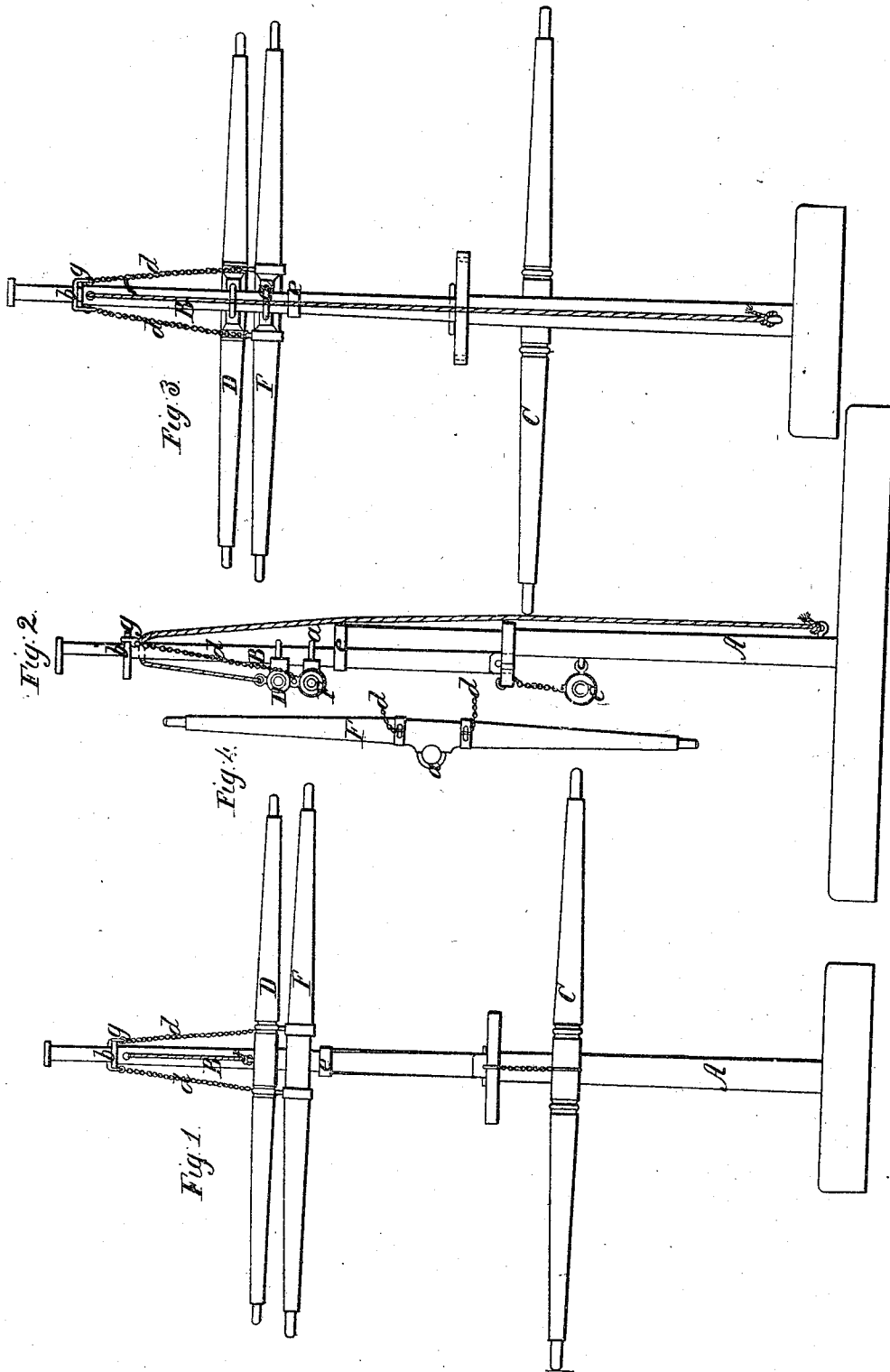


G. Hubbard.
Topsail Yard.

N^o 14,723.

Patented Apr. 22, 1856.



UNITED STATES PATENT OFFICE.

GEORGE HUBBARD, OF STONINGTON, CONNECTICUT.

SUSPENDING EXTRA TOPSAIL-YARDS.

Specification of Letters Patent No. 14,723, dated April 22, 1856.

To all whom it may concern:

Be it known that I, GEORGE HUBBARD, of Stonington, in the county of New London and State of Connecticut, have invented an Improvement in the Application of Extra Topsail-Yards to Vessels; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, is a front elevation of a vessel's mast provided with two topsail yards and an extra yard applied to it in accordance with my improvement. Fig. 2, is a side view of the same; Fig. 3, a rear elevation of it; Fig. 4, a top view of the extra yard.

In these drawings, A, represents the mast, and B, the topmast applied together in the usual way; C, is the lower yard of the topsail, and D, the upper yard thereof; F, exhibiting the "extra yard." This "extra yard" I arrange above the lower mast head or its cap as seen in the drawings, and I apply said extra yard to the topmast by means of a staple or clasp as seen at *a*, and in such manner that the extra yard may be raised up toward the trestletree, *b*, in the same manner as the upper yard is usually elevated; and furthermore I suspend the extra yard from the trestletree, *g*, or the topmast in the vicinity thereof, by means of two chains or ropes, *d*, *d*, they being arranged on opposite sides of the center of the yard and so as to maintain the said yard in a horizontal position or thereabout.

The above mode of arranging the extra yard, applying it to the topmast, and supporting it by chains hanging from the trestletree or any part of the top mast in the immediate vicinity thereof, is a matter of great importance and advantage, where an extra yard is used in combination with the two topsail yards, and for the purpose of enabling topsails to be reefed in a manner well known.

I am aware that the application or use of an "extra yard" to a topsail and its two yards is not new, the same having been used for many years, and particularly in what is termed the "Forbes rig" for vessels. It will be found described, in a printed work, published by R. B. Forbes, and entitled a "New rig for ships and other vessels," such work having been printed in Boston, by Wier and White in 1849. I am also aware, that a patent was granted on June 20th 1854, to Fred-
eric Howes, wherein, he, as I believe, im-

properly lays claim to the invention of the application of an extra yard supported by a truss crane or brake (of a peculiar construction) or its equivalent, such being to effect the same purpose as the "Forbes rig" and it may be said to be substantially the same in principle. Neither in the "Forbes rig," nor in the patent of Howes, is the extra yard or its connection with the mast arranged above the lower mast head or its cap and so that said extra yard may be raised above the said head and up toward the trestletree, such extra yard, in Forbes' and Howes' plans being below the lower mast head.

The arrangement of the extra yard above the lower mast head and its cap, and its application to the topmast in such manner as to allow of its being raised toward the trestletree, constitutes an important feature in my invention, and it is of great value, as it enables a person to use the extra yard in the place of the upper topsail yard, in case the latter is carried away or becomes injured. This cannot be accomplished when the extra yard is affixed to the topmast and arranged below the cap, *e*, of the lower mast head; because from the nature of such an arrangement and adaptation, as well as from the extension of the cap around the topmast, obstacles are presented to elevating the yard above the cap. Other advantages are to be found in my improvement, as by means of it the usual danger of injury to the cap at the mast head, or that which results from strain upon it by the yard is avoided. In case of loss of either of the upper yards, the other can be employed in place of it.

The employment of two topsail yards and an extra yard is now very general; as by them the topsail which is usually made in two parts can be reefed in a very short time, a few seconds generally sufficing to complete the operations of changing them from a whole to a close reefed topsail, and this without requiring the mariners to go aloft as is necessary when sails are furled; the upper topsail when lowered down falling forward of the lower topsail and yard and being entirely becalmed.

What I claim as my invention or improvement in the application of the extra yard is—

Arranging the same or its connection with the mast, above the cap of the lower mast head and applying said extra yard to the

topmast and suspending it from, or near the
trestletree, by means essentially as described
whereby said yard may not only be raised
up toward said trestletree, but be supported
5 in the manner set forth and be capable of
being braced around as occasion may re-
quire, and this without danger of injury to
the cap of the lower mast head.

In testimony whereof I have hereunto set
my signature this seventeenth day of March 10
A. D. 1856.

GEO. HUBBARD.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.