

(No Model.)

A. McDOUGALL.
WAR VESSEL.

No. 498,682.

Patented May 30, 1893.

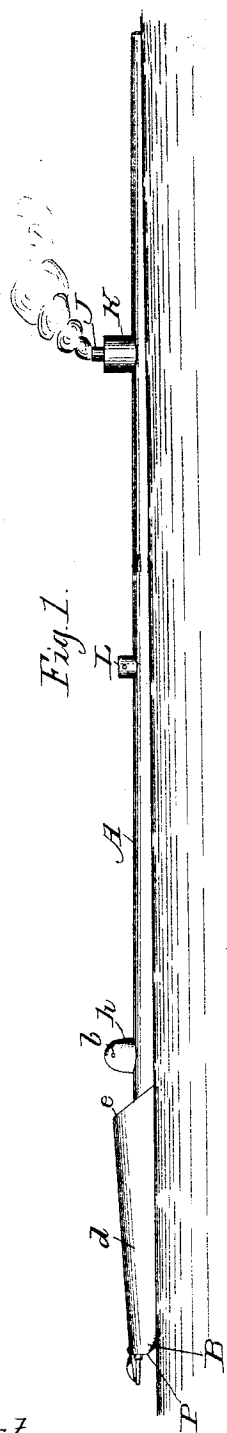


Fig. 1.

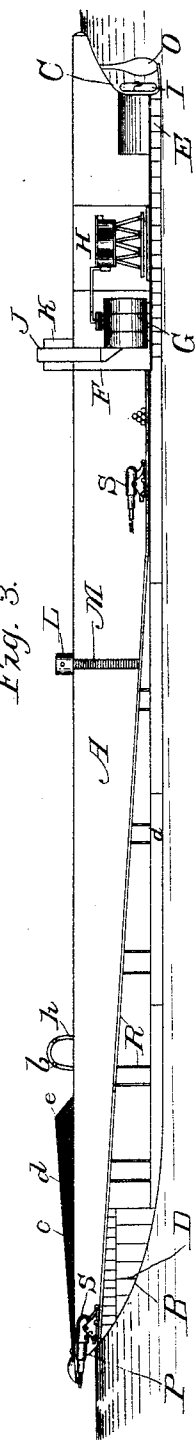


Fig. 3.

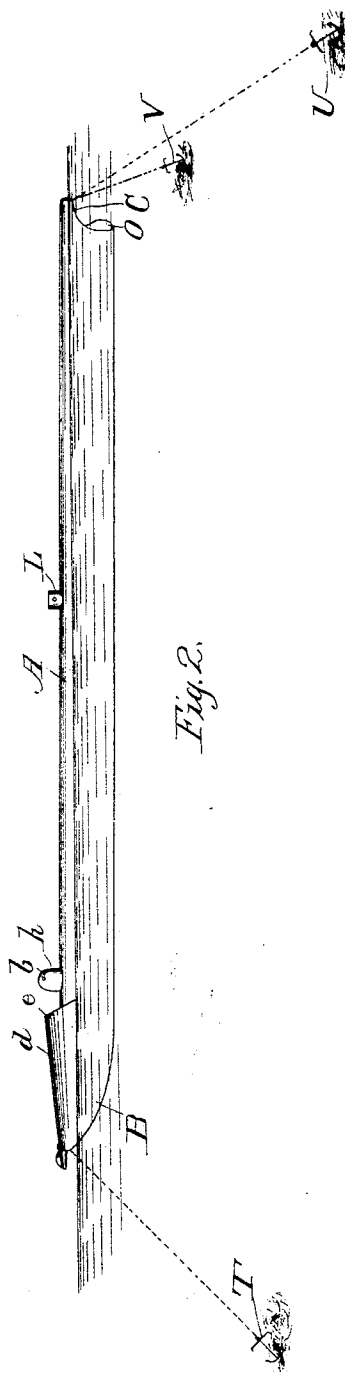


Fig. 2.

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UNITED STATES PATENT OFFICE.

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WAR-VESSEL.

SPECIFICATION forming part of Letters Patent No. 498,682, dated May 30, 1893.

Application filed August 20, 1891. Renewed May 3, 1893. Serial No. 472,910. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER McDOUGALL, a citizen of the United States, residing at Duluth, Minnesota, have invented certain new and useful Improvements in War-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 to an improved type of vessels which are particularly adapted for use in times of war for coast and harbor defense. These vessels are adapted either to be propelled by steam or other power, or to be towed from place to place by suitable towing steamers. The hulls of these vessels are of the same general shape and construction invented by me, and embodied in various Letters Patent of the United States, Nos. 241,813, 259,889, 393,997, 429,467 and 429,468, which have been granted to me or to my assigns, and which have heretofore been used for carrying freight and passengers. Those hulls are provided with straight parallel sides; with a curved top and bottom, and with a spoon shaped bow and stern. In those vessels which have heretofore been patented by me, there have been turrets both near the bow and stern, for supporting working decks, and in case the vessel is provided with propelling mechanism, the turrets at the stern carry a suitable cabin, which offers accommodations to the officers and passengers. In the present vessel those turrets, working decks and cabins are dispensed with. The bow portion of the present vessels is covered above the water line with an auxiliary armor, which consists of wood or other suitable backing, fastened to the outside of the vessel, and covered by a plating of iron, steel or other metal. Directly back of this auxiliary armor and extending a short distance above the same is a conning tower, in which is placed a steering apparatus and which is provided with the usual slots or holes to enable the steersman to see ahead. Some distance in the rear of the conning tower, and at about the central part of the boat, is a heavy metal turret, which is used to enter the hull and for ventilating the same. Upon this central turret are to be carried machine guns, to prevent boarding and to keep off attacks from torpedo boats and small craft.

If the vessel is provided with propelling mechanism, then the smoke stack is placed behind this central turret near the stern.

The matter which has just been outlined, is that which is intended to be covered and claimed herein. So far as the mounting of the guns is concerned it is extraneous to the invention as embodied in this patent. One or more guns may be used, mounted within the vessel, or on top of the same, but preferably so as to point out through the extreme nose.

I have devised an improved means of mounting the guns, within the vessel which I will now describe, but it should be understood that I make no claim to the same herein, since it forms the subject matter of a separate application for Letters Patent, filed by me on the 23d day of March, 1892, and numbered serially 426,123.

The extreme bow or nose of the vessel consists of a heavy circular metal plate made hemispherical in cross-section and which is hinged at the top so as to swing outwardly. Extending down from the nose of the boat in the interior thereof are two or more inclined tracks which converge into a single track at the forward end. These tracks extend back to the engine and boiler rooms and at the lower portion are horizontal. Mounted upon each of said tracks is a gun of any suitable construction which is adapted to be loaded at the lower part of the track, then to be moved up the incline so as to swing open the said hinged plate or nose, then to be fired and finally to be returned to the bottom of the track and reloaded.

The manner of mounting and handling the guns which I have just described, I consider to be most desirable arrangement which can be adapted, but it is to be remembered, that, so far as the present invention is concerned, any desirable and convenient method of arranging and operating the same may be resorted to.

If the vessel is to enter an actual engagement the water tanks at the bow and stern and also the water bottom are filled with water so as to partially submerge the boat and leave only the curved upper deck exposed. When out of an engagement the vessel is ballasted with sand or gravel so as to give her the requisite stability, or if desired, coal or

other fuel can be used for this purpose so that the vessel will be enabled to take long voyages.

When the vessel is provided with propelling mechanism it is to be kept head on to the approaching man-of-war, so as to present only the bow portion to the same which will be but a very small surface owing to the high water line of the boat. The gun or guns within the improved vessel are now fired at the approaching man-of-war preferably from the nose of the vessel and a heavy and rapid fire can be kept up, so as to greatly damage the upper works of the man-of-war, if not to actually penetrate the hull of the same.

The improved vessels would have no difficulty in keeping head on as described, since it has been found that vessels of my improved type can be steered with greater effectiveness than ordinary boats.

My improved vessels can receive little or no damage from shells or shots for the reason that the only portion which is exposed, is of such character that the shot or shell will strike a glancing blow, and for the additional reason that the exposed surface is protected by the auxiliary armor before referred to.

In case the vessel is not provided with its own propelling mechanism, then it is towed by a tug or other propelling steamer to the harbor or entrance which is to be defended. An anchor is now passed out through the bow so as to head the vessels in the direction in which the approaching men-of-war are supposed to be coming. Another anchor is passed out through the stern and is dropped some distance to the starboard side and another anchor is dropped in the same way to the port side. By means of these two steering anchors the stern of the vessel may be swung around so as to point the bow into any position of a wide arc, and in this way the approaching man-of-war may be covered and shelled in precisely the same manner and with equal effectiveness as when the vessel is provided with its own propelling mechanism.

The principal advantage of my present invention is that a vessel of this type can be built very cheaply. Another great advantage is that ordinary freight and passenger vessels of my improved design as described and claimed in said Letters Patent Nos. 241,813, 259,889, 393,997, 429,467, and 429,468, can be quickly and economically converted into vessels of war in a very short time by armoring the bow, removing the turrets and adding the conning tower, central turret, and interior arrangements. Another very important advantage is that very large and powerful guns may be used.

In the present invention the mouth and the greater part of the gun are outside of the vessel so that the concussion caused by the firing of the gun cannot affect the vessel or the crew in any way.

Another reason why very large and heavy guns can be used is that they can be arranged

so that they will be, for the most of the time, below the water line, and will tend to steady the boat instead of making her top heavy as is the case with many modern ships of war.

When a wide harbor or entrance is to be protected it will be an advantageous arrangement to place a number of the vessels in a circular line converging away from the mouth of the harbor or entrance so as to offer practically an impregnable barrier to the approach of any men-of-war or other vessels. If the vessel is not in the engagement and more particularly in the case of a steam vessel, it may be put into very effective use in the transportation of troops or stores; and when necessary the vessel may be quickly reconverted into a freight and passenger boat at but a slight expense.

For a better comprehension of my present 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 war vessels showing the same as being provided with propelling mechanism. Fig. 2— is a similar view of one of my improved war vessels adapted to be towed, and Fig. 3— a cross-sectional view of Fig. 1.

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

A is the hull and B the bow and C the stern thereof. The frame work of said hull consists of transverse frames extending entirely around the interior thereof. The said transverse frames are strengthened longitudinally by means of suitable braces extending fore and aft, and also by the usual keelson and further by means of the false bottom α which forms the top of the water bottom. The said transverse frames are further strengthened by means of cross-stringers or rods, and by vertical braces. Such a frame work is described in Letters Patent of the United States, granted to me on July 28, 1891, and numbered 456,586, and therefore no claim to the same is made herein. To this frame work are secured the outer plates of the vessel, which are riveted to the transverse frames or ribs.

D is a water tank which is placed within the bow of the vessel, and E, is another water tank within the stern thereof. These two tanks connect with the water bottom so that the water therefrom may flow into the water bottom, from which it may be pumped when it is desired to relieve the vessel of water ballast.

F, is a partition which divides the main portion of the hull from the boiler and engine rooms within the stern.

G, are the boilers, and H, is the engine which is to be of any suitable construction.

I, is the propeller which is connected with and is operated by the engine H. Two or three propellers may be used if great speed is desired.

J, is the stack from the boilers which passes

up through the top of the vessel and which is protected by a heavy turret, K.

There is sufficient space between the turret K and the stack J to allow air to be drawn down into the after part of the vessel to ventilate the boiler and engine rooms.

L, is a heavy metallic turret mounted on the top of the hull, about midway between the bow and stern. Air is drawn down through this turret L for ventilating the main portion of the vessel. On top of this central turret L may be mounted one or more suitable machine guns for the purpose of keeping off torpedo boats and to prevent boarding. This central turret also serves as a means whereby the crew may enter the interior of the vessel. A ladder M is used for this purpose. It will be evident that two or more of these central turrets L may be used.

N, is a conning tower made of very heavy metal. This conning tower is provided with a door at its rear through which it may be entered. It is desirable also to provide some means whereby the conning tower may be reached from the interior of the hull.

A door can be used in the conning tower for the reason that the vessel will be kept always head on to any men-of-war, so that the conning tower will be kept always cove, and the officers will be allowed to quickly go on deck when necessary. The conning tower is provided with the usual slots or slits b to enable the steersmen to see ahead. Within the conning tower is the steering apparatus which connects with and operates the rudder O.

P, is a heavy covering of wood or other packing which is secured to the bow portion of the boat and which extends a short distance below the water line. This packing is covered by a heavy metal plating d which is securely fastened thereto and which, together with the packing c constitutes the auxiliary armor before referred to. This auxiliary armor is somewhat thicker at the after part than at the extreme bow part of the boat so that its rear end will offer a convenient bulwark, back of which the officers may view any approaching vessel. This auxiliary armor is all that will be exposed to the fire of shells or shot, and by reason of its incline any shells or shot which may strike it will simply glance off. By making use of the packing, &c., the cost of the auxiliary armor is lessened, and a certain elasticity is given thereto which will further increase its resisting qualities. The auxiliary armor serves to protect the main portion of the conning tower and the central turret, and also the stack when the vessel is provided with its propelling mechanism. It also offers a convenient cover to allow the officers and crew to walk about the deck, or to go from the conning tower to the central turret. It also will enable one vessel to signal to another at its side or back of it without being seen by the enemy.

The manner and means of mounting the guns within or upon the vessel, have no par-

ticular bearing on the present invention. I have invented such means however, which will be embodied in another application for a patent, and as I consider it to be the most advantageous arrangement which can be adopted, it will be briefly described.

P, is the extreme nose of the vessel. This consists of a heavy metal forging or casting which is hemispherical in shape, although it may have a conical or other shot resisting shape. This nose is hinged at its upper end by means of a heavy hinge so as to be swung outwardly.

Q, are inclined tracks of ordinary construction mounted upon a suitable superstructure R and upon which are mounted the guns S. I prefer to use two or more tracks which are to converge into a single track at the forward part of the boat, so that a number of guns may be used and each gun may point directly ahead. The tracks Q are preferably horizontal at the lower ends so that the guns will remain stationary while being loaded. After each gun is loaded it is moved up the track Q by any suitable power and will open the nose P of the boat which will be swung upwardly, although if need be, the nose P may be moved by any appropriate mechanism. The gun is then fired after which it is allowed to move down the tracks where it is reloaded, so that the guns will be fired in alternation. In this way a very rapid and effective fire can be kept up. It is possible to arrange the gun so that when it is passed out through the nose of the vessel it will be fired automatically. It might also be possible to connect the two guns together so that one gun in moving down the inclined track will help to move the other gun up the same.

The powder and shot magazines are to be placed near the bottom of the track so that great facility is had in loading the guns. Owing to the fact that the vessel will always be kept head on to the approaching men-of-war, which can be done easily, all that is necessary for the gunner to do is to get the proper elevation, which can be done by any one experienced in the art of gunnery. When the vessel is provided with propelling mechanism it can be steered very easily by keeping a little headway.

If the vessel is not provided with propelling mechanism then it is anchored in the harbor or entrance in the position illustrated in Fig. 3.

T—is an anchor which is passed out through the bow and the chain of which passes through an ordinary hawse hole either below or to one side of the nose P.

U—is another anchor which is placed some distance to one side of the boat, at the stern thereof, and V. is another anchor which is similarly placed on the other side of the vessel. The chains of these two anchors—U and V—pass in through the stern piece and pass around a suitable capstan or windlass.

By hauling in on one or the other of these stern anchors the stern of the boat may be swung around so as to point the bow in any desired direction to always cover the approaching man-of-war.

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

1. An improved war vessel, consisting of a hull, having a curved top, straight parallel sides, spoon-shaped bow, and skeged stern; an auxiliary armor surrounding said bow, inclined and elevated above the deck at its rear, and above the water line; a conning tower extending up from the main deck behind said auxiliary armor; and a turret L,

also extending up from said main deck, giving entrance to the hold of the vessel, substantially as set forth.

2. An improved war vessel provided with a spoon shaped bow, with an auxiliary armor surrounding said bow, said auxiliary armor extending below the load water line, and above the water line when light, and water tanks for receiving water, so as to partially submerge the vessel for the purpose mentioned, substantially as described.

ALEXANDER McDOUGALL.

In presence of—

FRANK L. DYER,
ARTHUR A. ERB.