# E. S. Hidden,

## Light & Air Ports.

No. 51,718. Patented Dec. 26, 1865.

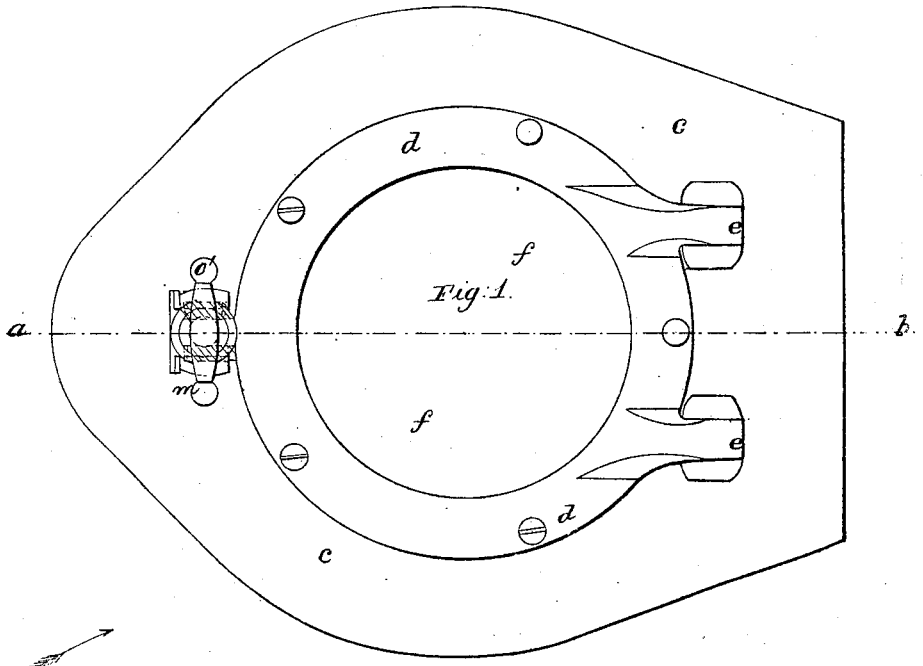


Fig: 1.

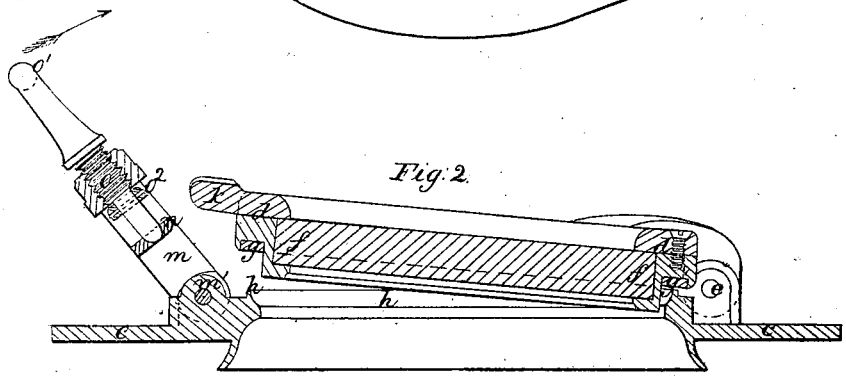


Fig: 2.

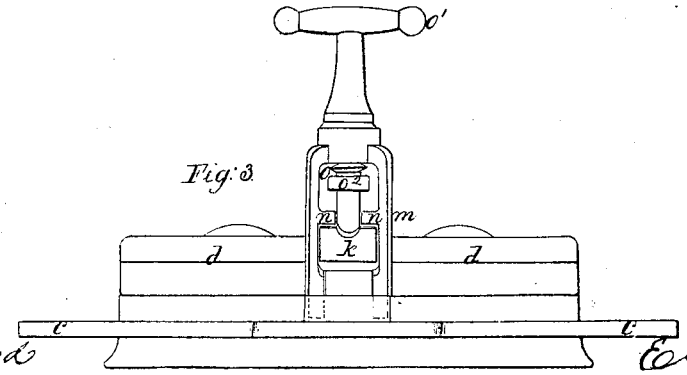


Fig: 3.

Witnesses:
L. Pablo
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# UNITED STATES PATENT OFFICE.

E. S. HIDDEN, OF NEW YORK, N. Y.

## IMPROVED MEANS OF CLOSING SHIPS' LIGHTS.

Specification forming part of Letters Patent No. **51,718**, dated December 26, 1865.

*To all whom it may concern:*

Be it known that I, E. S. HIDDEN, of the city, county, and State of New York, have invented certain new and useful Improvements in Lights for Ships' Sides and Decks; and I do hereby declare that the following, taken in connection with the drawings, is a full, clear, and exact description thereof.

In the drawings, Figure 1 is a plan of a light. Fig. 2 is a section through the same on the line *a b* of Fig. 1. Fig. 3 is an end elevation of the same, and all these figures exhibit the preferred method of applying my invention.

This invention has been made with a view of providing means for closing the light and holding it closed which are more prompt and effective in their action than others hitherto employed, which means also prevent the battering and consequent spoiling of screw-threads and the stealing of screws. The screw is, therefore, so arranged that it cannot be withdrawn from its nut, and also in such manner that its thread is always in the nut, both when the light is shut and when it is open, and it is combined with a cam in such manner that the latter effects a preliminary closing and compression of the packing, while the screw may be brought into action afterward to compress the packing more forcibly, and thus diminish leakage.

The nature of the invention consists in combining with the frame that contains the glass a swinging arm or strap carrying both a screw and cam, whose pivot is in or parallel to the plane of the glass when it is shut, or nearly so, the screw and cam operating substantially as set forth hereinafter.

In the drawings, that part of the light (considered as a whole) which is attached to the side or deck of the ship is represented at *c c*. The top or glass frame is represented at *d d*, the hinges at *e e*, the glass at *f f*, the rubber or other packing at *g g*, and the compressing-ring at *h h*, and all these parts may be constructed as represented, or in any usual or proper manner.

An arm, lug, or projection, *k*, is cast in one piece with or attached to the glass or top frame, and a swinging arm or strap, *m*, is pivoted to that part of the light-frame which is secured to the side of the ship, or to the side of the ship itself, by means of a pivot, *m'*, and this pivot (or, to speak more exactly, the axis thereof) lies in a plane parallel to that passing over the surface of the glass when shut, or nearly so, in order that the arm may swing in planes perpendicular to the side of the ship, or nearly so. This arm or strap is provided with a cam, *n*, so formed that the screw can pass through it, and the screw *o* plays in a nut attached to or making part of the swinging strap.

The screw is provided with a collar, $o^2$, or some proper contrivance which permits it to play in and prevents it from being withdrawn from the nut, and also with a thumb-piece or handle, *o'*.

The operation is as follows: The frame which contains the glass is to be pushed to and the swinging arm or strap turned in the direction of the arrow, Fig. 2. The cam will then catch over the lug, close the light, compress the packing, and hold the glass shut. If water beats violently upon the light, then the screw is to be turned and the packing compressed further, the strain being transferred from the cam to the screw.

It needs no demonstration to show that the screw-thread cannot be battered up, and that the screw cannot be stolen, and also that the preliminary closing and securing of the light can be effected very quickly, and that the screw when brought into action compresses the packing as forcibly and effectively as any other kind of screw-fastening. I intend at times to locate the screw, so that its point shall lie in advance, or to the rear of, or on one side of, the cam. I also intend at times to make the swinging arm or strap with one side only. The screw-nut will then be formed in a sort of hook projecting therefrom, and at other times I intend to locate the pivot in such manner that the arm or strap swings in planes perpendicular to the line *a b*, or nearly so, and and at others to dispense with the lug *k*, causing the cam and screw to bear upon the glass-frame itself; but in all cases the swinging arm

is to support both a cam and a screw, and is to vibrate or swing in planes perpendicular to the part *c c* of the light, or nearly so.

I claim as of my own invention—

A swinging arm or strap provided with both a cam and a screw, and hinged so as to vibrate as described, in combination with a top or glass frame of a ship's light, the combination being substantially such as hereinbefore described.

In testimony whereof I have hereunto subscribed my name.

E. S. HIDDEN.

In presence of—
F. PABLO,
FRAS. LOCKWOOD.