(No Model.)

A. McDOUGALL.

DEVICE FOR MOVING HATCH PLATES.

No. 493,282. Patented Mar. 14, 1893.

Fig. 1.

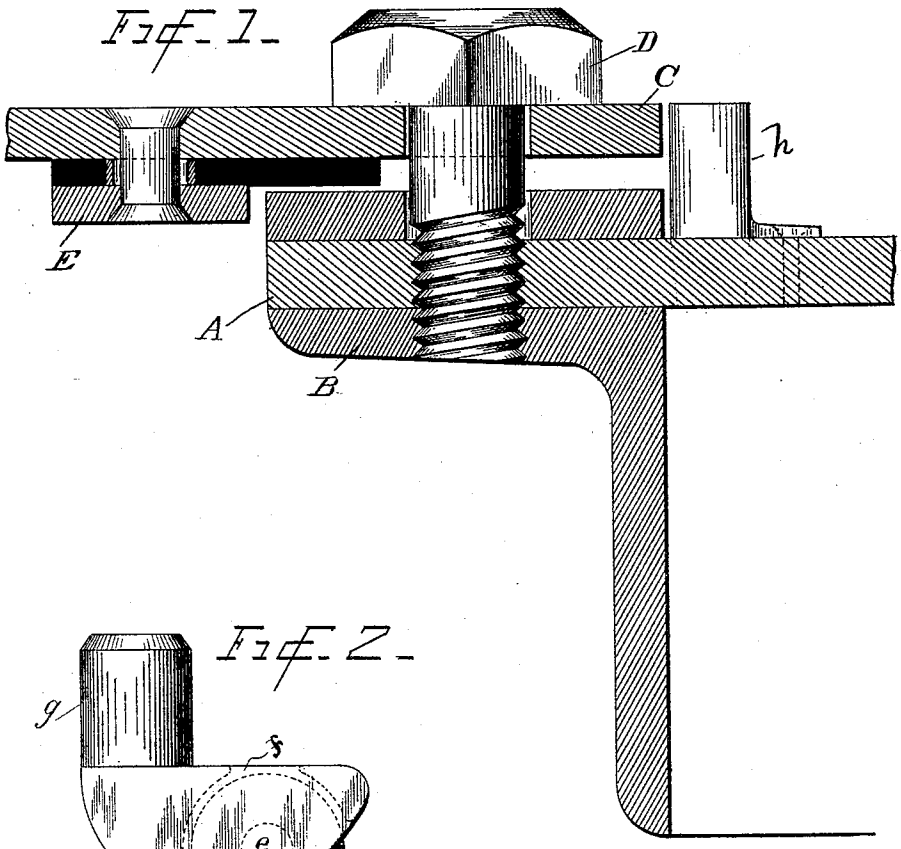


Fig. 2.

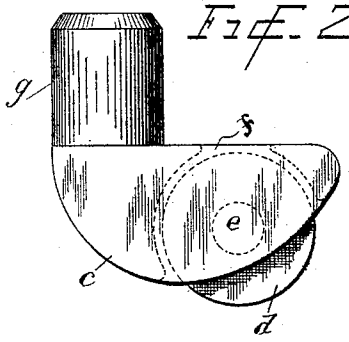


Fig. 3.

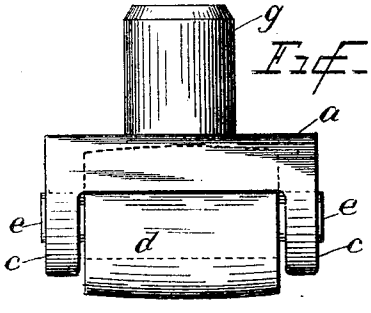
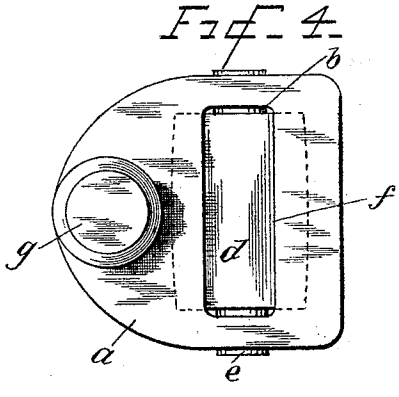


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ALEXANDER McDOUGALL, OF DULUTH, MINNESOTA.

DEVICE FOR MOVING HATCH-PLATES.

SPECIFICATION forming part of Letters Patent No. 493,282, dated March 14, 1893.

Application filed March 27, 1890. Serial No. 345,589. (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 Apparatus for Moving Hatch-Plates; 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 apparatus for moving hatch plates on vessels, and more particularly those vessels which I have invented, and which I have described and claimed in several Letters Patent of the United States, No. 241,813, dated May 24, 1881, No. 259,889, dated June 20, 1882, and No. 393,997, dated December 4, 1888.

Since the present invention relates solely to the upper deck and hatches I will describe only those particular features, but it should be understood at the outset that the apparatus I am to describe hereinafter is not to be used solely with the said variety of vessels, but that it may be used with any vessel and in any instances where large heavy metallic hatches are employed.

The improved apparatus for moving hatches consist of a number of casters each of a novel construction adapted to be inserted beneath each hatch so as to form rollers therefor, in order that the hatches may be moved easily to and from its position over the hatchways.

For a better comprehension of this part of my invention, attention is directed to the accompanying drawings forming a part of this specification, and in which:

Figure 1—is a sectional view partly in elevation of a portion of the upper deck of a vessel of the character described above showing the manner of attaching the hatches thereof. Fig. 2— is a side elevation of one of the improved casters for moving the hatch. Fig. 3— is an elevation of the same. Fig. 4— is a top elevation.

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

In the boat I have invented and which is described and illustrated in said patents, the hull is constructed of steel or iron plate and riveted to angle iron or T-iron frames.

In Fig. 1— of the drawings, A, represents one of these plates, which is secured to the frame B. The hatch C, a portion of which is shown in this figure, is removably secured in position over each hatchway and to the plates and frames of the vessel by means of a number of screw-bolts D, which pass entirely through the plates and frames.

In order that the joint between the hatch and the plates of the vessel may be of a water tight character, I have found it preferable to interpose a packing of rubber or some elastic material between those parts. This rubber packing is held in position to the lower side of the hatch plates by means of a metallic strip E, riveted or otherwise secured in position as shown. The hatch, such as I have described above and which is usually made of a single piece of metal, together with the packing and means of securing the same in position as described in my last mentioned patent and hence a detailed description of the same is unnecessary here. Each hatch is about eight feet square, and made of metal and is of considerable weight, so that it would be a matter of impossibility for a man to move the hatch by direct means. In Figs. 2— 3— and 4— I have shown the casters for doing this, and which will now be described. It consists simply of a main portion *a*, having a chamber *b*, therein, so as to form ears *c c* on each side. Mounted in this chamber and having bearing within the two ears is a small metallic roller *d*, having integrally projected axles *e e*, on each side. The chamber within the main portion *a*, of this caster extends entirely through the upper wall thereof, so as to leave an opening *f*, through which a lubricant may be poured in order that the roller may be lubricated. Cast integrally with the main portion *a*, of the caster and in advance of the axial line of the roller is a cylindrical stud *g*, of about the same diameter as the bolts for the hatchway plates. When it is desired to move the hatches, they are elevated slightly by means of a crow bar or jack as before explained and a number of rollers are inserted between the hatch with the projection extending into the bolt holes of the hatch.

In order that the movement of the hatches may be in the proper direction, I make use of guiding posts or ears *h* having a base as shown,

and which may be either bolted, riveted or welded to the deck plates or may be secured in any other suitable way thereto. By means of these guiding posts or ears it will be seen that the hatch can not partake of any side way movement, but will always move in a direct line so that the rollers will travel upon the deck plates directly over the bolt holes therein, and there can be no danger of the casters rolling into the hatches and becoming lost.

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

An improved caster for moving hatch plates consisting of a main portion *a*, having depending lugs *c;* a roller *d* having bearings in the lugs *c c;* a cylindrical stud or projection *g* integral with the main portion *a* for the purpose mentioned; and an opening *f* within the main portion above the roller for the purpose mentioned.

ALEXANDER McDOUGALL.

In presence of—
C. E. WACHTEL,
W. M. ROSS.