J. C. HOADLEY.

Dead-Lights for Steam-Boilers.

No. 143,574. Patented Oct. 14, 1873.

Fig. 1.

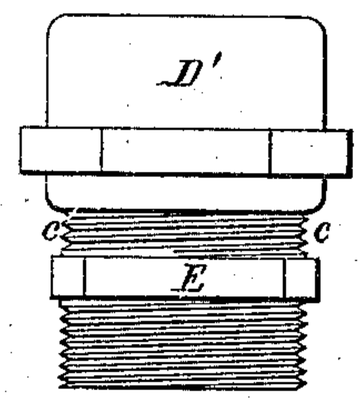


Fig. 2.

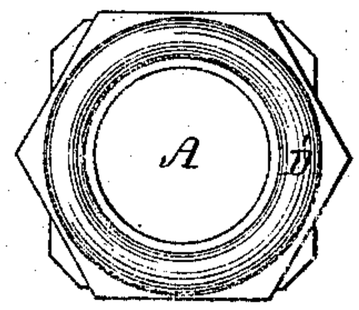
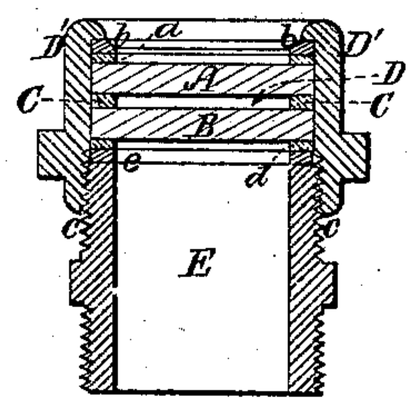


Fig. 3.



Witnesses.

S. N. Pipen.

L. N. Höller.

John C. Hoadley.

by his attorney.

R. M. Eddy

AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

JOHN C. HOADLEY, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN DEAD-LIGHTS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **143,574**, dated October 14, 1873; application filed July 19, 1873.

To all whom it may concern:

Be it known that I, JOHN C. HOADLEY, of Lawrence, of the county of Essex and State of Massachusetts, have invented a new and useful Dead-Light for Steam-Boilers; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side view, Fig. 2 a front view, and Fig. 3 a longitudinal section, of the article.

It is intended to be screwed or fixed in the end or other proper part of a steam-generator, at, or about at, the safety water-level thereof, in order to indicate to a person the height or state of the water while in the boiler, or while the latter is making steam.

The common dead-lights heretofore in use for such purposes have had but a single glass disk or frame, which, owing to sudden changes of temperature or other causes, is very liable to become cracked or broken, in which case serious consequences are likely to follow, such as discharge of hot water or steam from the boiler through the body of the article, and, perhaps, upon persons and things in the vicinity, to the injury or defacement thereof, all of which is successfully prevented by my improvement, which consists, mainly, in providing the body of the article with two glass disks, with an air chamber or space between, serving to insulate each disk from the other.

In the drawings, A and B represent the two disks, of glass or other proper transparent medium, separated from one another by an annulus, C, of some suitable elastic material—such as vulcanized india-rubber, for instance—the same forming between the two disks a shallow insulating space or chamber, D. The two disks are arranged, as represented, within a tubular cap, D′, formed as shown, there being an elastic annular packing, *a*, between the outermost disk and the lip or shoulder *b* of the cap. The cap screws upon a tube, E, provided with a screw, *c*, for entering the boiler head or side, there being between the rear disk and next adjacent end of the tube E an annular packing, *d*, and a metallic ring, *e*. On screwing the cap firmly upon the tube the two glass disks will be packed in the cap and together with steam-tight joints.

Each disk is to be of sufficient or more than sufficient thickness to withstand the pressure of steam in the boiler. The outer disk and the insulating-chamber protect the inner disk from sudden changes of external temperature, tending to cause it to crack while being heated. So the inner disk and the chamber insulate the outer disk from the steam and hot water in the boiler, and prevent such from being cracked by sudden external or atmospheric changes of temperature. Furthermore, should the outer disk accidentally receive a blow and become broken, there will be no injurious escape of steam, as would be likely to follow with but one disk; therefore my dead-light is one having elements of safety, which renders it eminently useful.

The elastic annuluses C *a d*, arranged against the glass disks, also prevent them from becoming cracked when pressed toward each other by the cap while in the act of being screwed up.

I claim as my invention—

The boiler dead-light provided with the two glass disks A B and the insulating-space D, and the elastic packing C between them all, substantially as explained and represented.

JOHN C. HOADLEY.

Witnesses:
R. H. EDDY,
S. N. PIPER.