the end of the stern and against the comparatively still and adjacent water, affording the motive power. The enlarged portions of the main discharge pipes, cooperating with the adjacent suction pipes and their connections, are for the purpose of affording a greater head of water and an increase of motive power. The water, forced by the pump through the pipes 20 into the concen-

trically disposed pipes 21, 22 and 23, by virtue of the spaced sections resulting from the concentric arrangement shown, produces a suction effect on the pipes 25 and their connections, thereby serving to draw additional water from underneath the boat into the main discharge pipes and augmenting the flow.

To reverse the boat, water is pumped through the pipes 7 and diverted by valves, to be hereinafter more particularly described, through a pair of pipe lines also communicating with the header pipe and designated as 30. While said pipe lines are disposed in a horizontal direction, they are inclined slightly upward from the header pipe, as indicated in Fig. 2, to afford a greater downward pitch to the discharge pipe 31, with which each is provided. The pipes 31, each are of larger diameter than the pipes 30, to which they are secured by flange connections, and equipped with an extension 32 which continues through the side of the stern and adjacent the bottom. They are also provided each with a suction pipe 33, which extends through the bottom of the boat. Thus, by means similar to those provided for the main discharge pipes, the instrumentalities for reversing the boat include pipes which discharge from each side of the stern, but in a reverse direction, and having each an enlarged portion adjacent its outer terminal and a suction pipe for increasing the flow of water. Obviously, the forcing of water through the last-named pipes and in the directions indicated, will reverse the movement of the boat and propel it backwardly, or the application of said motive power to one line of the reversing mechanism will turn the boat to one side or completely around.

In order that the discharge pipe lines for reversing the boat may remain closed while the boat is moving forwardly, a gate 40, Fig. 5, is provided for each outer terminal thereof. Said gates are swingingly mounted on each outer side of the stern, each adapted to cover the adjacent port when closed, and when opened to lie approximately parallel with a side of the stern, as indicated by dotted lines in Fig. 4. In going forward the pressure of the water will serve to keep said gates in closed position. When the boat is reversed, the doors, loosely mounted as they are, will readily open as soon as water is discharged through said pipes.

The drawings illustrate a plurality of valves as utilized in the device. Said valves may be of any suitable construction. As is evident, the pair designated 50 control the main discharge pipes, and when the boat is moving forwardly they are designed to be in open position, the valves 51, controlling the reverse discharge pipes remaining closed, and in propelling the boat backwardly the respective sets of valves are placed in positions the reverse of those just indicated. The valves denoted by 52 are emergency valves, normally open, and closed only when it is desired that no water enter the pipe lines, as for instance, in making repairs, inspection, or the like.

The suction pipes associated with the main discharge pipe lines and the reverse discharge lines for increasing the head of water to be ejected, as shown in the drawings, are angularly disposed in directions opposite to the movement of the boat, said movement thereby facilitating the entry of water therein.

In utilizing a screw propeller, considerable power is wasted in overcoming the resistance of the water to the turning of the screw. In the present construction, this objectionable feature is obviated, in that a full and direct force is exerted against the water, and by thus reducing friction an increase of speed is obtained for the energy expended.

The device consists of parts which are practically all mounted within the boat, and with the exception of one minor feature—the gate heretofore described—affords no outside projecting elements which necessarily would be more subject to breakage or loss. The mechanism is not complex in character and is designed and adapted to perform its functions at a minimum expense for upkeep and repair.

Changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages, hence I ask that I be not confined to the specific structure set forth.

I claim:

1. In a boat, propelling means comprising pumping means, including suction means extending exteriorly of the boat and a source of power for the pump, a header, a pair of main discharge pipes communicating with the header and extending in spaced relation longitudinally of the stern, an enlarged portion secured to the free end of each pipe, comprising a plurality of pipes secured together, each being of larger diameter than the preceding pipe and concentric therewith, the portion terminating in an extension adapted to discharge rearwardly of the stern, a plurality of suction pipes communicating with the portion, a manifold for the suction pipes, a suction pipe communicating with the manifold and extending underneath the boat, a pair of reverse discharge pipes communicating with the header and extending in spaced relation longitudinally of the stern, an elbow secured to the free end of each of the last-named pipes, carrying an enlarged portion concentric therewith and having an extension adapted

to discharge forwardly of the stern, a suction pipe communicating with the last-named portion and extending underneath the boat, and valves for controlling the pipes.

2. In a boat, propelling means comprising a pump, including suction means extending exteriorly of the boat and a source of power for the pump, a main discharge pipe line, adapted to discharge rearwardly of the stern, having an enlarged portion adjacent its discharge end, auxiliary suction means extending from the bottom of the boat and communicating with the portion, a reverse discharge pipe line disposed on either side of the first-named line, adapted to discharge forwardly of the stern, each having an enlarged portion adjacent its discharge end, auxiliary suction means extending from the bottom of the boat and communicating with each last-named portion, and valves for controlling the pipe lines and auxiliary suction means.

3. In a boat, propelling means comprising a pump, including suction means extending exteriorly of the boat and a source of power for the pump, a plurality of main discharge pipes, adapted to discharge rearwardly of the stern, auxiliary suction means extending from the bottom of the boat and communicating with each of the pipes, a plurality of reverse discharge pipes, adapted to discharge forwardly of the stern, auxiliary suction means extending from the bottom of the boat and communicating with each of the last-named pipes, and valves for controlling the pipes and auxiliary suction means.

4. In a boat, hydraulic propelling means comprising in combination, a pump, suction means therefor extending exteriorly of the boat, main discharge means having an outlet rearwardly of the boat, reverse discharge means having an outlet on either side of the boat, and auxiliary suction means communicating with the main discharge means and the reverse discharge means.

5. In a boat, having hydraulic means for propelling the same including a discharge pipe, an enlarged portion secured to the free end of said pipe, comprising a plurality of pipes secured together, each being of larger diameter than the preceding pipe and concentric therewith, an auxiliary suction pipe communicating with each of the concentrically disposed pipes, a suction pipe having an inlet exteriorly of the boat, and a manifold disposed between the auxiliary suction pipes and the last-named pipe.

FRANK A. DUMONT.