A. & A. M. McDOUGALL.

SELF PROPELLED VESSEL.

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1,022,250.

Patented Apr. 2, 1912.

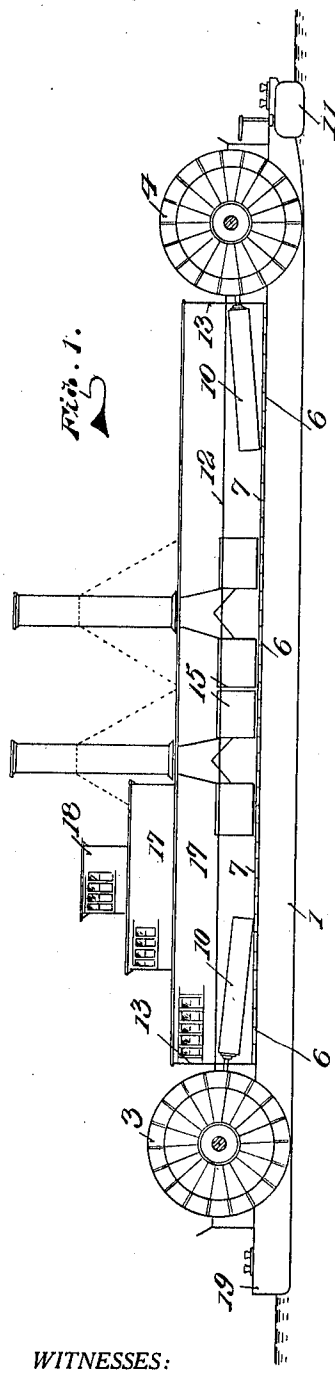

Fig. 1.

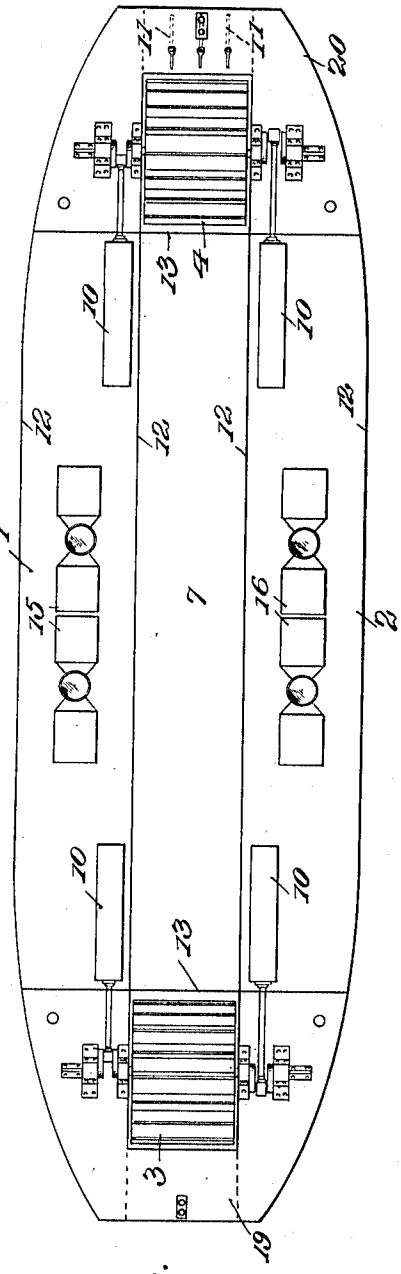

Fig. 2.

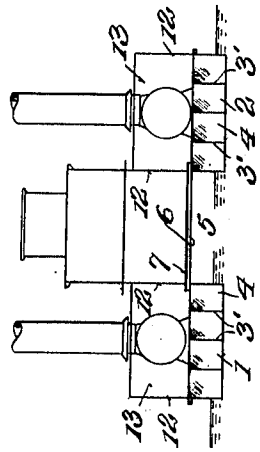

Fig. 4.

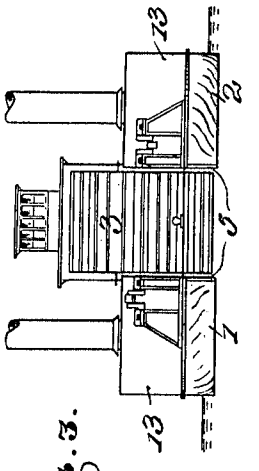

Fig. 3.

WITNESSES:

W. A. Williams.

S. L. Burket.

INVENTORS.

A. McDougall,

BY A. M. McDougall,

A. S. Pattison

ATTORNEY.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALEXANDER McDOUGALL AND ALEXANDER MILLER McDOUGALL, OF DULUTH, MINNESOTA.

SELF-PROPELLED VESSEL.

1,022,250. Specification of Letters Patent. Patented Apr. 2, 1912.

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To all whom it may concern:

Be it known that we, ALEXANDER McDOUGALL and ALEXANDER MILLER McDOUGALL, citizens of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Self-Propelled Vessels, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in self-propelled vessels, which is particularly constructed and adapted for navigating shallow bodies of water, such as rivers and the like.

The primary object of this invention is to provide a self-propelled vessel of the foregoing type with the greatest power possible on the least draft of water.

Another object of the present invention is to provide a vessel of the character referred to of such a design that it is extremely easy of construction and maintenance, and at the same time provides great strength with a small amount of material.

A further object of this invention is to provide a shallow draft vessel capable of being handled with the greatest despatch and in the smallest possible space.

Referring now to the accompanying drawings forming part of this specification—Figure 1 is a longitudinal vertical section of our improved vessel. Fig. 2 is a main deck plan view with the housing omitted. Fig. 3 is a front elevation of our improved vessel. Fig. 4 is a central transverse sectional view.

The primary feature of our improvement is to provide a vessel of the type described in which there is a central longitudinal water channel, in opposite ends of which a propelling paddle wheel is provided, the said paddle wheels capable of being operated independently in the same or opposite directions, or in unison in either direction.

The particular form here shown for carrying out our present improvement comprises two separate hulls 1 and 2, which are arranged in parallel lines spaced apart a distance a little greater than the width of the propelling paddle wheels 3 and 4, the distance of the separation being controlled by the desired width of the composite vessel and the desired width of the propelling wheels which control, to a large extent, the speed and power of the boat. These separate hulls 1 and 2, are rectangular in cross-section amidships, as shown in the central sectional view Fig. 4, and these hulls taper at their bow and stern from their outsides and bottoms, as may be desired and required in making a form of hull that will offer the least or desired resistance to the water. Each of the hulls 1 and 2 is formed of simple construction having numerous longitudinally extending metal girders 3′ for longitudinal strength, and a suitable number of cross bulkheads 4, which provide for transverse rigidity and strength, and also divide the hulls into separate compartments constituting a provision against the sinking of the vessel by reason of collisions or other accident.

Spanning the water channel or space 5, between the hulls 1 and 2 and securely uniting them are transversely arranged steel beams 6, which are securely fastened at their ends to the inner portions or corners of the hulls 1 and 2, as illustrated in Fig. 4. These beams are covered with a strong deck 7, of steel or wood which, together with the deck of the hulls 1 and 2, constitute the main deck of the vessel for supporting the machinery, boilers, coal, cabins, etc.

As here shown, there are separate engines 10 for the two paddle wheels 3 and 4, whereby the paddle wheels are separately and independently operated, which will enable them to be revolved in opposite directions or in the same directions at a uniform or different speeds according to the conditions and requirements in the handling of the boat. Preferably the boilers 15 and 16 are located over the boat hulls and the cabin 17 and pilot house 18 are located in a vertical line over the water channel or space between the two hulls.

By reference to Fig. 2, it will be observed that the decking at the front ends of the hulls extend and inclose the paddle wheel 3, and that the decking 20 at the rear ends of the hulls extend around and inclose the paddle wheel 4. One or more rudders 11 are supported by the decking 20 in rear of the paddle wheels 4, and in a line between the hulls and, therefore, in said water channel. By reason of this location of the rudders the paddle wheels force the water through the channel and against the rudders, thus making the latter extremely effective in the

guiding, quick handling and turning of the boat. If it is desired to turn the boat quickly, by revolving the rear paddle wheel 4, in a forward direction and the front wheel 3 in a rear direction and the two wheels at the same speed, the rudders can be set to turn the boat as upon a pivot in either direction by the rear wheel forcing the water against them while the boat is not moving either forward or backward.

The entire hull space between the paddle wheels 3 and 4 is preferably covered with the cabin and composed of four longitudinal metal walls 12 and transverse walls 13. These walls perform the double function of adding strength to the structure as well as housing for the machinery, freight, etc., and produce a vessel of great longitudinal strength. Furthermore, by reason of locating the paddle wheels well inboard, as here shown, the vibration incident to the running of the vessel is largely or practically done away with as compared with the ordinary form of single paddle wheels supported at the rear end of the vessel upon extended outrigging. Furthermore, it enables the rudders to be so positioned in respect to the rear paddle wheel that they will be extremely effective, as previously explained, in the quick handling of the boat. Furthermore, by reason of this construction should the boat be grounded in the shallow water upon a mud bottom or sandbar, the paddle wheels being positioned, as shown and described, will cause a current of water in such relation to the floating hulls as will enable the vessel to float or force itself from the shallow portion by washing it from under the hulls sufficiently to enable the vessel to be moved.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:—

1. A shallow vessel comprising two shallow hulls substantially rectangular in cross section, each hull having a depth substantially one-third its width, said hulls spaced apart, a deck spanning the space between the hulls and rigidly securing them together, propelling wheels located between and supported by the hulls adjacent their ends, and longitudinal continuous vertical walls located at the inner and outer sides of the hulls to provide longitudinal strength and rigidity to the shallow hulls for supporting the propelling wheels.

2. A shallow draft vessel comprising two shallow hulls, substantially rectangular in cross-section, each hull having a depth not exceeding one-third its width to produce shallow draft hulls, the hulls separated a distance substantially equal to their width, means rigidly connecting the separated hulls, paddle wheels located between and supported by and adjacent the ends of the hulls, means for independently operating the said wheels, whereby they can be revolved in opposite directions to raise the water in the channel between the wheels causing it to flow under the hulls and tend to lift the hulls and wash out a shoal upon which the hulls may happen to ground.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

ALEXANDER McDOUGALL.
ALEXANDER MILLER McDOUGALL.

Witnesses:
FRANK FREGEAU,
S. GEO. STEVENS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."