

# United States Patent Office.

T. W. PORTER, OF BOSTON, MASSACHUSETTS, AND J. D. LEACH AND  
SABIN HUTCHINGS, OF PENOBSCOT, MAINE.

Letters Patent No. 89,339, dated April 27, 1869.

## IMPROVED CHAIN-PLATE ATTACHMENT.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, T. W. PORTER, of Boston, in the county of Suffolk, and State of Massachusetts, and J. D. LEACH and SABIN HUTCHINGS, of Penobscot, in the county of Hancock, and State of Maine, have invented new and useful Improvements in Chain-Plate Attachments; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of our invention, and Figures 2 and 3 are horizontal sections taken on line A B, fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of our invention consists in the employment of metallic supports inserted in or secured to the sides of the vessel, and so constructed as to receive the chain-plate bolts, which pass through hollow pivots formed upon the supports, thereby relieving the bolts from a portion of the usual strain; also, in the use of rubber, or other packing, placed beneath the supports, or their pivots, in such manner as to prevent the leakage caused by water following the bolts through the side of the vessel.

In the usual method of attaching chain-plates to the hulls of vessels, a bolt passes through the upper eye of a preventer-stay, then through the lower eye, or end of the chain-plate, and through the side of the vessel, while a smaller bolt passes through the lower end of the preventer-stay, and thence through the side of the vessel.

When the chain-plates are thus secured, there is only the resistance of the wood to the two bolts to receive the enormous strain of the shrouds leading to the mast-head, and it is not a matter of surprise that the bolt should be forced upward, thus enlarging the hole, and allowing the water to pass through to the inside of the vessel. Besides, there is no means of calking around the bolts, as the eye of the chain-plate conceals the hole; and, if a chain-plate be broken, it is deemed unsafe to drift out the bolt by reason of the wood adhering to it by corrosion of the iron, which causes the hole to be greatly enlarged by the removal of the bolt.

By our method, the bolt first passes through a metallic plate, and then through rubber packing, which excludes the water, and allows the bolt to pass freely through the remaining wood.

In the drawings—

O represents a section of the outer planking, while *a a*, fig. 3, is a frame-timber, and *b* is the ceiling.

*e e* are the chain-plates, which pass up through the rail, and are secured to the lower dead-eye, in the usual manner.

*d* is a metallic stay, or support, which is formed with a groove, or channel, in which the chain-plate *e* is fitted, as is plainly shown in figs. 1 and 2.

This support is also formed with hollow pivots, which are fitted into the side of the vessel, and through which the bolts *c* pass, as is plainly shown in fig. 2.

The support *d* may be formed with auxiliary pivots, in addition to those through which the bolts *c* pass, if desired.

*g g* is a disk, or plate of elastic rubber, placed in the recess beneath the hollow pivots of support *d*.

Through this rubber disk the bolts *c c* pass, and, as the rubber is thicker than the space beneath the hollow tube, the pressure exerted by bolt *c* upon the support *d* serves to compress the rubber, and thereby make it water-tight on every side, thus preventing water from passing in through the bolt-hole.

*f f*, figs. 1 and 2, show a modification of the support, in which the part projecting from the vessel's side is omitted, the hollow pivot being used, and the flange of the support being inserted flush with the side of the vessel. In this case, one support may be employed, reaching from the upper to the lower bolt, or two supports may be used, as shown.

*h* is the preventer-stay, used in the common manner. A hollow pivot may, if desired, be formed to receive the eyes of the chain-plate and preventer-stay, as shown in fig. 2.

Fig. 3 is the same as fig. 2, except that it shows a narrow flange outside the surface of the plank, for the purpose of calking, if desired; and a plate of rubber may be inserted between the support and the outer surface of the planking, if necessary.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the chain-plate *e* and holding-bolts *c c*, a metallic plate, or support, formed to be inserted in or secured to the side of the vessel, and through which the holding-bolts pass.

2. The support *d*, formed with the groove for the chain-plate *e*, and hollow pivots for the bolts *c*, substantially as and for the purposes specified.

3. The plates *f*, formed with a hollow pivot for the reception of the holding-bolts *c*, substantially in manner as described, and for the purposes specified.

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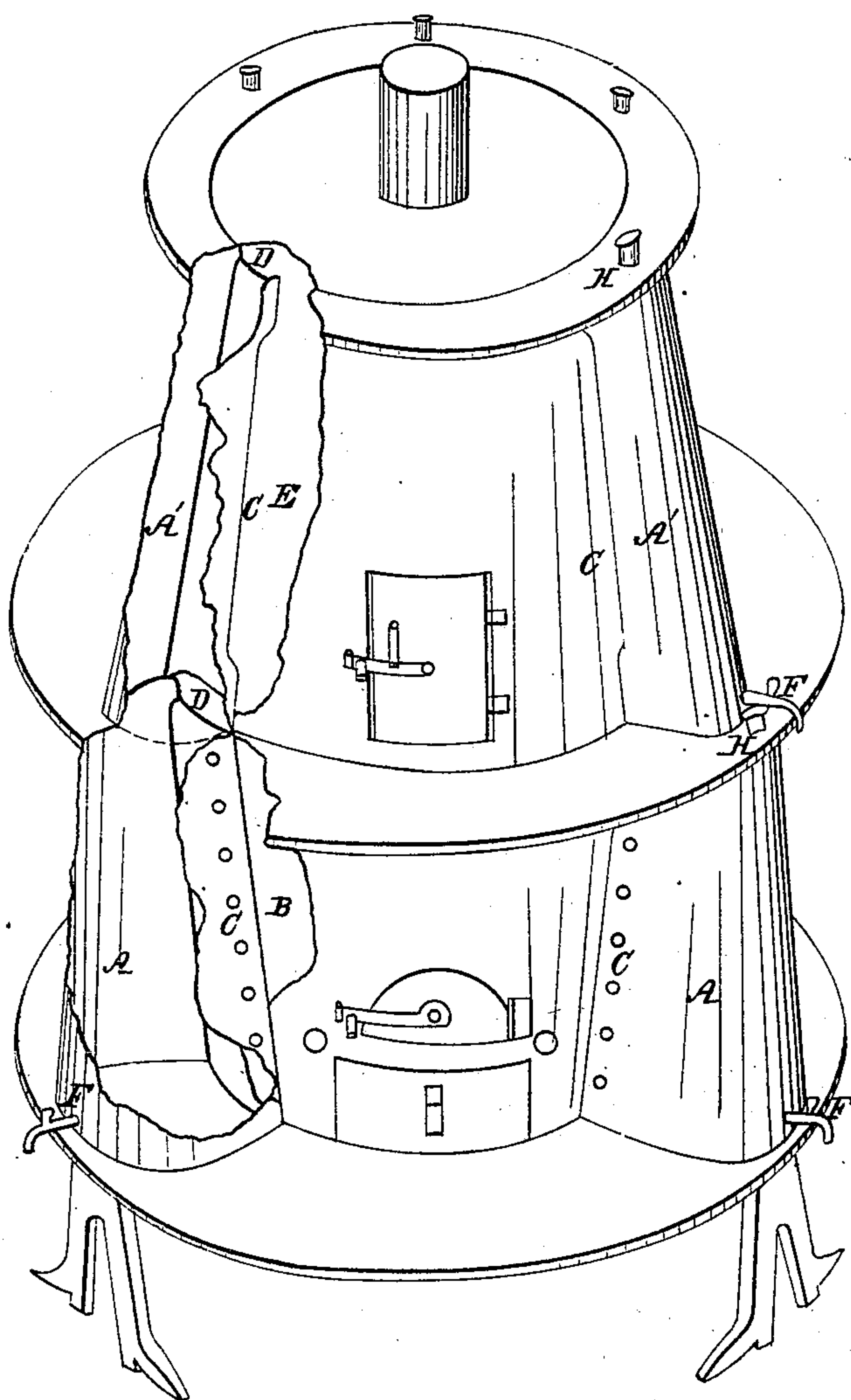
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No. 89,340.

Patented April 27, 1869.

*Fig. 1.*



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