

(No Model.)

A. McDOUGALL.
HATCH COAMINGS.

No. 560,362.

Patented May 19, 1896.

Fig. 1

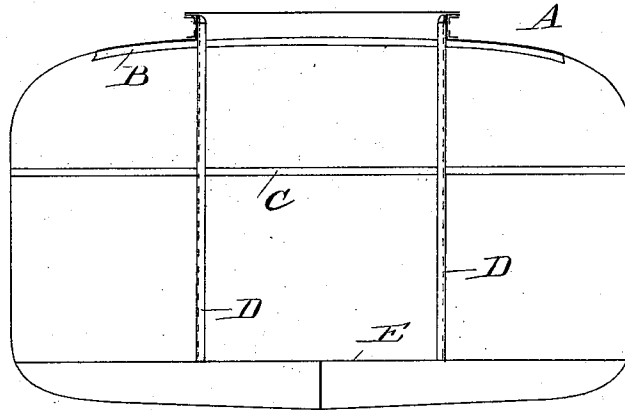


Fig. 3

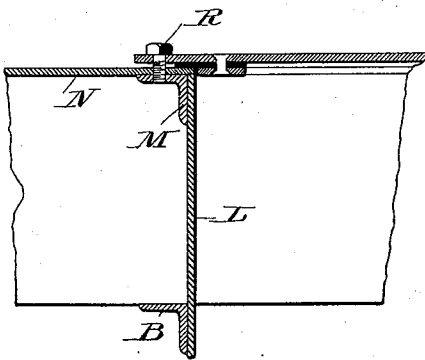
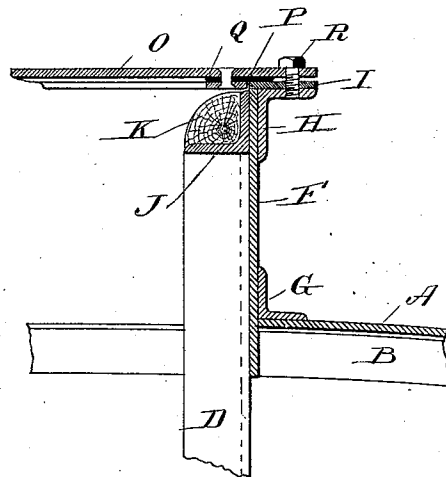


Fig. 2



Witnesses
A. L. Lohon
A. L. Lohon

Inventor
Alexander McDougall
By his Attorney
Francis L. Ayer

UNITED STATES PATENT OFFICE.

ALEXANDER McDOUGALL, OF WEST SUPERIOR, WISCONSIN.

HATCH-COAMING.

SPECIFICATION forming part of Letters Patent No. 560,362, dated May 19, 1896.

Application filed July 16, 1894. Serial No. 517,723. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER McDOUGALL, a citizen of the United States, residing at West Superior, in the county of Douglas and State of Wisconsin, have invented certain new and useful Improvements in Hatch-Coamings; 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 invention relates to various new and useful improvements in hatch-coamings, such improvements being especially adapted for application with the novel type of vessels invented by me and which are now commonly known as "whalebacks." What I propose to do is to provide a hatch-coaming for such vessels extending, preferably, almost the entire length thereof and having hatches arranged at appropriate distances thereon, the spaces between such hatches being occupied by short elevated decks. The hatches which are thus made use of will be capable of being handled with as much facility as when no coaming is used, as in the case of the whaleback vessels referred to, and by the new arrangement which I shall claim hereinafter several important and desirable ends are attained, as will be presently described.

For a better comprehension of these improvements attention is directed to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a cross-sectional view of a whaleback vessel embodying the present improvements. Fig. 2 is an enlarged cross-sectional view of a portion of the hatch-coaming, hatch, and other parts; and Fig. 3, a longitudinal sectional view on the same scale as Fig. 2, showing one of the thwartship-plates, hatch-coaming, hatch, and other parts.

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

Although I have illustrated and shall hereinafter describe my present improvements in connection with a whaleback vessel, it is to be understood that such improvements are applicable to other varieties of vessels.

A is the outer plating of the vessel, such plating being riveted or otherwise secured to continuous frames B.

Heretofore when the hatch-covers have been bolted directly to the deck these frames have been generally cut away at the hatches to enable the vessel to be loaded with greater facility; but with the present improvements these frames may be extended directly across the hatches without interfering with the loading of the vessel, and particularly when cargoes in bulk, such as ore and grain, are being loaded.

C are cross-beams which are generally used to support the arched decks of whaleback vessels.

D D are upright stanchions, which further support the deck and which are arranged in two rows, one on each side of the line of the hatches. These stanchions may be supported either on the false bottom E of the vessel or on the bottom frames thereof. Heretofore these stanchions have extended only as far as the deck of the vessel; but in the present case I extend them as far above the deck as may be desired for the proper height of the hatch-coaming. The stanchions D are formed, preferably, of angle-irons and may be riveted to the frames B at the points of intersection.

F is a continuous plate or plates riveted to the upper portion of each stanchion D and extending from the bow to the stern of the vessel, or for so much of the length thereof as may be desired. The said plates F extend a short distance above the stanchions D and a short distance beneath the deck A, as shown in Fig. 2.

G is an angle-iron which is riveted to the plates F and the deck A and which extends the entire length of said plates. This angle-iron tends to greatly strengthen the joint between these parts and effectively prevents leakage.

H is an angle-iron which is riveted to the outside of the plates F at the top thereof, and I is a liner-iron riveted to the said angle-irons H. On the inside of the plates F, directly opposite the angle-irons H, is riveted an angle-iron J, the position of the latter angle-iron being reversed to that of the angle-iron H.

The angle-iron J rests immediately on the top of the stanchions D, thereby contributing materially to the strength of the deck.

K is a piece of hard wood which is secured between the flanges of the angle-iron J and which is curved or rounded on its outer side. This wood not only contributes to the strength of the coaming, but offers a smooth and easy entrance into the hatch and prevents grain-spouts and loading-buckets, &c., from becoming damaged by contact with the metallic sides of the coaming.

L, Fig. 3, is a plate which forms the front and rear of the hatches, extending from one coaming to the other and of the same width as the plates F. Said plates may, however, be dispensed with. These plates L are riveted at their lower ends to the continuous frames B and at their upper ends are provided with an angle-iron M.

N is an elevated deck which is riveted to the angle-irons M and H between the hatches. The said deck N is composed of plates, which preferably extend across from side to side, and of the same thickness as the liner-irons I, so that the hatches O will rest at their sides on said liner-irons and at their ends on said elevated decks N. So far as the construction of said hatches O is concerned I make no claim herein to the same, since they are described in prior patents granted to me. I prefer, however, to make them of a single plate, provided with a rubber packing P, extending all around and held in place by plates Q.

The hatches are to be secured in position by bolts R, which at the sides pass through the liner-irons I and angle-irons H and at the ends pass through the elevated decks N and angle-irons M. By this arrangement the bolt-holes of the bolts R will be outside of the packing P, and all danger of leakage is therefore overcome. The hatches O may be moved forward or aft to disclose the hatchways in any desirable manner, but preferably by means of small rollers, the shanks of which engage in the bolt-holes, said rollers traveling on the liner-irons I.

The advantages of the particular construction of hatch-coamings above described will be readily comprehended.

The plates F, extending fore and aft and reinforced by the angle-irons G, H, and J, will greatly increase the longitudinal strength of the vessel, and particularly on the deck thereof, which, being cut up by the hatches, is now a common source of weakness. The stanchions D, bearing under the angle-irons J, which connect with the main-deck by the plates F and angle-irons G, will offer a better support for the deck than when riveted only to the frames B. By providing coamings having an appreciable height cargoes can be loaded entirely up to the hatches, and the capacity of the vessel will thereby be increased. The hatches being elevated above the deck there will be less liability of water

entering the same than when flush hatches are used and in the event of insufficient and unsatisfactory packing, and, finally, when at sea the decks N and hatches O will constitute an elevated walk on which the officers and crew may pass in safety from one end of the vessel to the other.

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

1. The combination with a vessel having vertical stanchions arranged on each side of the line of the hatches and extending above the main deck, of vertical hatch-coamings secured to said stanchions above the main-deck, and removable hatch-covers adapted to be bolted to said hatch-coamings, substantially as set forth.

2. The combination with a vessel having vertical stanchions arranged on each side of the line of the hatches and extending above the main-deck, of vertical hatch-coamings secured to said stanchions above the main-deck, elevated decks mounted on said hatch-coamings with spaces between them, and removable hatch-covers adapted to be bolted to said hatch-coamings between said elevated decks, substantially as set forth.

3. The combination with a vessel having vertical stanchions D, arranged on each side of the line of the hatches and extending above the main-deck, of vertical plates F, F secured to said stanchions above the main-deck, angle-irons G, G at the joint of said plates and the main-deck, angle-irons H, at the upper edge of said plates, and removable hatch-covers O adapted to be bolted to said angle-irons H, substantially as set forth.

4. The combination with a vessel having vertical stanchions D, arranged on each side of the line of the hatches and extending above the main-deck, of vertical plates F, F secured to said stanchions above the main-deck, angle-irons G, G at the joint of said plates and the main-deck, angle-irons H, at the upper edge of said plates, angle-irons J, on the inside of said plates, and bearing on the upper ends of the stanchions D and removable hatch-covers O, adapted to be bolted to said angle-irons H, substantially as set forth.

5. The combination with a vessel having vertical stanchions D, arranged on each side of the line of the hatches and extending above the main-deck, of vertical plates F, F, secured to said stanchions above the main-deck, angle-irons G, G, at the joint of said plates and the main-deck, angle-irons H at the upper edge of said plates, angle-irons J, on the inside of said plates, and bearing on the upper ends of the stanchions D, wooden pieces K secured within said angle-irons J, and removable hatch-covers O, adapted to be bolted to said angle-irons H, substantially as set forth.

6. The combination with a vessel having vertical stanchions D, arranged on each side of the line of the hatches and extending above

the main-deck, of vertical plates F, F secured
to said stanchions above the main-deck, an-
gle-irons H, at the upper edge of said plates,
liner-irons I on said angle-irons H, plates L,
5 at the front and rear of the hatches, angle-
irons M at the upper edge of said plates L,
elevated decks N secured to said angle-irons
H and M, and removable hatches adapted to

be bolted at their edges to the elevated decks
N and liner-irons I, substantially as set forth. 10

In testimony whereof I affix my signature
in presence of two witnesses.

ALEXANDER McDOUGALL.

Witnesses:

WM. A. THOMPSON, Jr.,
CHAS. W. LELAND.