

C. E. MARSHALL.

Ship's Port.

No. 104,474.

Patented June 21, 1870.

Fig. 1

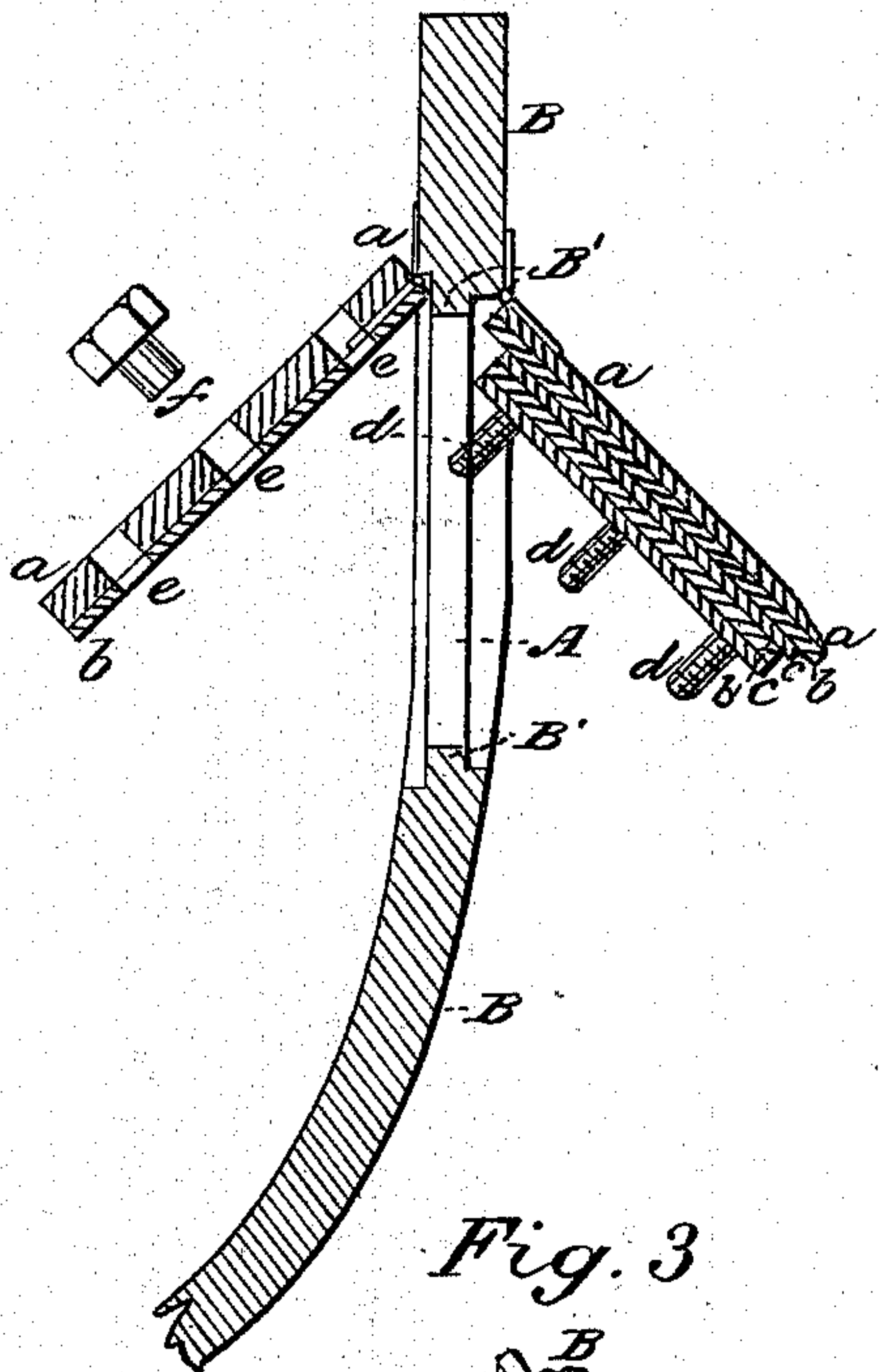


Fig. 2

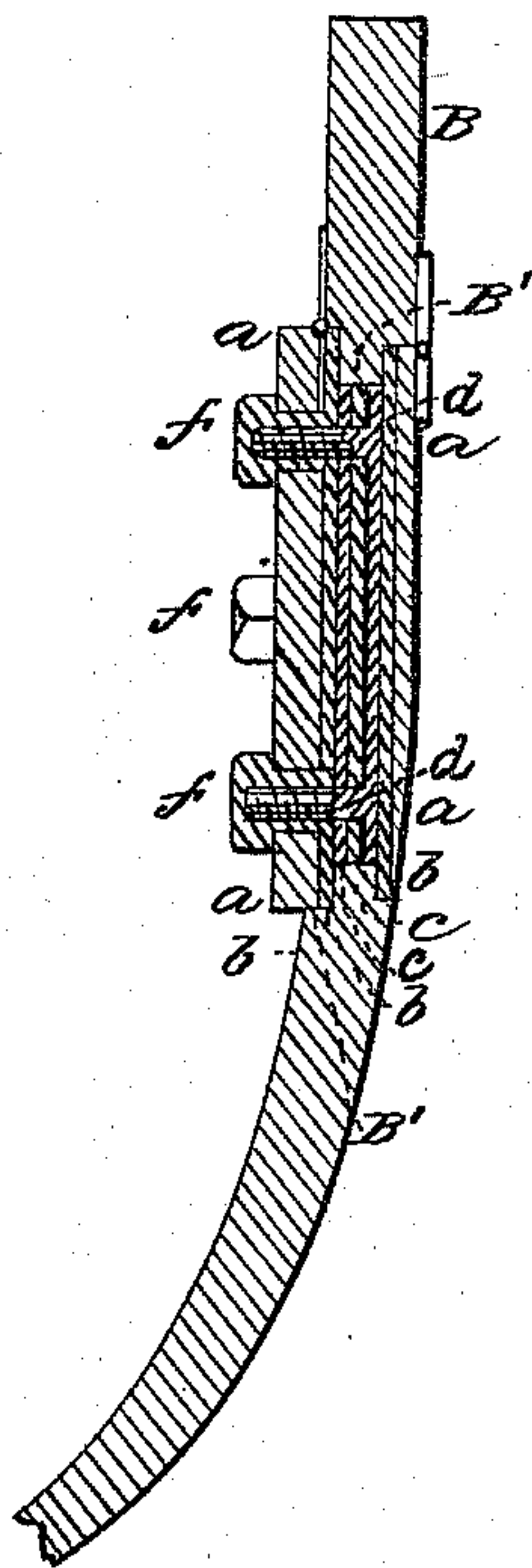


Fig. 3

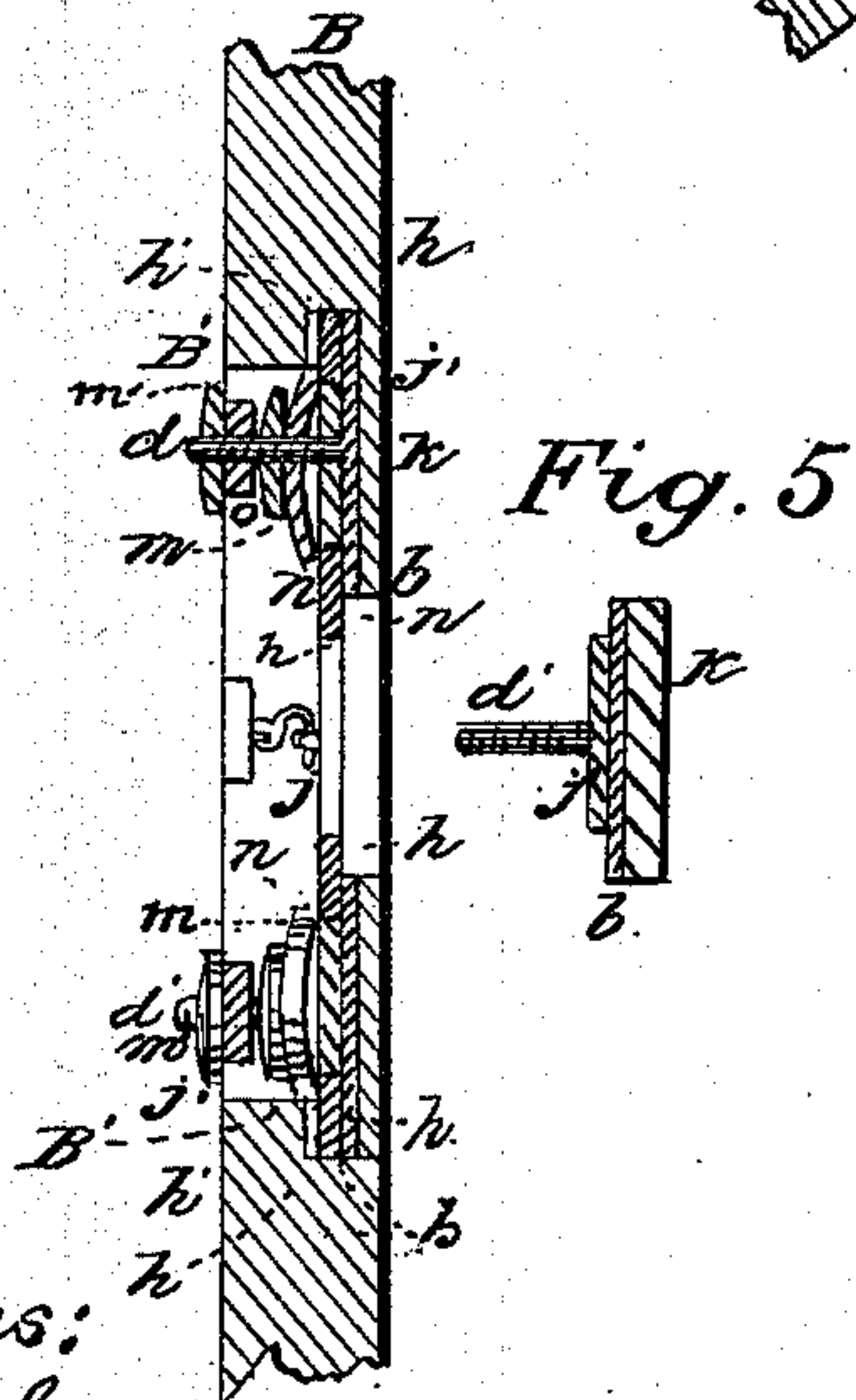


Fig. 5

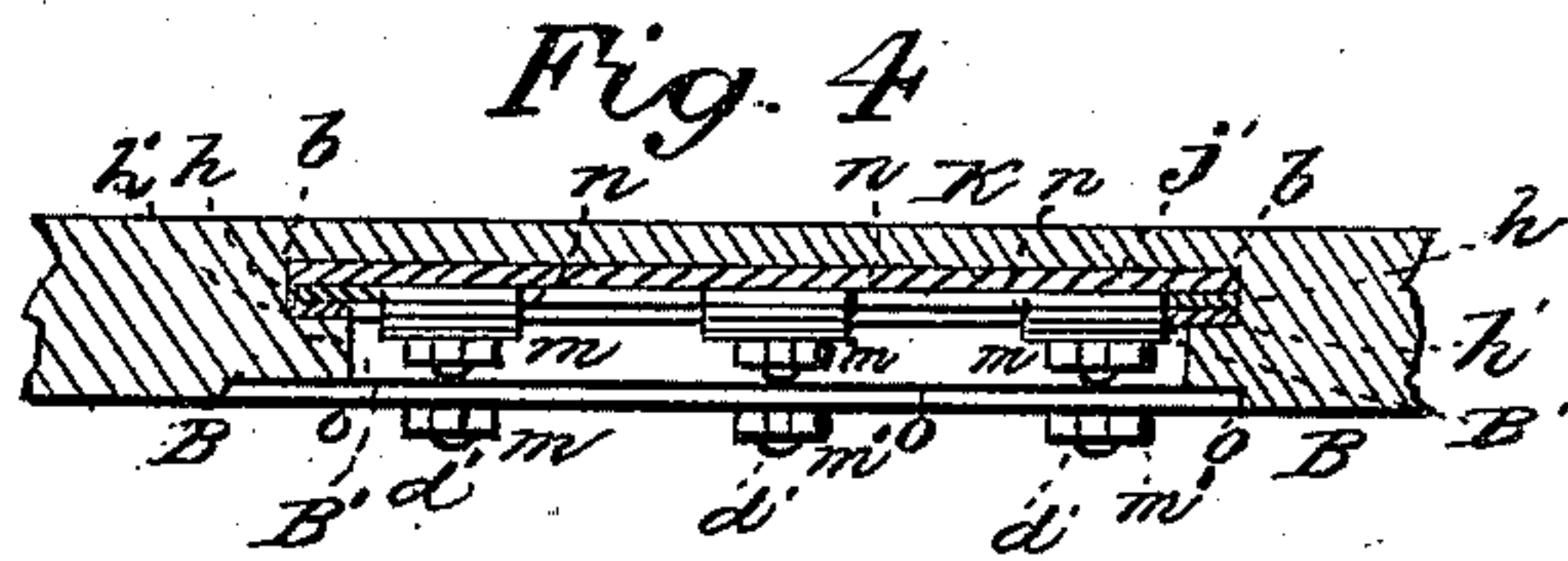


Fig. 4

Witnesses:

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# United States Patent Office.

CHARLES E. MARSHALL, OF CHICAGO, ILLINOIS.

Letters Patent No. 104,474, dated June 21, 1870.

## IMPROVEMENT IN SHIPS' PORTS.

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

### To whom it may concern:

Be it known that I, CHARLES E. MARSHALL, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Ships' Ports; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification.

Figure 1 is a vertical section of a ship's port with my invention attached and open.

Figure 2 is a vertical section of the same, showing the same closed.

Figure 3 is a vertical section of a ship's port closed, with a modification of my invention.

Figure 4 is a horizontal section of a ship's port closed, showing same modification.

Figure 5 is a section of covering plate, of metal, *j*, used in figs. 3 and 4.

Like letters refer to like parts in each figure

The nature of this invention relates to an improvement in ships' ports, and consists in an arrangement of packing interposed between metal plates, with wood backing fitted to the port-hole so closely and perfectly as to be water tight, and to exclude the water more effectually than can be done by any calking process whatever.

In the drawing—

A represents the port-hole of the vessel open in fig. 1.

B, the hull of the vessel.

B', a tongue, running around the port-hole, against which the ports shut.

*a*, the wood backing of the ports.

*b*, sheets of rubber or suitable packing material.

*c c*, metal plates.

*d*, bolts in the outer port, which, when the ports are closed, pass through the inner port through holes *e*, and are fastened down tightly by the nuts *f*. These ports may be hung on hinges to the side, top, or bottom of the port-hole, or be fitted to be used without hinges, as is most convenient. When the port-hole is to be closed, the ports are inserted, the one on the outer side of the vessel, and the other on the inner side, and, by turning down the nuts, the two ports are drawn closely together, so expanding the packing as to exclude the water and prevent all possibility of leakages.

As it is frequently necessary that a port-hole should be closed in sections instead of all at once, this invention may be modified with that purpose in view, as is shown in figs. 3 and 4 of the drawing. In this, a metal frame, *h*, fitting the port-hole, is used.

Between this and the tongue B' is placed packing, of rubber or other material, *h'*.

This frame is constructed with as many openings, *j*, as are desired, in the drawing three, and to these openings are fitted plates of metal, *j'*, each with wood backing, *k*, overlapping the openings in the frame.

Between these plates and the backing are interposed sheets of packing, *b*.

These sections overlap the openings, so that, when all are arranged, they completely cover the frame and form water-tight joints with each other.

Each of these sections is provided with screw-bolts, *d*, which pass through nuts, *m*, on the inside of the frames, which bear on braces, *n*, lying on the inside of the frame across the openings. By screwing down these nuts, the sections are firmly fastened to the frame and, all together, form a single port, and can be so used.

The bolts project further through bars, *o*, crossing the port-hole on the inside, and so projecting beyond it as to act as braces, against which bear the nuts *m*, by which the port is exactly fitted to the port-hole, the packing being expanded so as to exclude the water effectually.

The advantages of this port are, that it can be made perfectly water tight and secure against leakage; that, if, by straining of the vessel, the port is sprung, it is easily and effectually drawn together, so as to be as secure as when inserted; that it never requires calking; and that it can easily be moved and placed, as desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

A vessel's port, in two parts or sections, fitted to the port-hole, the one in the outer side of the hull, and the other to the inner side, and constructed of layers of metallic plates, with rubber or other suitable packing interposed, substantially as and for the purposes set forth.

CHARLES E. MARSHALL.

Witnesses:

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