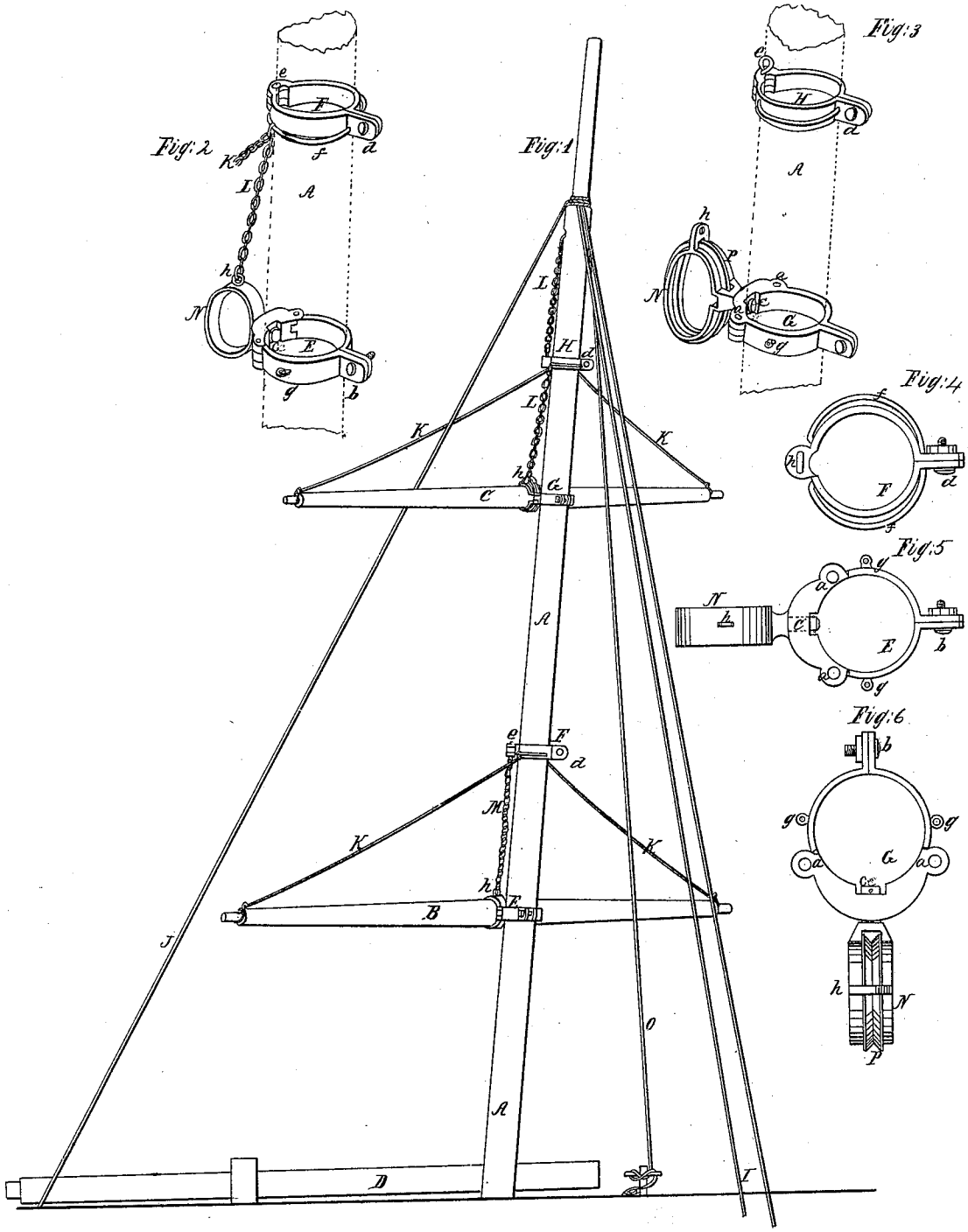
W. Webster.

Ship Mast and Spars.

No. 20,673. Patented Jun. 22, 1858.



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UNITED STATES PATENT OFFICE.

W. WEBSTER, OF JEFFERSON COUNTY, WASHINGTON TERRITORY.

MASTING AND RIGGING VESSELS.

Specification of Letters Patent No. 20,673, dated June 22, 1858.

To all whom it may concern:

Be it known that I, WILLIAM WEBSTER, of Jefferson county, in the Territory of Washington, have invented certain new and useful Improvements in the Method of Rigging Vessels; and I do hereby declare the following to be a correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1, is a side view of a foremast rigged according to my improved plan. Fig. 2, is a view of the truss band and lift band of the lower yard. Fig. 3, is a view of the truss band and lift band of the topsail yard. Fig. 4 is a bottom view of the lift band Fig. 3, enlarged. Fig. 5, is a top view of the truss band Fig. 2. Fig. 6, is a top view of the truss band Fig. 3.

The same part is indicated by the same letter of reference in all the figures.

My invention consists in a new mode of making and rigging the masts and yards of vessels of all sizes, as hereinafter more particularly described.

In the drawings, A marks the mast; B, the foreyard; C the topsail yard; D the bowsprit; E, the truss band of the lower yard; F, the lift band of the same; G, the truss band of the topsail yard; H, the lift band of the same; I, shrouds; J, the forestays; K, K, lifts; L L, topsail ties; M, slings of lower yard; N, yard bands; O, halyards; P, annular sheave of topsail yard.

a, marks the hinge bolts of truss bands; *b*, the screw or clamp bolts of truss bands; *c*, pivot bolt connecting yard band, N, to mast band; *d*, screw bolts of lift bands; *e*, hinge bolts of lift bands; *f*, slide rods of lift bands; *g*, shackle bolts for prevention shroud; *h*, shackle bolts for slings of lower yard.

The masts I make of one piece of timber, as represented in the drawing. Ships' masts are now made of three or four pieces, by doublings, which necessitates a great deal of top hamper to secure and hold these pieces in place, and cumbrous contrivances to hoist and lower them. This top weight involves a decrease in the length of the spars, and in the spread of the canvas. It is also an important element in the cost of a ship. An abundance of sticks long, straight, and large enough for a ship's mainmast, and of the proper material, can be obtained on the north west coast of the United States, and probably in many other portions of the world. For smaller vessels, sticks of proper dimensions are everywhere readily obtained. The mast, thus formed, is secured to the hull by wire shrouds, placed at an unusually large angle with the mast, and so arranged that the lower ends of the after shrouds of the foremast, will be immediately contiguous to those of the forward shrouds of the main mast, and so with the others. A ship, with masts and shrouds of this description, will carry with safety one fourth more canvas than the ordinary amount, and will sail much nearer to the wind.

I make the yards much longer than usual, and secure them to the masts by an improved form of truss band. These bands are hinged at (*a*) and have clamp screws (*b*) to hold them at any desired position on the mast. The yards are held in bands (N, N &c.) hinged to pivot bolt (*c*), which rotates in an enlarged portion of the mast bands, as clearly shown in Figs. 5, and 6. This mode of attachment allows motion to be given to the yards in every required direction.

The lifts K are attached to the lift bands, F and H, which are clamped to the mast by screw bolts (*d*), at the proper distance above their respective yards. The hinge bolts *e*, *e*, of these lift bands have eyes at their lower ends, to which the chain slings, L L, of the yards, are hooked. There are also, on the sides of these lift bands, slide rods (*f*, *f*,), to which the lifts are attached by a ring, loose enough to move along the rods as the yard traverses in either direction.

The bands N, N, of the topsail yards, (Figs. 3 and 6), are slit for the reception of an annular sheave, (P), which receives the topsail yard, and which may be rotated in the band as the sheave of a common pulley is rotated by a rope in its groove. On the sides of the bands E and G, are shackle bolts *g*, *g*, &c. for the passage of the prevention shrouds. Just inside the hinge of the lift bands, are grooves for the passage of the ties L, but they may be omitted if preferred, and the ties attached to the lift band at top and bottom, as shown at H Fig. 1. The ties and slings are hooked to shackle bolts *h*, *h*, in the top of the bands. The yards work inside the shrouds, and can be hoisted up, or lowered down upon the rail, by means of the halyards, O, as readily as sails are commonly hoisted and lowered; and when on the rail, can be pointed nearly fore and aft. The topsail yard may be rotated on its axis

by means of the sheave, P, as before mentioned.

I make the bowsprit, D, to run inboard, through the center of the stem. It is shown in this position in Fig. 1. When it is thus run in, and the yards lowered, the ship will present to the action of the wind only three bare poles, and a few small wire shrouds.

I do not support or connect the masts by stays as in ordinary ships, relying upon the great inclination of the shrouds to give them the required stability. Nor do I connect the bowsprit to the foremast by anything more than a small cord, which can be severed in an instant, when required, and which would yield of itself to a much smaller force than would suffice to carry away the bowsprit. The effect of this arrangement is that the loss of one mast does not involve the loss of the others; and the common accident of carrying away the bowsprit does not endanger the masts.

Having thus fully described my invention what I claim therein as new and desire to secure by Letters Patent is the following devices constituting together a new system of rigging:

1. Substituting for the compound and connected masts now in use on large vessels, independent and disconnected masts made of a single stick of timber, as and for the purpose described.

2. Attaching the masts to the hull by shrouds placed at the angle with the mast as described and represented.

3. The truss bands for attaching the yards to the masts and holding them at any desired point thereon constructed and operating as described.

4. The lift bands to which the lifts and slings are attached constructed and applied as described.

The above specification signed and witnessed this 1st day of June A. D. 1858.

WM. WEBSTER.

Witnesses:

R. T. CAMPBELL,

CHAS. F. STANSBURY.