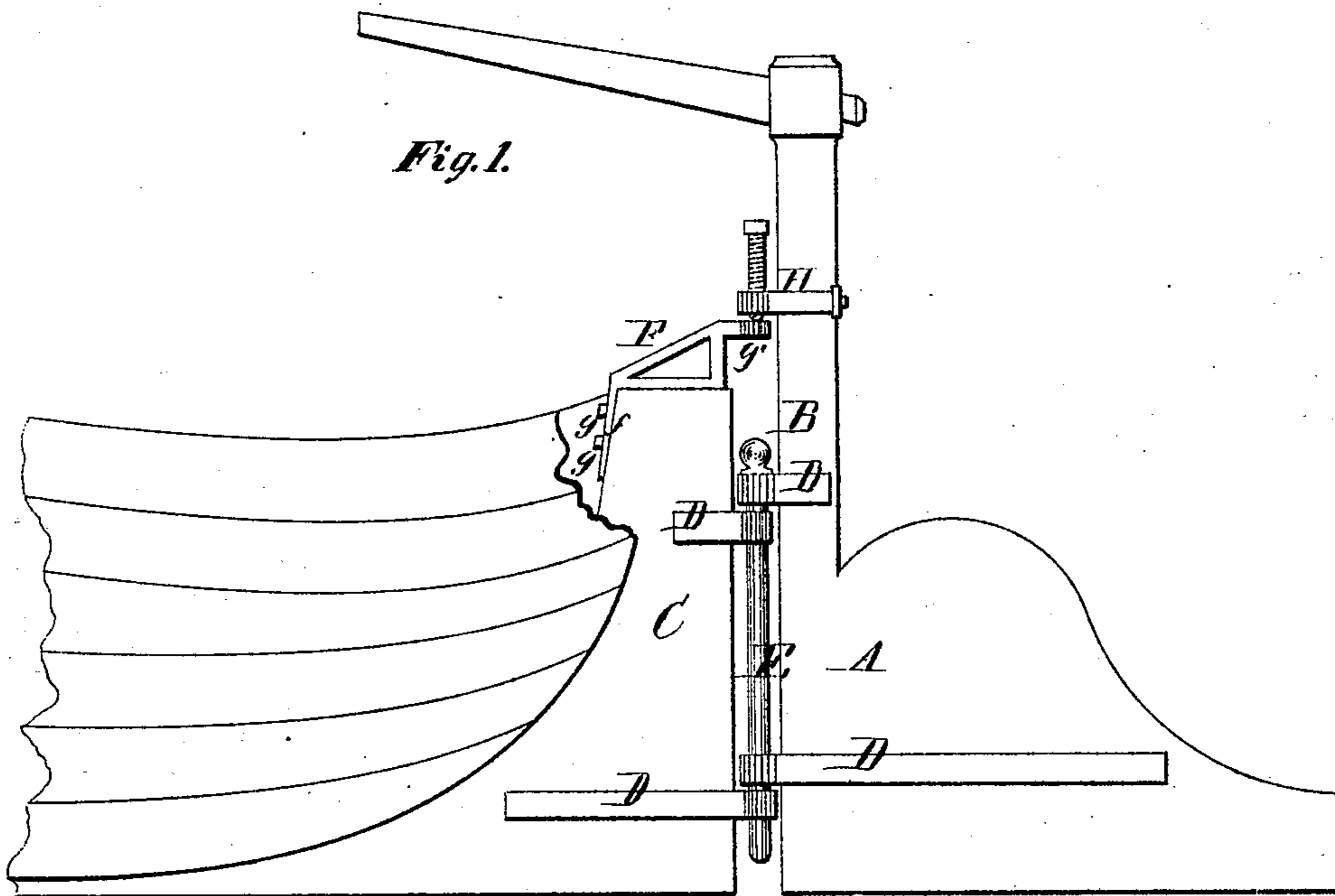


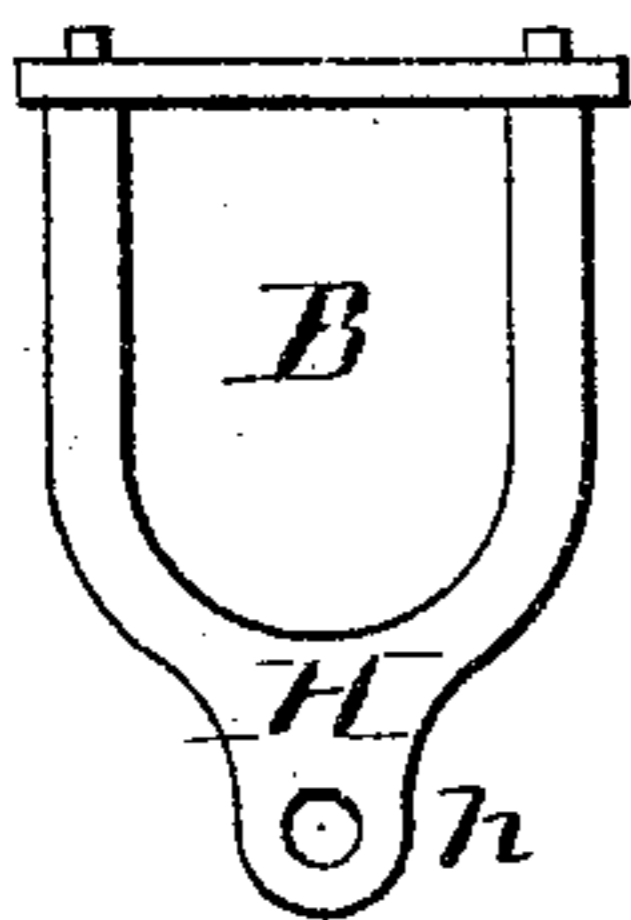
O. P. THARP.  
Rudders for Vessels.

No. 135,385.

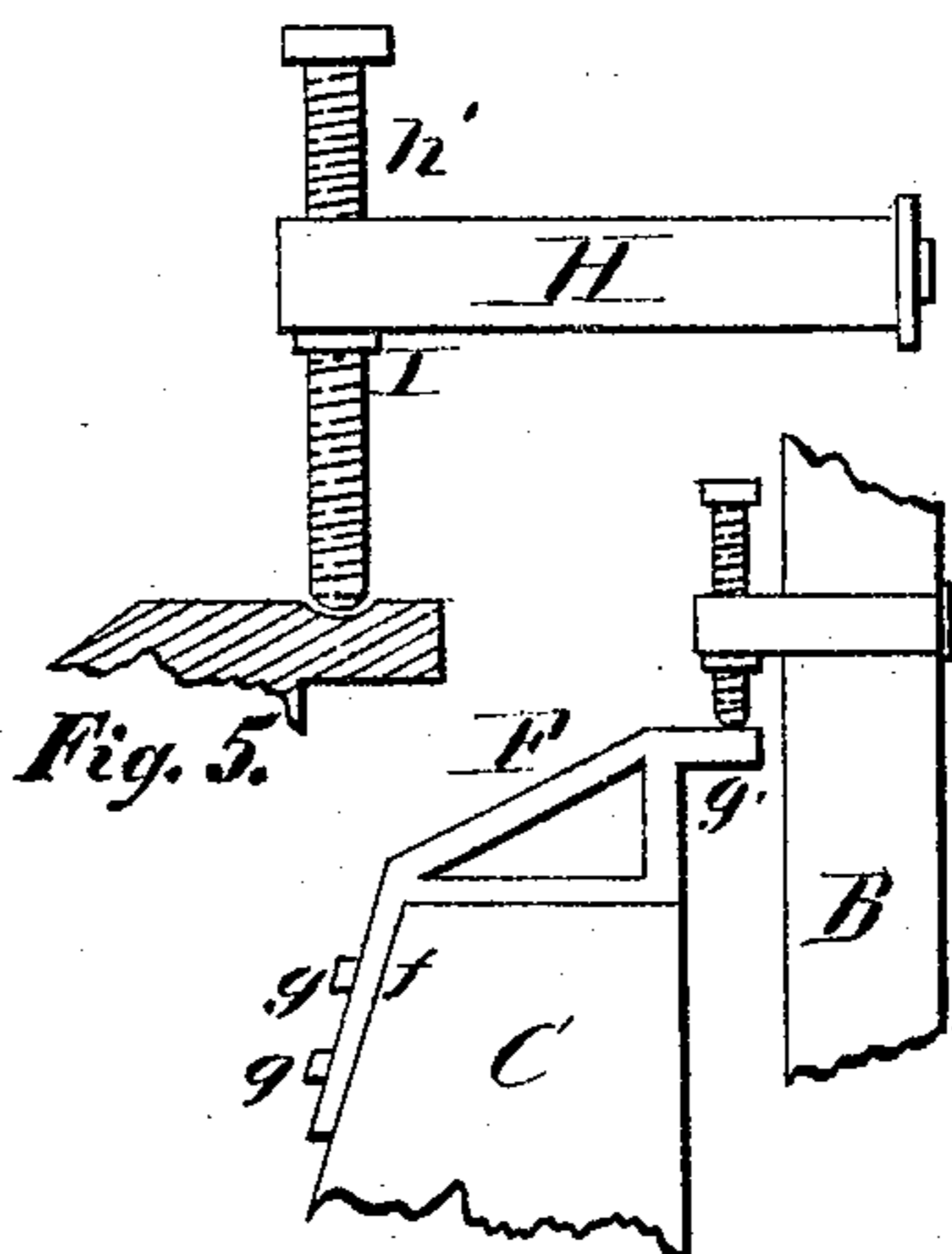
Patented Jan. 28, 1873.



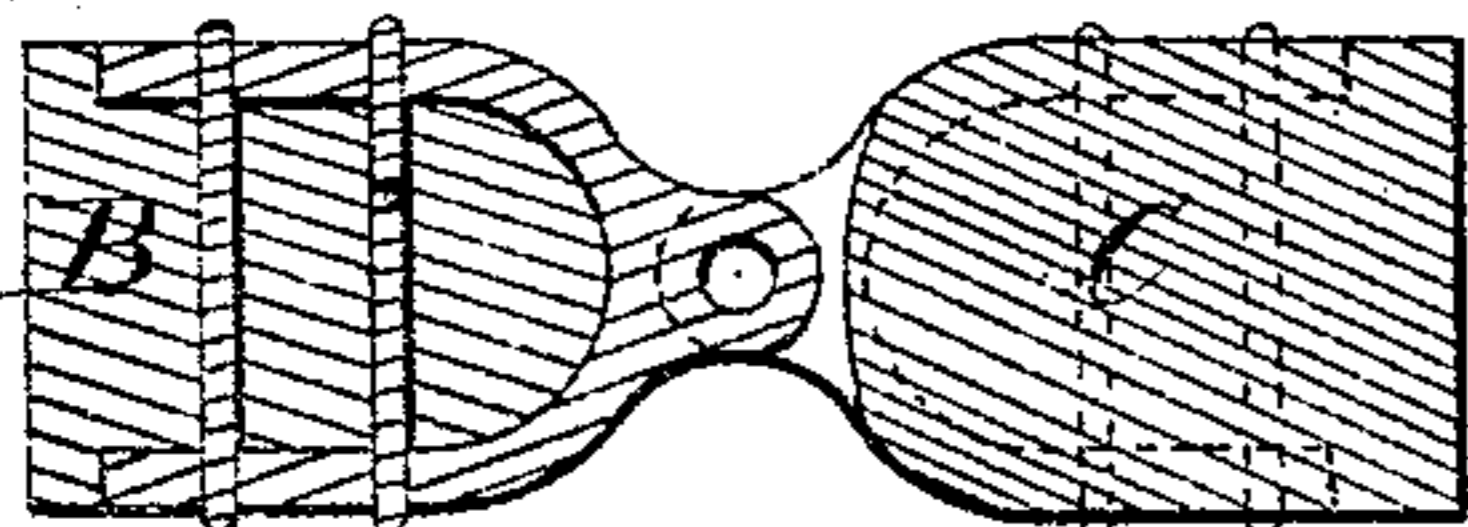
*Fig. 2.*



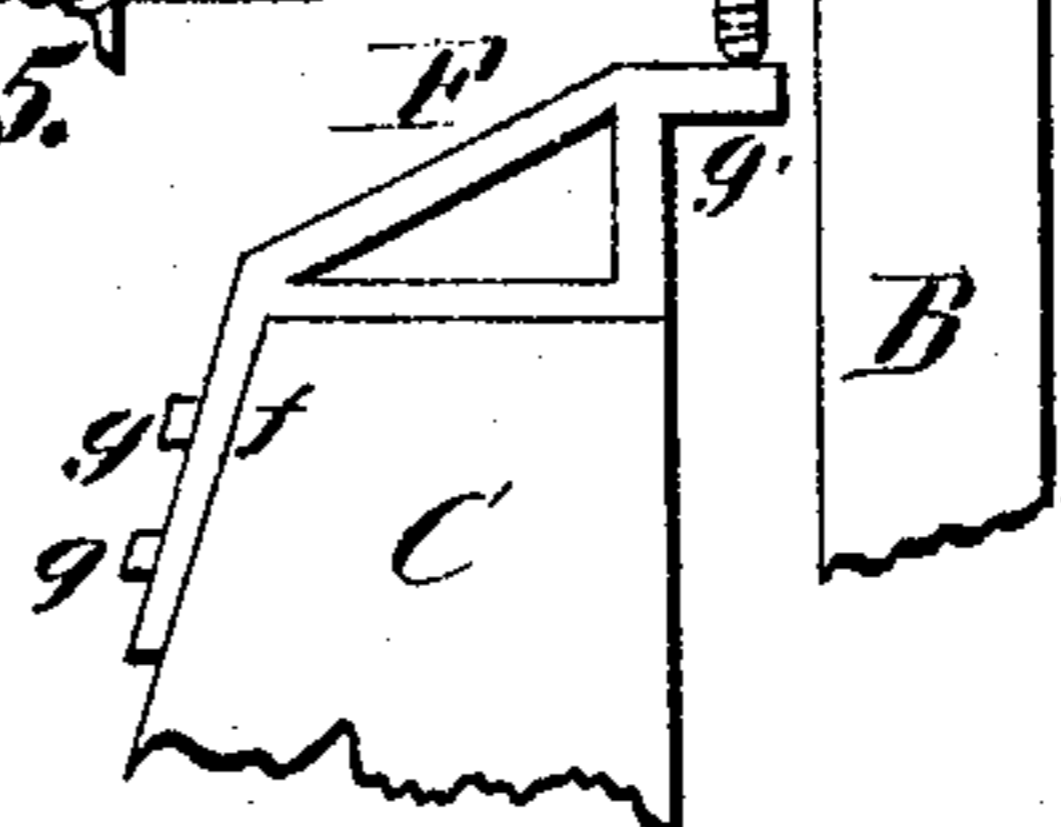
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



*Witnesses.*

*C. B. Steele*

*Geo. E. Upham.*

*Inventor.*

*Oliver P. Tharp,*  
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*Attys,*

# UNITED STATES PATENT OFFICE.

OLIVER P. THARP, OF CINCINNATI, OHIO.

## IMPROVEMENT IN RUDDERS FOR VESSELS.

Specification forming part of Letters Patent No. 135,385, dated January 28, 1873.

*To all whom it may concern:*

Be it known that I, OLIVER PERRY THARP, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and valuable Improvement in Anti-Friction Rudder-Support, which is more fully hereinafter described; and I 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 annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side elevation of my invention. Figs. 2, 3, 4, and 5 are detail views of the same.

This invention has relation to rudders for steamboats and other vessels; and consists in the construction and novel arrangement of devices for supporting the rudder above the ordinary bolt-irons, thereby reducing the friction on the rudder-bolt, and enabling heavy rudders to be easily controlled.

My invention is designed to be applied to all bolt-shipped rudders, whether the same be single or "balance" rudders.

Referring to the drawing, A designates a rudder; B, the rudder-stock; and C, the stern-post of the boat, to which the rudder is secured. D D designate the rudder-irons, through which pass the vertical-bolt E, as shown. Upon the top of the stern-post is placed the supporting-iron F, having the depending-strap *f* secured to the back of said post by wood screws or bolts *g*, and having

the horizontal flange *g'* in which is formed a saucer-like recess, *z*. H represents a loop or clip attached to the rudder-stock at a point slightly above the supporting-iron. Said clip has an eye formed at *h*, with a thread cut inside it, and a pointed steel screw, *h'*, passed through. The point of said screw rests on the iron F in the recess *z*, which recess contains oil to lessen friction. The point of said screw is directly above the rudder bolt, and turns upon the supporting-iron. By means of said screw and supporting-iron the entire weight of the rudder is taken off the rudder-bolt, and the rudder rendered capable of easy manipulation. According as the iron and screw become worn, and the rudder to sag, the screw may be adjusted to compensate for the wear. I represents a lock-nut placed upon the screw below the clip H, and designed to prevent the screw from turning back after adjustment.

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

The supporting-arm F, clip H, and screw or pin *h'*, in combination with a bolt-shipped rudder, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

OLIVER PERRY THARP.

Witnesses:

A. W. ROBINSON,  
JAMES H. PEPPER.