

*D. Fitzgerald,
Sails & Rigging.*

N^o 37,571.

Patented Feb. 3, 1863.

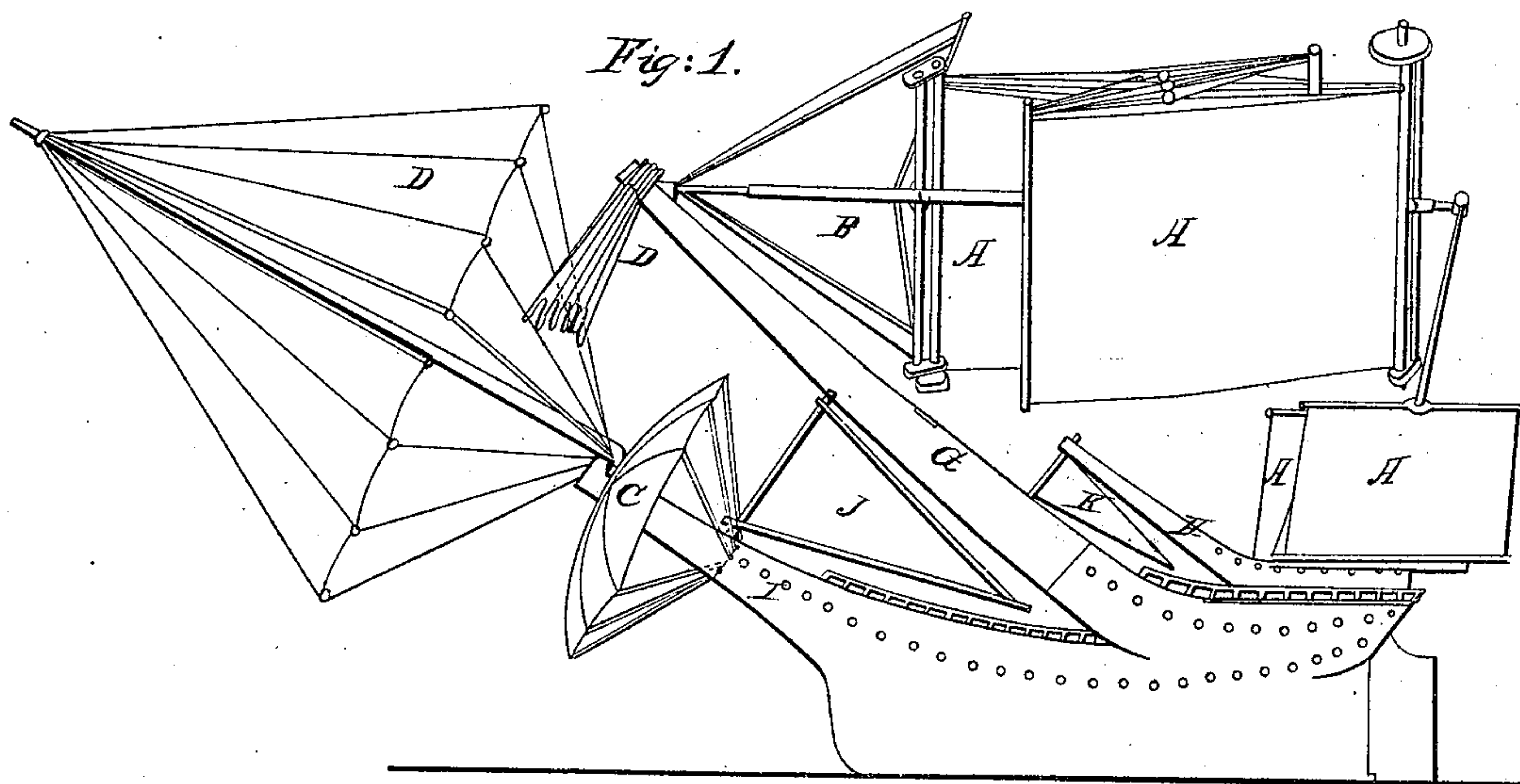


Fig: 2.

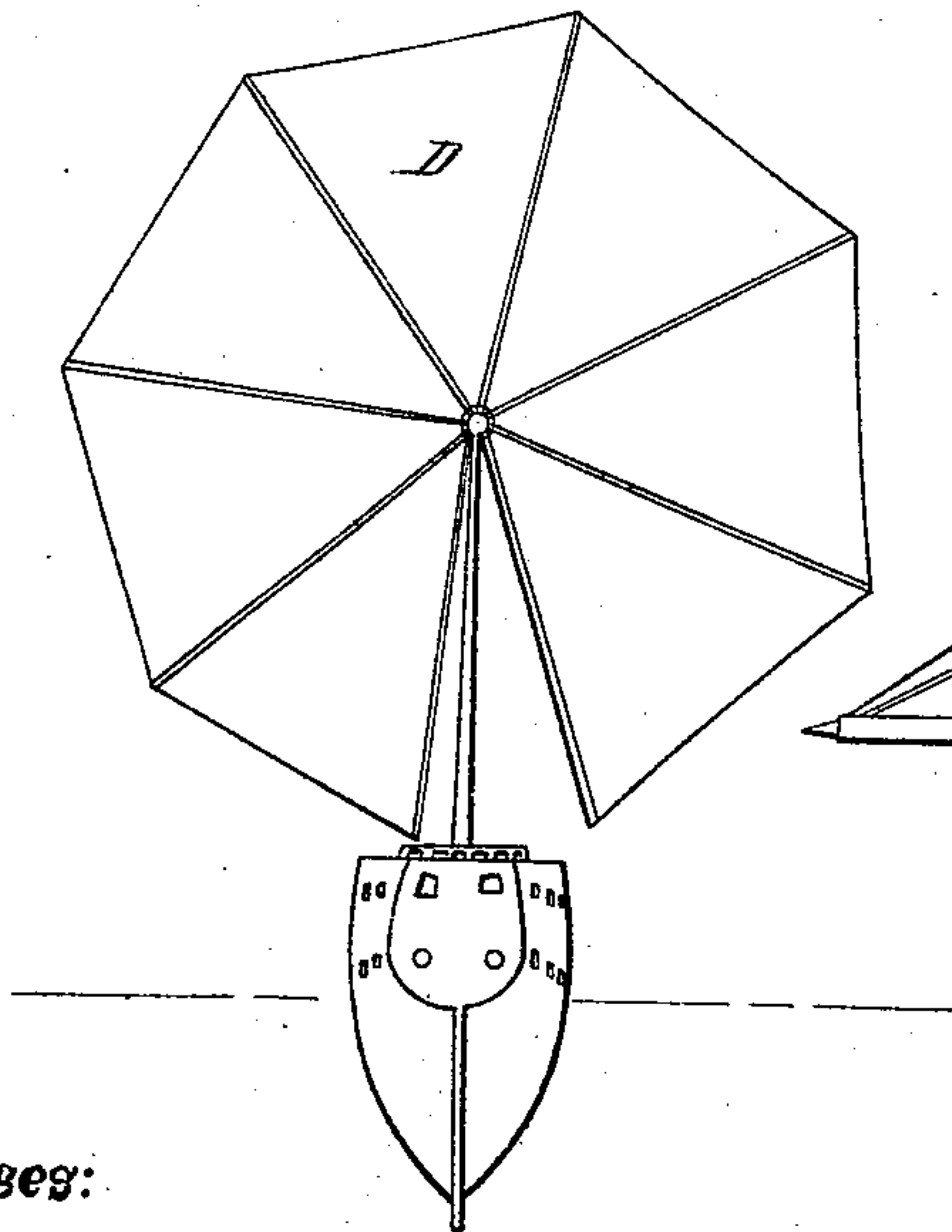
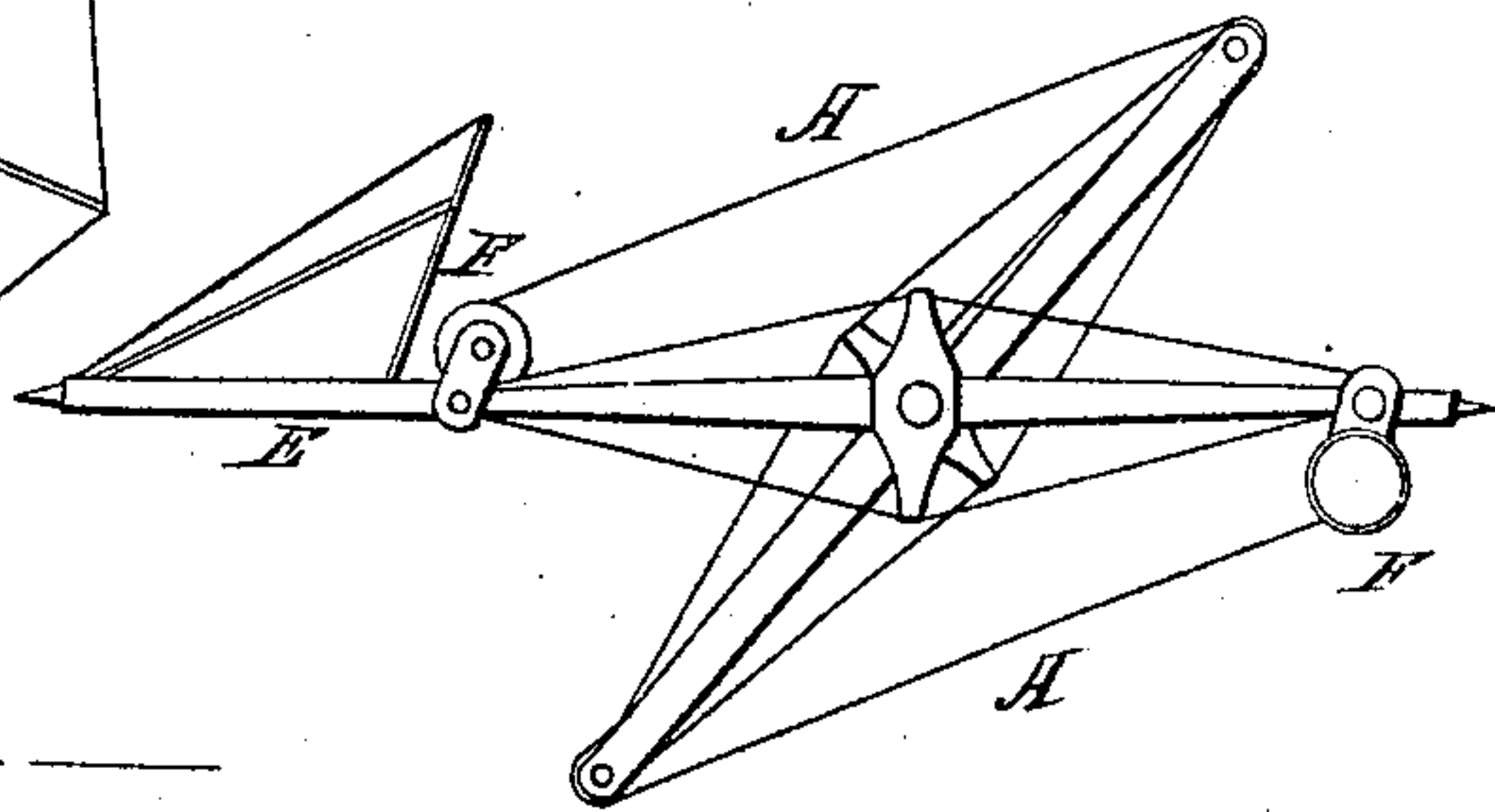


Fig: 3.



Witnesses:

*Amos F. Warren
R. W. Stickney*

Inventor:

Daniel Fitzgerald

UNITED STATES PATENT OFFICE.

DANIEL FITZGERALD, OF NEW YORK, N. Y.

IMPROVED SAIL OF VESSELS.

Specification forming part of Letters Patent No. 37,571, dated February 3, 1863.

To all whom it may concern:

Be it known that I, DANIEL FITZGERALD, of the city, county, and State of New York, have invented a new and useful Improvement in the Construction and Rig of Ships; and I hereby declare that the following is a full and exact description thereof.

To enable others to make and use my invention, I proceed to describe its construction and operation, reference being had to the drawings hereunto annexed, and making part of this specification.

Figure 1 is a side elevation of the ship with the sails generally spread, the circular sail on jib-boom; Fig. 2, a stern view showing the circular sail set midships; Fig. 3, the self-adjusting sail A, as seen edgewise.

The same letters refer to the same things in all the drafts.

A is the self-adjusting sails stretched upon the cross-frames, Fig. 3; B, the jib attached to it to keep it in the wind; C, the collapsing jib on the bowsprit; D, the great circular sail, to be used on the jib-boom or on a horizontal axis between the mast and mid-bowsprit; E, the horizontal axis or yard upon which the sail A is hung; F, coiled springs at the ends of the rollers upon which the sails A are set to roll up the sail; G, the mid-bowsprit; H, mizzen-bowsprit; I, the bowsprit; J, mid jib; K, mizzen jib.

This kind of ship is intended to be sharp and narrow and to set deep in the water. The whole under hull may be submerged, there being a water-tight deck to close it in after the cargo is stowed, and the passenger-department constitutes an upper ship entirely separate. The bowsprit is intended to be made of boiler-iron, and to be hollow and buoyant, and to admit of free passage for the seamen and for the purposes of ventilation. A mid-bowsprit is erected in the ship to sustain the peculiar sails. A mizzen-bowsprit may also be made useful. Between these are set the mid-jib J and the mizzen-jib K. The rigging of the ship must be adapted to its peculiar construction. It is intended to do without shrouds, as there is passage up inside the bowsprits, and their size is large enough to be safe. Upon the bowsprit I is set a circular sail upon radi-

ating yards, or otherwise sustained, which, when set free on emergency, may fall forward with the wind and collapse. Upon the mid-bowsprit is set a circular sail, D, made to fold together like a fan, one of the yards being stationary, and the proper rigging being fitted to it to turn one side round the bowsprit to fold it beneath. Upon the jib-boom is set a similar sail, to open and receive the wind on one side or under or full, and to turn on its pivot at the end of the bowsprit, as may be desired. This may be collapsed similarly to the other. Upon the horizontal yard, between the mast or its equivalent and the mid-bowsprit, is set the self-adjusting sail A, made to turn partially or entirely over. It is set upon rollers or yards on the ends of cross-trusses, (see Fig. 3,) pivoted together at the centers. Each sail is made to roll up on one of the yards on the cross-truss, and there may be a coiled spring set to effect that purpose, or it may be wound up by a windlass. In case of danger, the coiled springs being liberated, the sails are instantly furled. At the forward part of the pivoted yard E, Fig. 3, is set a jib, which will always keep the sails A in the wind, and requiring no attention from the navigator in tacking; but this jib may be omitted and one of the sails enlarged. Another sail or pair of sails, A, is set on the mast, near the deck. In case of a sudden flaw, these sails can be instantly turned edgewise to the wind, and in case it were desirable they may be so set at a small angle to the horizon as to have a lifting and protecting quality. When the wind is strong aft, all the sails have a powerful upward draft, all being so constructed as to lift. The great circular sail is set either on the jib-boom or on the horizontal pivoted yard. When on the yard, it can be opened so far as required and receive the wind full on either side or below, and be instantly collapsed near the deck in case of danger. Instead of rolling up the sails A by means of a coiled spring or otherwise turning the roller, they may be attached to permanent yards on the cross-trusses, and they may be shut together and furled round the yard; or they may be stretched so as to lie close together (spread) in a line with the ship when it is necessary to lie near the wind. The buoyant bowsprit

I is made large and hollow to keep the ship from diving into a wave, and to prevent its capsizing. There is no connection between the upper and the under ship—an entire deck passes between them.

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

1. The self-adjusting sails A, constructed and arranged substantially as above described.
2. The collapsing jib B, constructed and arranged substantially as above described.
3. The collapsing circular sail C and D, made

to fold like a fan, constructed and arranged substantially as above described.

4. The mid-jib between the two bowsprits, as constructed and described.

5. Suspending a circular sail, D, between the mast and bowsprit, or on a jib-boom, constructed and arranged substantially as above described.

DANIEL FITZGERALD.

Witnesses:

OWEN G. WARREN,
R. W. STICKNEY.