

(No Model.)

3 Sheets—Sheet 1.

A. McDOUGALL.
VESSEL.

No. 498,681.

Patented May 30, 1893.

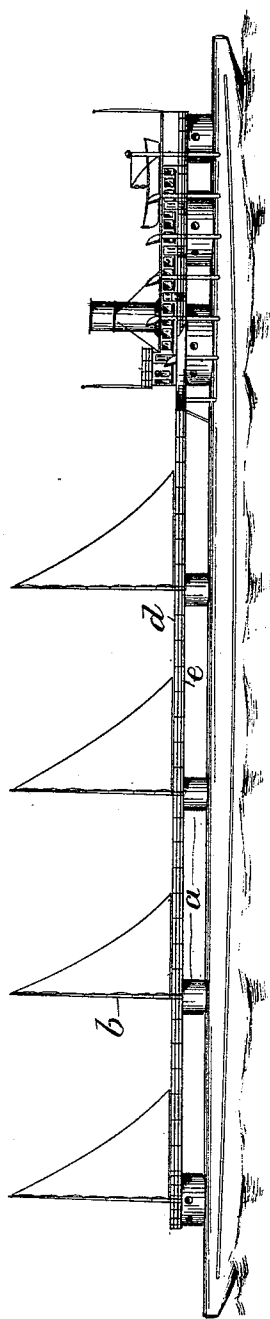


Fig. 1—

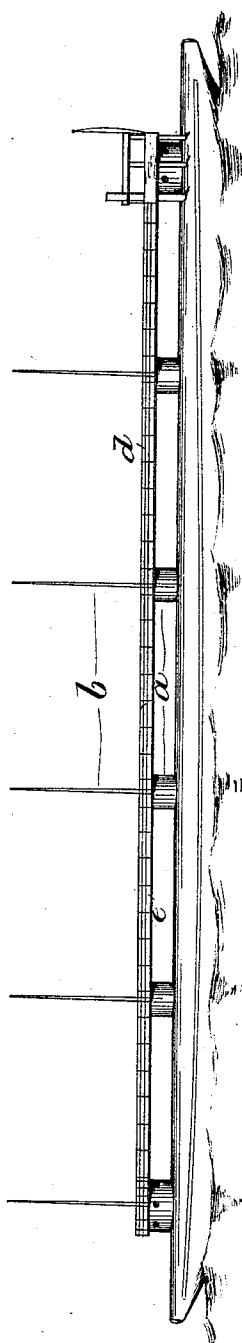


Fig. 2—

Witnesses

Arthur D. Bennett
J. Stack.

Inventor

Alexander Mc Dougall
By his Attorney
Frank L. Ayer

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Fig 5

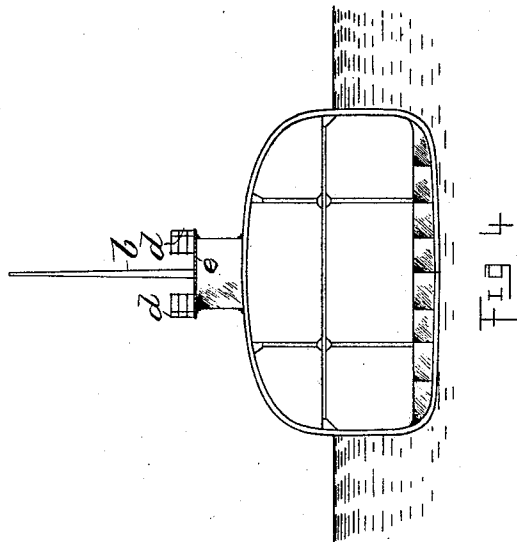
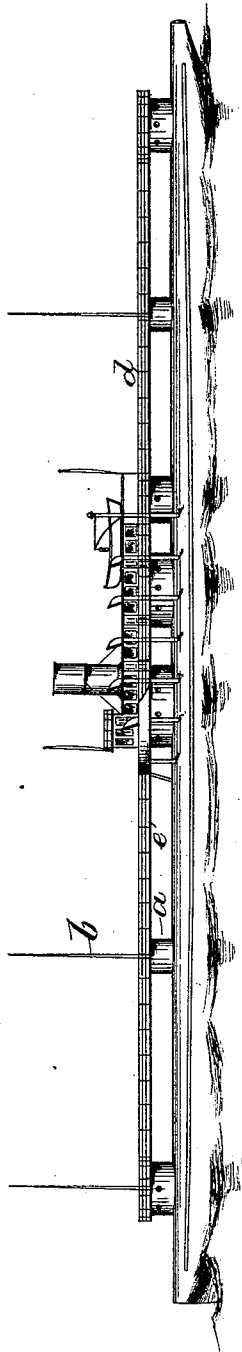


Fig 4

Witnesses

Arthur D. Bennett
J. Stack.

Inventor

Alexander Mc Dougall

By his Attorney

Frank L. Ayer

(No Model.)

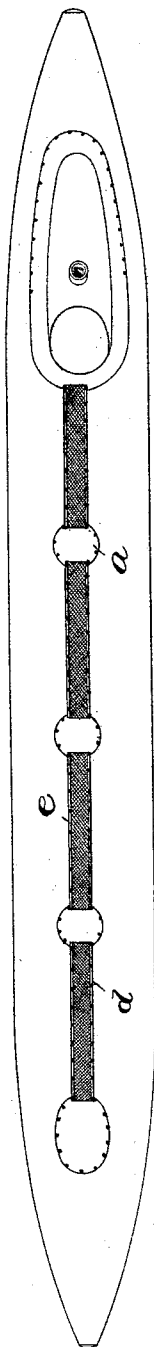
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A. McDOUGALL.
VESSEL.

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Fig. 5.



Witnesses:

J. B. McGinnis
H. D. Orr

Inventor.

Alexander McDougall
by Frank L. Ayer,

Attorney.

UNITED STATES PATENT OFFICE.

ALEXANDER McDOUGALL, OF DULUTH, MINNESOTA.

VESSEL.

SPECIFICATION forming part of Letters Patent No. 498,681, dated May 30, 1893.

Application filed July 29, 1892. Serial No. 441,616. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER McDOUGALL, a citizen 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 Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates particularly to various new and useful improvements in those vessels heretofore invented by me, and described and claimed in several Letters Patent of the United States. The vessels as described in the said Letters Patent, are of two general classes, known particularly as "barges" and "steam-boats," and which differ from one another only in the fact, that the latter class of vessels are provided with mechanism for propelling them, and also with a capacious cabin for accommodating the officers and passengers. So far as the hulls are concerned, the two varieties of vessels are practically the same. These hulls consist generally of steel plates secured to transverse ribs, and the sides thereof are parallel, both longitudinally and vertically. The top is curved, the bottom is slightly rounded, the bow is spoon-shaped and the stern is skedged in the usual way to facilitate steering. It has been found that by reason of the high load line of the boat it is difficult to pass with safety over the curved top, from one end to the other, in heavy weather, since waves are liable to flow entirely over the vessel. By means of the present improvement this objection is overcome, since a perfectly safe and secure passage is offered for the crew in passing from the bow to the stern. The present improvements also increase the efficiency of the vessel in numerous other ways as I shall presently describe. Before beginning a description of my present invention, it is to be understood, that I am not to be limited in any way to the use thereof with the particular vessels to which I have before made reference, since the improvements may be used in connection with other varieties of boats, provided either with curved or flat decks.

For a better comprehension of my invention

attention is directed to the accompanying drawings forming a part of this specification, and in which—

Figure 1. is a side elevation of one of my improved steam-boats attached thereto; Fig. 2. a similar view of one of my improved barges, with the present improvements; Fig. 3. a similar view of a modified form of steamboat, showing the present improvements, and Fig. 4. a sectional view of Fig. 2, and, Fig. 5, a top view of Fig. 1.

In all of the above views corresponding parts are designated by the same letters of reference.

The general features of the steamboat shown in Fig. 1, and of the barge illustrated in Fig. 2, are the same in all respects as that which I have described and claimed in said Letters Patent before referred to. The steamboat shown in Fig. 3, however, differs from any vessel which has been made the subject of Letters Patent, in that the propelling mechanism and cabins are located at or near the central portion of the boat. In this boat also, a wedge shaped or cut away bow may be used instead of the spoon shaped bow. In other respects this particular boat is identical in all its features to that shown in Fig. 1. The three vessels shown in Figs. 1, 2 and 3 are also provided with stern turrets, for entering the interior of the after part of the hull, as I have before described in said Letters Patent. The two steamboats shown in Figs. 1 and 3, are also provided with cabins, supported on large turrets, which features have also been described in prior patents.

The principal features of my present invention are the smaller turrets *a. a. a.* which extend up from the top of the vessel, and are of the same height as the larger turrets. These small turrets are arranged at suitable distances apart, and these small turrets are of the same construction, and are secured to the top of the vessel in substantially the same way as the large turrets. The principal use to which I put these small turrets is to support a suitable passage way, to enable the crew to pass in safety from one end of the boat to the other, as I shall presently describe, but these small turrets also serve many other useful purposes, which further tend to

increase the efficiency of the boat. These small turrets may be used primarily to support suitable masts *b. b.* as shown in the drawings. These masts pass down through a suitable hole formed in the top of the small turrets *a. a.*, and engage with an ordinary step on the top of the vessel, or on an intermediate deck. On these masts sails can be mounted, which are to be of any appropriate construction. For simplicity, however, ordinary leg o'mutton sails are preferable. These sails, when not in use may be rolled up, and stowed away within said small turrets, for which purpose the said turrets are well adapted, being water tight and readily accessible. The sails, when stored, will be kept always in good condition, and within easy reach. The masts before referred to may be a permanent attachment to the boat, for the reason that they will not interfere in any way with the loading and unloading and operation of the vessel, and in this event the said masts may be strengthened, if desired, by means of the usual shrouds and stays, but in view of the rigid support which the said small turrets give to the masts, the use of such shrouds and stays, becomes less necessary.

By making use of numerous short masts, and many small sails, additional security and advantage are obtained, since a small sail is less liable to be blown away than a large sail, and a small sail is handled with greater ease and facility than a large sail. The masts, when a permanent fixture, may be used in the loading and unloading of the boat by mounting a boom on each, carrying a block and tackle in the usual way. These booms may be swung from the dock over the hatchways, carrying the cargo; and thereby greatly facilitating the loading and unloading of the boat. These small turrets *a. a. a.* also serve a very useful purpose when the vessel is used in the transportation of grain and other similar bulk cargoes, which settle materially under the movements of the boat. The vessel is filled entirely with such cargo, and the small turrets are also filled, and connect with the hold of the vessel. When the grain or other cargo settles under the movements of the boat, this material will flow more or less out of the small turrets, so that the hold will be always kept entirely full. In this way, the possibility of the cargo shifting is done away with.

In the case of a vessel for carrying oil, or any other liquid, which expands under the effect of heat, the small turrets also serve for effective use, since being connected with the interior of the boat, they will allow for any expansion of the oil. These small turrets may also be used for loading such a boat with oil, the loading tube being simply passed down through the same, as in ordinary oil boats. In oil boats, it is desirable to divide the boat up into a number of compartments or tanks, each of which may communicate with one of the small turrets *a. a.* By thus dividing the

boat into tanks, or compartments, and by providing each tank with one of the small turrets above the same, a greater or less quantity of oil can be carried, with one or more tanks, entirely full at all times, irrespective of the expansion of the oil. It will be understood that one turret may serve for two compartments.

In addition to the above uses, the small turrets *a. a.* serve to support a passage way *e.* on which the crew may pass in safety from one end of the boat to the other, entirely clear of the wash of the sea over the vessel. This passage way can be of a number of constructions, all of which are intended to be covered and embraced herein. The said passage way may be made of metal plates, secured to suitable supporting irons, so as to form a permanent fixture to the boat. Such a passage way will be very strong and durable, and in many connections, will not interfere with the loading and unloading of the boat. The said passage way, when made of steel plates, secured to supporting irons, being rigidly mounted on the small turrets above the deck, serves as a chord or truss, whereby the hull of the vessel will be strengthened very materially in a longitudinal direction. In cases, where the use of a permanent passage way might prove objectionable, it may be made in sections (see Fig. 5) reaching from turret to turret, to which the sections are to be attached in any suitable manner. Such a passage way, made in sections as I have just described, will offer a safe passage for the crew, and one or more of its sections may be removed at any time, so as to allow of free and uninterrupted access to any or all the hatches, for purposes of loading and unloading. Instead of either of the forms I have just described, a passage-way made of rope netting, or some pliable substance, may be used. This rope netting is to be stretched taut in any suitable way, so as to offer a firm and unmovable construction. The principal advantage of this latter construction is that the rope netting just described, may be quickly removed, and rolled up so as to take up but little space when not in use, and if need be it may be stored within the said small turrets. With any one of the three forms of passage way before referred to, a railing *d. d.* on each side is to be used, for the sake of safety. This railing consists of wire rope, passing through stanchions in the usual way, or instead, any other appropriate construction may be substituted.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. The combination with the hull; of the large turrets for supporting the cabin; the smaller secondary turrets, *a, a,* extending up from the top of the hull; and masts, extending up through said secondary turrets and supported by the same, substantially as set forth.

2. The combination with a hull, of the large

turrets for supporting the cabins, the small secondary turrets extending up from the top of the hull and communicating with the interior of the hold for the purposes mentioned, and a platform or walk made in sections
5 mounted on said secondary turrets, substantially as described.

3. The combination with the hull, of the large turrets for supporting the cabins, the
10 small secondary turrets *a, a*, extending up

from the top of the hull and communicating with the interior of the hold for the purposes mentioned, and a passage way made in sections of rope netting on said secondary turrets, substantially as described.

ALEXANDER McDOUGALL.

In presence of—

A. D. BENNETTE.

J. C. STACK.