

CHARLES McCLOSKEY.

Improvement in Bilge-Water Gauges for Vessels.

No. 127,422.

Patented June 4, 1872.

Fig. 1.

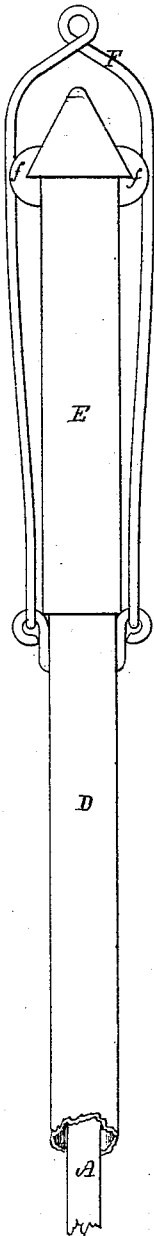


Fig. 2.

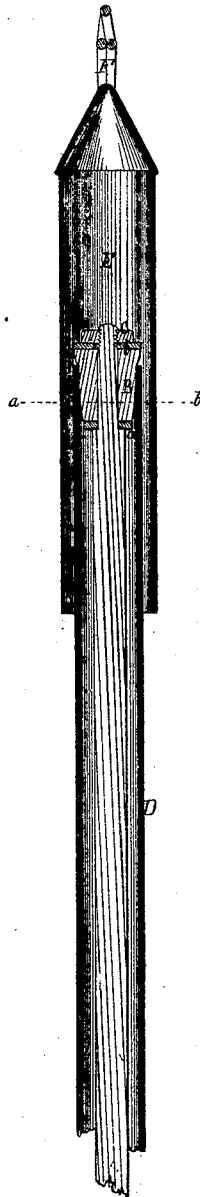


Fig. 3.
on line a.b. of Fig. 2.

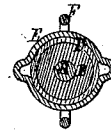


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES McCLOSKEY, OF EAST CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN BILGE-WATER GAUGES FOR VESSELS.

Specification forming part of Letters Patent No. 127,422, dated June 4, 1872.

Specification describing an Improved Instrument for Gauging the Depth of Water in the Holds of Navigable Vessels, invented by CHARLES McCLOSKEY, of East Cambridge, in the county of Middlesex and Commonwealth of Massachusetts.

The drawing accompanying this specification represents, in Figure 1 an elevation, in Fig. 2 a vertical section, and in Fig. 3 a horizontal section, of an instrument embodying my improvements; Fig. 4 being an elevation of the inner bar and its elastic expandible valve or plug, to be hereinafter referred to.

The said drawing represents at A a rod or bar (square, cylindrical, or polygonal, as the case may be) composed of iron or other proper metal or material, this rod having engrossed or stamped upon it a divisionary scale of feet and inches, by which the exact depth of water to which the bar has entered may be determined, the bar thus constituted forming the means now in use for determining the depth of water in a vessel's hold.

In carrying out my present improvements I apply to the upper part of the bar A a tubular plug or valve, B, which encompasses it and bears at bottom against a ledger or annular rib, *a*, formed upon or applied to such bar. Upon the extreme upper end of the rod or bar A I screw a nut, C, and between such nut and the valve B I place, preferably, a washer, *b*. The nut serves to retain the valve in place upon the rod, and as this valve is to be, from choice, of an elastic or flexible material—rubber, for instance—the nut serves to increase the diameter of such valve by distending the same according to the degree of pressure which such nut screws down upon it. By this means the valve or plug may be contracted or distended in diameter, to adapt it to tubes of varying boxes. D in the drawing represents a tube of a diameter somewhat greater than that of the bar A, and of a length somewhat less, and into this tube such bar is to be inserted from the top until the elastic plug or valve B of such rod bears against or finds a seat within the upper part of said tube D, the length of the bar and tube, respectively, being such that, when the valve is upon its seat, the bar protrudes somewhat below the tube. E represents an outer cylinder or cap, closed at top, and of a diameter somewhat greater at

intervals than that of the tube D before named, and when the instrument is in use such cap is to be passed over the said tube, as shown in the drawing, to which it should adhere with considerable friction. The purpose of the valve B is to prevent accidental entrance of water to or about the upper part of the box D, and the cap-plate E is to some extent an additional precaution to this end, as well as to protect the valve and tube and prevent accidental separation of the two, or the lifting of the valve from off its seat except by proper means and at proper times.

It is well known that the present method of gauging or "sounding" the depth of water in a vessel's hold is to drop an iron bar into the pump-well through a tube leading to the latter from the vessel's deck, the depth to which such bar enters the water being visible by the impression left upon it. To enable this to be done, it is necessary that the sounding-bar should be kept dry until it reaches the water in the hold; otherwise no impression will be made upon it, and in stormy weather or heavy seas it is often impossible to retain this bar in a dry state, owing to the rain, if stormy, or to the seas shipped by the vessel and running down the well-tube.

The purpose of these improvements is mainly to positively maintain the sounding-bar in a dry state until it reaches the water in the hold; and to this end I have devised the construction of parts herein shown, the operation of which is as follows: The tube D being provided with a suitable bail, F, from which it is suspended, the entire instrument, as shown in Figs. 1 and 2 of the drawing, is to be lowered into the pump-well through the tube provided for the purpose, until the lower end of the bar A (which, as before stated, protrudes below the lower end of the tube D) strikes against the bottom of the hold or the pump-well placed therein, when the weight of the tube D and cap E remove the valve B from its seat and allow a circulation of air through the said tube D, and a consequent rising of the water therein until a level uniform with that in the hold exists within and surrounding the bar A. The tube D insulates the bar A, or all of the same except its lower end, from contact with water or moisture during its insertion within the well-tube and its descent into

the latter, for the reason that circulation of air through the tube is shut off by the valve B. As the bar A abuts against the bottom of the pump-well or the hold, as the case may be, such bar is submerged, as before stated, and a distinct impress left upon its surface corresponding to the depth of water in which it enters. Upon lifting the apparatus the valve closes upon its seat, and, by excluding all entrance to the upper part of the tube D, protects the bar A from contact with moisture in being withdrawn from the well-tube as effectually as in descending the same.

The use of the cap E is not compulsory, as its purpose is not so much to prevent entrance of water to or about the exterior of the valve B, as to protect the latter from blows or accident of any nature which might tend to displace it; but the cap, if used, is to be so applied to the tube as to provide air-spaces between the two, as hereinbefore premised.

I would call attention to the fact that the bail F serves a valuable purpose, in that it

clasps the cap and retains it firmly in place while the implement is ascending or descending the well-tube; and in order that such bail shall, by its inherent elasticity, retain itself firmly in contact with the cap-plate for like reasons, I form upon the latter two grooved ears, *f f*, into which the bail enters with considerable force.

Claims.

1. The combination of the sounding-bar, its inclosing-tube, and valve on said bar for closing the top of the tube until the bar reaches the bottom of the hold, arranged substantially as shown and described.

2. In combination with the elements named in the preceding clause, the cap E, under the arrangement shown and set forth.

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Witnesses:

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