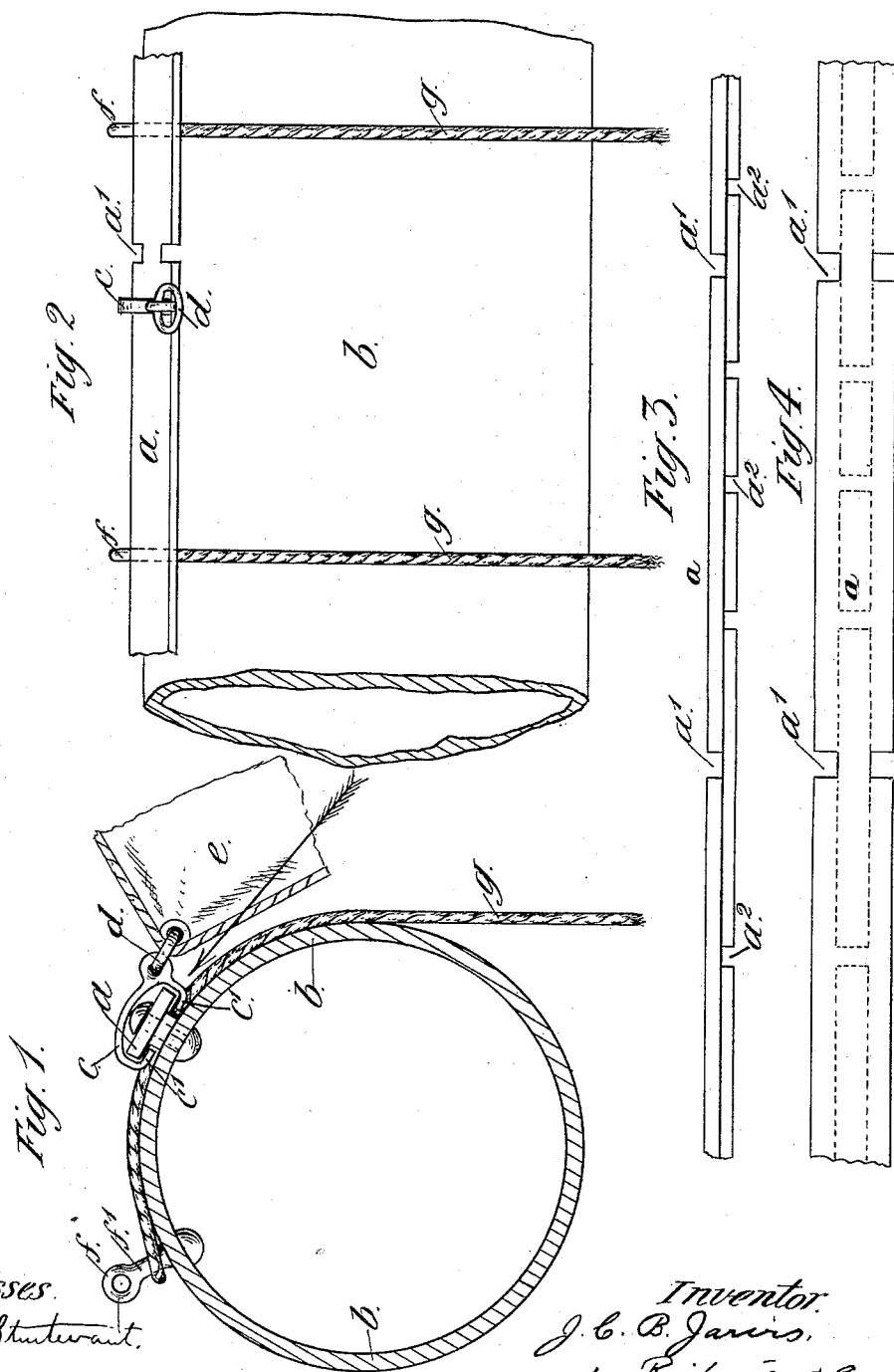


(No Model.)

J. C. B. JARVIS.
RIGGING TACKLE FOR SHIPS.

No. 465,857.

Patented Dec. 29, 1891.



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UNITED STATES PATENT OFFICE.

JOHN C. B. JARVIS, OF TAYPORT, SCOTLAND.

RIGGING-TACKLE FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 465,857, dated December 29, 1891.

Application filed December 26, 1890. Serial No. 375,833. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHARLES BARRON JARVIS, shipmaster, a subject of the Queen of Great Britain, residing at Tayport, in the county of Fife, Scotland, have invented certain new and useful Improvements in Rigging-Tackle for Square-Rigged Ships, of which the following is a full, clear, and exact description.

10 This invention relates to certain improvements in rigging-tackle for square-rigged ships; and it consists in means for securing the sails to the yards and for bracing the yards.

15 In the drawings annexed hereto, Figure 1 represents diagrammatically a section of a tubular yard, and Fig. 2 a longitudinal view of a portion of the same. Figs. 3 and 4 are details of same.

20 In fitting the sail-yards according to this invention T-iron bars *a* (jack-stays) are bolted or riveted to the upper fore-quarter of the yard *b*, and the top bar (head of the T) of the jack-stay *a* is to have open portions thereof *a'* (of about one inch) at every nine or twelve feet apart and the lower bar (stem of T) is to have open portions *a''* at about three or four feet apart. Looking in the direction of the arrow, Fig. 1, the jack-stay would present the appearance shown in Fig. 3.

25 *c* is a hank or holding-piece used together with this jack-stay, and to which hanks the sail will be secured. The clip or saddle-like form of the hank *c* will enable the arms *c'* thereof to pass between the openings *a'* of the head of the T-shaped jack-stay and then be slid along to proper position on the yard *b*. The hanks *c* carry an eye in which hangs a ring *d*, to which the sail *e* will be attached by roving, so that chafing of the sail and its fastenings will be much reduced.

30 The rod and eyebolt jack-stay *f f'*, secured upon the upper after-quarter of the yard will carry short gaskets *g*, attached to the stems *f'*, one opposite each opening *a''* in the lower bar of the jack-stay *a*. When the sail is set, each gasket is passed through the opening *a''* opposite to it and hangs down between the sail and the yard. In furling the sail it is gathered to the yard and the loose end of the gasket *g* is taken over the sail and tied to the after jack-stay *f*.

The means for bracing the yards consist

in a combination of one or more sets of drums, of conical form, as will hereinafter appear, according to the number of yards which it is desired to bring under control. As at present practiced, each yard is braced by itself to the port and starboard sides of the ship. When the ship is sailing and is required to go on a new tack, the one side has to be eased off and the other side be hauled in by members of the crew.

According to this invention the braces are carried from the yard-arms of the yards to be acted upon through leading-blocks to the set of drums or winches by which the bracing will be effected. The number of drums will be according to the number of yards—as, for example, suppose there are three yards on one mast to be acted upon, there will be provided six drums, three for each side—that is, the port braces to the port drums and the starboard braces to the starboard drums. The said drums are made conical for the purpose that when the yards are square—that is, at right angles to the line of the keel—each drum will be half filled by the wire-rope brace wound upon it, the fixed ends of the braces being in each case preferably next the center—that is, to the smaller end of the conical drum. As the yard is slewed, the “sum” of the lengths of the two braces becomes shorter than their sum was when the yard was square. Consequently the conical drum becomes necessary in order to take up more of the brace hauled in and to give off less of the brace paid out. The coning of the drums is not that of a straight cone, but has a curved or variable contour, preferably parabolic. The drums are held in position in the cases where more than one yard is acted upon by friction pulleys and brakes, so that they can be worked together or independently, or be adjusted to the required lengths of the braces.

The pinion for driving may be toothed, as 1 to 5 of the purchase-wheel. The cogs connecting the drums may all be of the same size and number of teeth, so that the drums all make the same number of revolutions. In some cases—such as where there are six drums—the last drum for the uppermost yard of the three, if all the cogs be of the same size, would be very small. Therefore the gear-wheels may be arranged so as that the num-

ber of revolutions of the third pair of drums should be reduced, and consequently the diameter of this last pair of drums be kept larger.

5 The coning and sizes of the drums are governed by the radius of the truss, the length of the yard, the position of the first leading-block, the number of turns of rope found convenient, and the number of degrees through
10 which the yard is to be braced.

According to a modification of construction the port and starboard drums may be combined in one and an endless brace be employed with a few turns around the middle of
15 the double drum, "taking up" and "paying out" from side to side, according as the yards are set.

As will be readily seen from the above description and on inspection of the drawings,
20 the details of the fitting may be considerably modified without departing from the main features of the invention.

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

1. The improved means for attaching the 25 sails to the yards of square-rigged ships, consisting of the combination, with the yard and the sail, of the T-shaped jack-stay bar *a*, having the openings *a'*, and the hook-shaped hanks *c*, attached to the sail and adapted to 30 engage with the said bar *a*, substantially as set forth.

2. In rigging-tackle for square-rigged ships, the fittings of the yards consisting of the T-formed and slotted or breached jack-stay bar, 35 together with the hanks *c c' d*, attached to the sail and engaging said bar, and the eye-bolt bar *f f'* and gaskets *g*, passing beneath the jack-stay bar, all arranged and operating substantially as and for the purpose herein 40 set forth and shown by the drawings.

Tayport, November 11, 1890.

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