No. 745,942. PATENTED DEC. 1, 1903.

E. L. WICKINS.

GAGE AND FLOAT THEREFOR.

APPLICATION FILED OCT. 7, 1902.

NO MODEL.

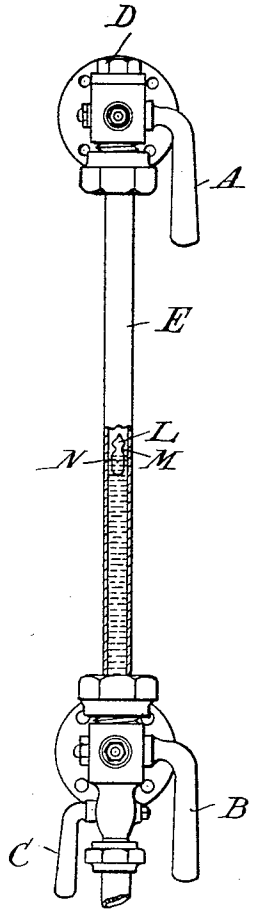


Fig. 1.

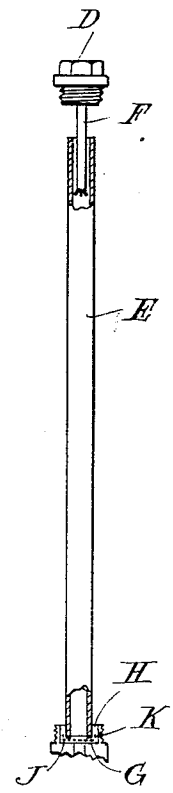


Fig. 2.

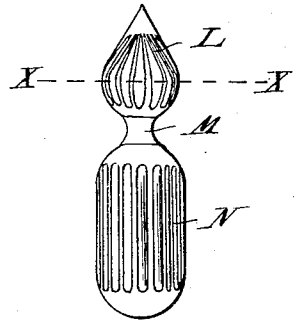


Fig. 3.

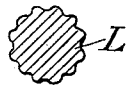


Fig. 4.

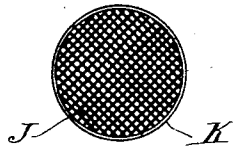


Fig. 5.



Fig. 6.

Witnesses:-

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No. 745,942. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

EDWARD LAURIS WICKINS, OF SOUTH YARRA, PRAHRAN, VICTORIA, AUSTRALIA.

GAGE AND FLOAT THEREFOR.

SPECIFICATION forming part of Letters Patent No. 745,942, dated December 1, 1903.

Application filed October 7, 1902. Serial No. 126,301. (No model.)

To all whom it may concern:

Be it known that I, EDWARD LAURIS WICKINS, a subject of the King of Great Britain and Ireland, and a resident of 40 Powell street, South Yarra, Prahran, in the State of Victoria, Commonwealth of Australia, have invented certain new and useful Improvements in Gages and Floats Therefor, of which the following is a specification.

The object of my invention is to provide additions to the water-gage fittings of boilers used for locomotives, portable, land, and marine engines, whereby the height of the water in the glass can be determined instantly. In the past where the stoke-hole was dark, the water murky, or the glass obstructed or hidden it has frequently been difficult to locate the amount of water in the boiler. Various devices have been used to overcome this difficulty, but with mine a combination is introduced which is not only cheap in its installation, but effective also in use, in addition to which it can be applied to old as well as to new gage-glass fittings and at a nominal cost.

Referring to the drawings, which form a part of this specification, Figure 1 represents a front elevation, partially in section, of the water-gage fittings and observation-glass attached to a boiler. Fig. 2 shows the glass top and bottom in section, the cover being removed from the fitting and the lower end of the retention-piece in the glass. It also shows in section portion of the lower or water fitting and the grating. Fig. 3 is an elevation, on an enlarged scale, of the float. Fig. 4 is a sectional plan through X X, Fig. 3. It shows a modification of the head, the coned portion of which is corrugated. Fig. 5 is an enlarged plan of the grating. Fig. 6 is a detail view showing a spherical float.

Similar letters of reference indicate similar or corresponding parts where they occur in the several views.

On reference to the drawings it will be seen that the top or steam fitting has thereon a tap-handle A, which in the position shown permits steam to enter the top of the gage-glass. Beneath this is the bottom or water fitting, the water tap-handle B in which in the position shown allows water to pass up into the glass. On the said bottom or water fitting is also the blow through tap-handle C, which when in the position shown closes the blow through tap. Above the top or steam fitting is a cover D, which is preferably screwed into the said fitting and is situated above the top of the gage-glass E. When this cover is removed, the gage-glass can be displaced or replaced.

Depending from the center of the bottom surface of the cover D is a retention piece or extension F. The length of this extension, as also its sectional area and contour, will depend upon circumstances. It can either be integral with the said cover or attached thereto in any well-known way. Its length is such that it preferably descends till it enters the top of the hole in the gage-glass. At its bottom the end of the retention-piece F may be trifurcated or spread into three arms, thereby preventing the cone top becoming jammed between it and the glass, or the retention bottom may be simply enlarged.

In the bottom fitting and resting upon the step or shoulder G, formed beneath the packing-box H, is a metallic or other grating J. This may be provided with upturned edges K, as shown in Fig. 2, or it may be flat. It is preferably introduced before the gage-glass is placed in position, and its diameter is the same as the diameter of the packing-box. The size of the perforations will depend upon conditions, and the said grating is retained in place by the packing above it.

Resting upon the water within the gage-glass is a glass, metallic, or other luminous float. This is preferably cylindrical in conformation and divided into three parts—first, an unimmersed luminous head L; second, a neck M, and, third, an immersed body N. The said body may be integral with the head or attached thereto. Both the body and the head may, however, be solid, though under some circumstances both or one of them is hollow. The head has preferably a coned top, as shown in Fig. 3, the sides of which cone are at the slipping angle, and thereby shed any scum or other impurities that may fall thereon. Either the interior or the exterior of the head is covered with a luminous coating or composition from which light-rays are

emitted, or in the interior of the head is situated luminous material. Instead of the sides of the cone of the head being smooth they may, as seen in Fig. 4, be corrugated from the point down to the bottom of the head. The reflection of the light under such circumstances is more marked. The body may also have vertical corrugations thereon. The said float is so designed that it floats upon the water and is smaller in its outside diameter than the inside diameter of the tube.

With my combination luminous float and retention-piece a second's observation of the water-gage glass discloses instantly the height of the water therein, and should it be necessary to scour the interior of the glass by blowing the water and steam through the bottom of the same the said float is retained within the glass on the bottom by the grating before referred to, whereas should the water in the boiler rise above the top of the glass the said float cannot pass out of the top of the glass and through the tap into the boiler, because the retention-piece before alluded to prevents it.

Not only is property insured, but lives and limbs are also saved by my combination water-gage, luminous float, and float-retention pieces, add to which a boiler can be controlled with less anxiety to the operator and much greater safety to all concerned.

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

1. A float for liquid-gages comprising an elongated body portion, and a reduced conical-shaped head, the said head being provided with longitudinally-arranged corrugations for insuring the passage of the liquid about the same, substantially as described.

2. In a device of the character described, the combination with a glass tube, of a detachable covering having a depending extension formed integral therewith, said extension having trifurcations at one end, a packing-box supporting said tube, a grating interposed between the tube and packing-box, a corrugated float retained in said tube, and means for luminating the float, substantially as described.

3. In a gage mechanism, the combination with a glass tube, of a float inclosed within the same, means at the upper end of the tube for limiting the movement of the float, and a screen closing the lower end of the tube as far as the float is concerned, the said screen being clamped and held in position by the end of the glass tube, substantially as described.

4. In a liquid-gage mechanism, the combination with a gage-tube, and a float mounted therein, of a cap-plug at the upper end of the said tube, a projecting pin or stud carried by the said cap-plug and extending into the gage-tube, the said pin having a trifurcated lower end to prevent the possibility of the float being caught or wedged between the projection and the walls of the gage-tube, substantially as described.

5. Combination steam-boiler water-gage luminous float and retention-pieces consisting of a float having a body, a neck, and a head, said head being coned and corrugated and having a luminous coating applied thereto, a cover in the upper or steam fitting depending from which is a retention-piece entering the top of the gage-glass the bottom of which retention-piece is trifurcated, a grating resting upon a step in the packing-box or lower water-gage all as and for the purposes hereinbefore described and as illustrated in the drawings.

In witness whereof I have hereunto set my hand to this specification in the presence of two witnesses.

EDWARD LAURIS WICKINS.

Witnesses:

EDWIN PHILLIPS,

CECIL W. LE PLASTRIES.