(No Model.) 2 Sheets—Sheet 1.

H. TUDOR.

SPAR AND SAIL.

No. 266,065. Patented Oct. 17, 1882.

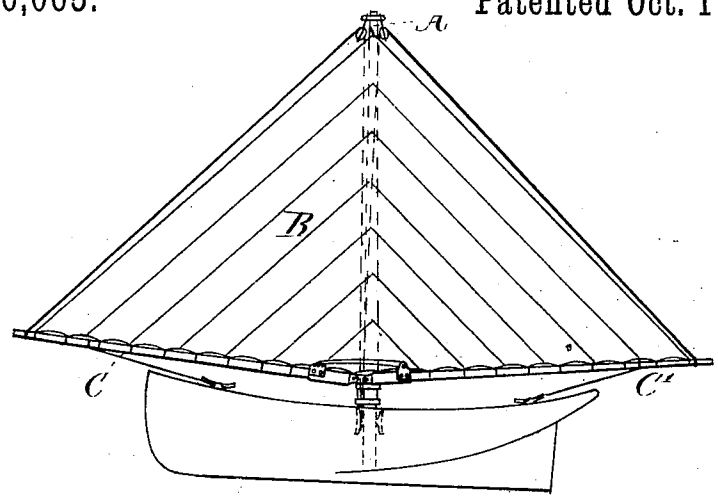


Fig. 1.

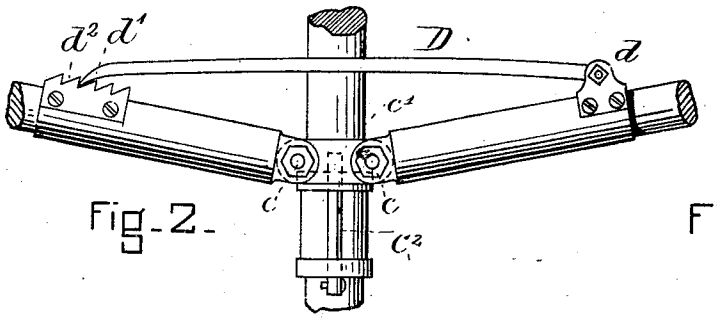


Fig. 2.

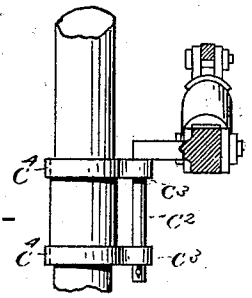


Fig. 4.

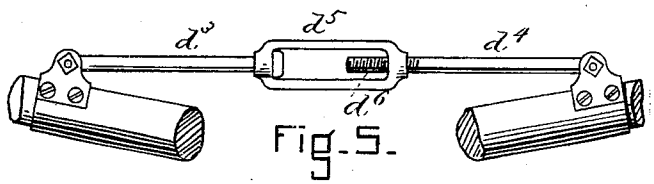


Fig. 5.

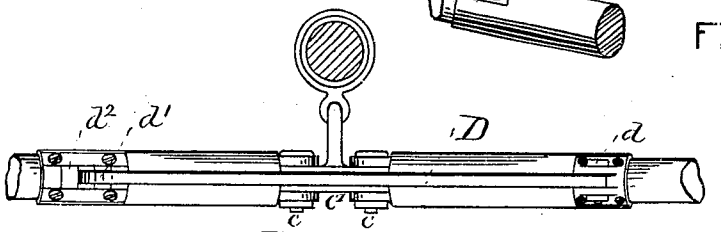


Fig. 3.

WITNESSES

N. C. Fogg.

Fred. Harris

INVENTOR

Henry Tudor

by his attys

Clarke & Raymond.

N. PETERS, Photo-Lithographer, Washington D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 6.

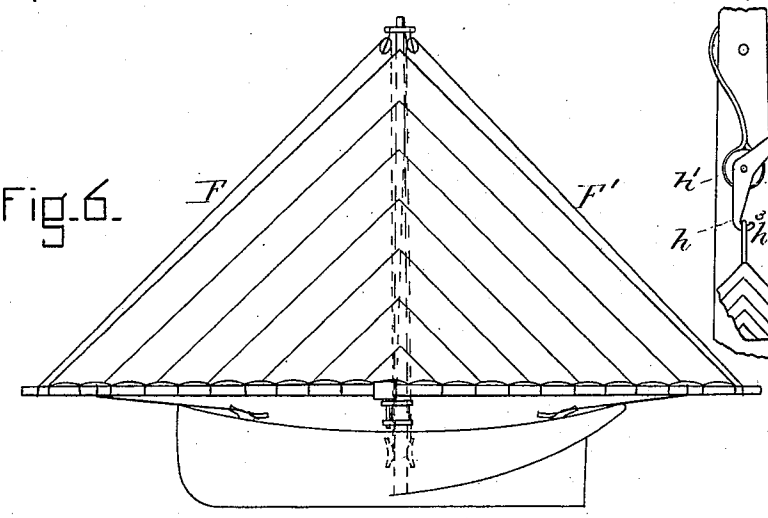


Fig. 10.

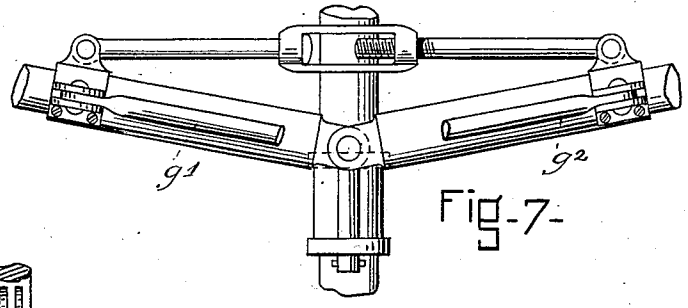


Fig. 7.

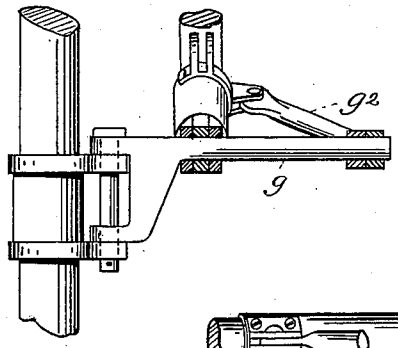
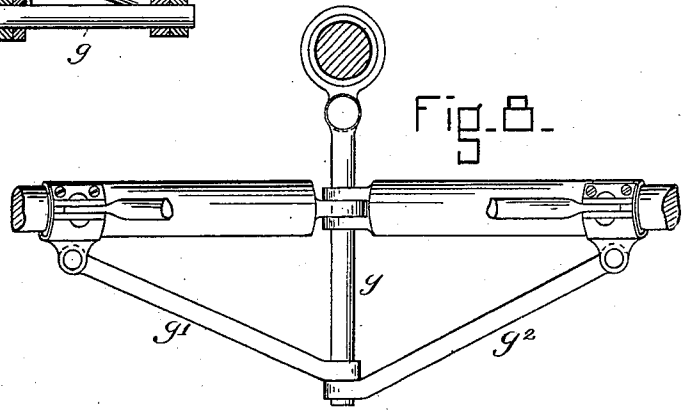


Fig. 9.

Fig. 8.



WITNESSES

W. C. Fogg.

Fred. Harris

INVENTOR

Henry Tudor

by his attys

Auld & Raymond

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY TUDOR, OF BOSTON, MASSACHUSETTS.

SPAR AND SAIL.

SPECIFICATION forming part of Letters Patent No. 266,065, dated October 17, 1882.

Application filed January 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY TUDOR, of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Sails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature, in which—

Figure 1 is a side elevation of a one-masted boat equipped with my invention. Figs. 2, 3, 4, 5, 7, 8, and 9 relate to details in the manner of attaching the boom or spars to the mast, which will hereinafter be more fully described. Fig. 6 represents a one-masted boat in which one spar or boom only is employed. Fig. 10 illustrates a device for tripping the sail when hoisted, which will hereinafter be more fully described.

This invention relates especially to the form of sail used and to the manner of bending it to or supporting it upon the mast and spars, and on account of its taking the place of a number of sails of ordinary construction, I have given it the name of the "E Pluribus Unum" sail. The sail is substantially triangular in shape, with its brace parallel, or substantially parallel, with the deck, and preferably a little longer than the sides, and when spread it preferably extends equal areas from each side of the mast, the mast, as it were, forming the median vertical line of the sail from its apex down; but of course I do not confine myself especially to this location of the sail in relation to the mast, as it may be so bent in relation thereto that the area on one side shall be greater than the area on the other. To properly use it of course calls for a peculiar arrangement of spars or booms, manner of securing to the mast, and rigging. While one long boom will answer for small vessels of peculiar construction fairly well and for ice-boats and catamaran, I prefer to use two booms hinged to each other at their butts or to some common support, in order that they may be lifted from a horizontal plane when necessary, for reasons which are preferably obvious to every seaman.

In the drawings, A represents the mast; B, the triangular sail; C, one boom and C′ the other. These booms are represented in Figs. 2, 3, 4, and 5 as hinged at c to the block c', and this block has projecting downwardly a bolt or pivot, c^2, which enters the sockets c^3 in the lugs, projecting horizontally from the rings c^4 about the mast. The pivot c^2 allows the beam to be swung upon a vertical axis in any direction in relation to the mast. To prevent the beam from lifting when in proper position, it is necessary to use some holding device for holding or locking them in a given position, and I show in Fig. 2 a bar, D, which is hinged at d to one boom, and has a curved pointed end, d', which is adapted to fit into the notches d^2 upon the other boom. In lieu of this holding device, the one shown in Fig. 5 may be employed. This consists of two hinged arms, d^3 d^4, one of which is attached to one boom and the other to the other, and one of which carries a turn-buckle, d^5, and the other of which has a screw-thread, d^6, upon which the turn-buckle screws, and by which the booms are adjusted as to height by simply turning the buckle.

The mast may be supported by suitable shrouds or may be trussed from the deck. The shrouds may of course run fore and aft to a considerable extent; but one rope is needed for lifting the sail, and this is fastened to the apex of the sail, and passes through suitable blocks or pulleys in the ordinary way, or through a sheave in the top of the mast. The booms are lifted and lowered by ropes F F′.

In lieu of the construction shown in Figs. 2, 3, 4, and 5, I may employ that represented in Figs. 7, 8, and 9, in which the pivoted bar g takes the place of the block c', the booms being pivoted upon the bar and the bar extending sufficiently to receive and support at its end the stay-rods or truss g' g^2.

I have represented in Fig. 10 a contrivance for tripping the sail when hoisted from the deck, whereby in a squall the halyards may be let go without lowering the sail; and it consists in the hook h, pivoted to a block, h', and having an arm, h^2, and hooking into the ring h^3 on the end of the sail. A rope, h^4, extends from the end of the arm h^2 to the deck, and by drawing thereon the hook is turned sufficiently to allow it to slide off the end. Of course I do not confine myself to this con-

struction of tripping mechanism, but may use any other for the purposes of this invention.

I do not confine myself in the use of this invention to one-masted or small vessels. The sail may be used for two, three, or four masted boats. The sail may be so constructed as to be extended horizontally any required distance by making the boom sufficiently long to provide supports for additional sails; or more sails upon the same mast, one above the other, may be used.

The advantages of this invention are:

First. Simplicity.

Second. Almost complete avoidance of the use of top and other hamper.

Third. Superiority on every point of sailing. In sailing by the wind there is no swinging off of the head of the sail. In sailing before the wind the whole sail is exposed to the wind. Therefore a given area of sail will give the vessel greater speed than the same area in any other rig.

Fourth. Great saving of labor and avoidance of danger, as this rig does away with going aloft, everything working from the deck or from the booms, which are but a few feet above the deck.

Fifth. The easy bending and unbending of the sails, as it enables a vessel to set a sail suited to the force of the wind very quickly, and does away with the expense of bending and unbending sails when departing and arriving at a port.

Sixth. It give absolute immunity from danger of capsizing and dismasting in squalls, because the sails can be disconnected from the halyard in an instant, as above indicated, and fly out with the wind.

Seventh. The mean point of pressure of the sail upon the mast is brought nearer the deck than by any other rig.

I know of the sail described in Patent No. 2,533, granted J. A. Etzler, dated April 1, 1842, and of that described in Patent No. 210,573, granted W. H. Spooner, dated December 3, 1878; but I consider that they do not embrace the spirit of my invention.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of a mast, the booms C C′, having independent vertical movements in relation to each other, and means, substantially as specified, for locking them in any given position or at any given inclination, and the triangular sail B, entirely above the booms, having equal areas, or substantially equal areas, upon either side of the supporting-mast, all substantially as and for the purposes described.

2. The combination of a mast, the booms C C′, having the movements in relation to each other specified, and means for holding them in any given position pivoted to the mast or other suitable support in a manner to permit their horizontal swinging movement thereon, and a triangular sail entirely above the booms, having equal or substantially equal areas upon each side of the mast, all substantially as and for the purposes described.

HENRY TUDOR.

Witnesses:
F. F. RAYMOND, 2d,
WILLARD C. FOGG.