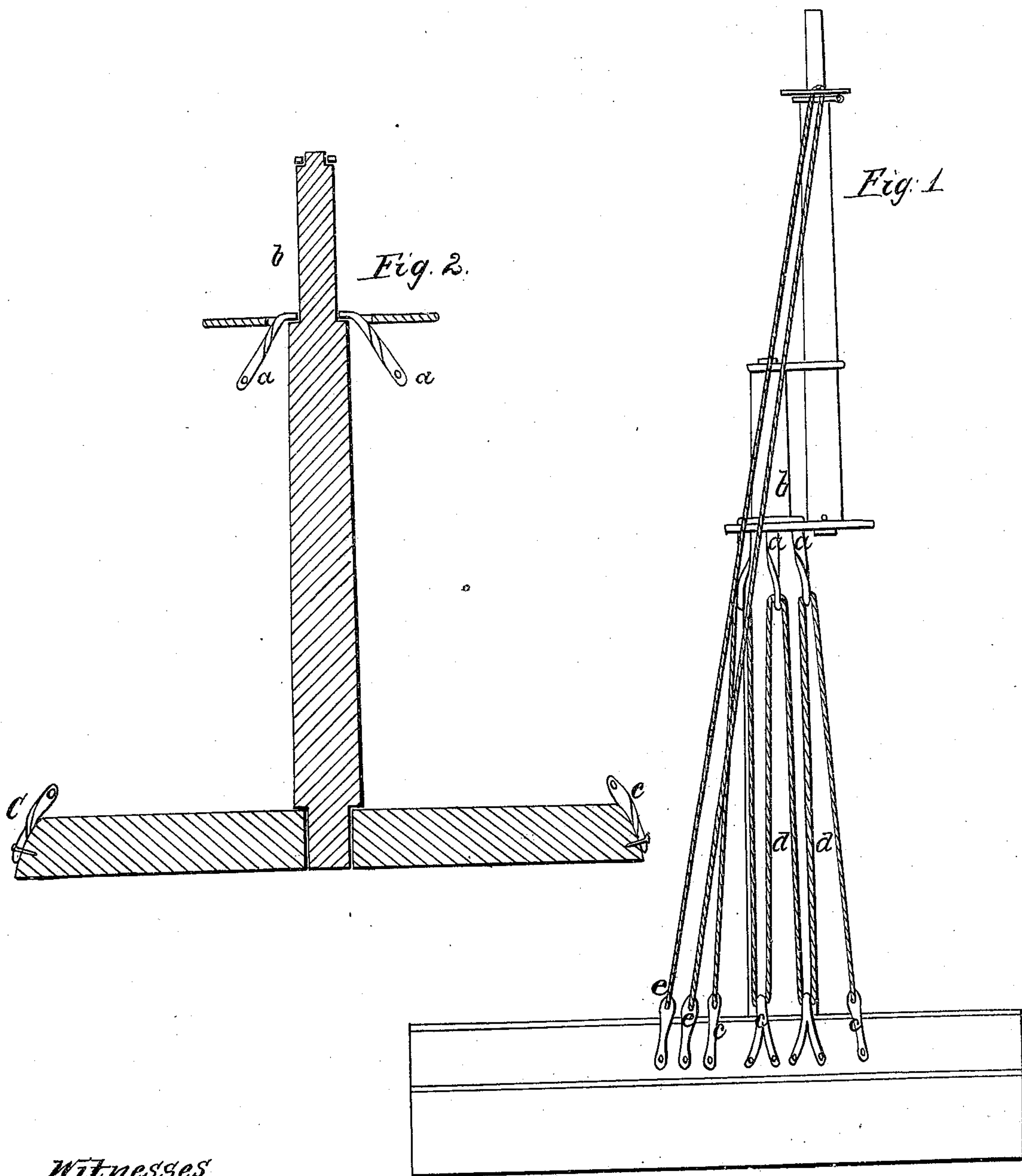


F. Howe.
Sails & Rigging.
Nº 12,390. Patented Feb. 13, 1855.



Witnesses.
Joseph G. Gantt.
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FREDC. HOWES, OF YARMOUTH PORT, MASSACHUSETTS.

SHIP'S STANDING RIGGING.

Specification of Letters Patent No. 12,390, dated February 13, 1855.

To all whom it may concern:

Be it known that I, FREDERIC HOWES, of Yarmouth Port, in the county of Barnstable and State of Massachusetts, have invented
5 certain new and useful Improvements in the Rigging of Vessels, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the
10 same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have se-
15 cured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1, is a side elevation of a mast, &c., with my improvements applied thereto.
20 Fig. 2, is a central vertical section of the same.

In the method hitherto employed of rigging vessels, the shrouds are so set up and fitted, as to be entirely independent of each
25 other, and have to be tightened, when occasion requires, separately. Thus when one shroud is tightened, all the others on the same side necessarily become slack thereby throwing all the strain upon the shroud that
30 has been tightened which when a vessel is rolling in a heavy sea is very liable to break.

My improvements consist in arranging the shrouds in one continuous piece, the rope of which they are formed being passed al-
35 ternately through straps at the mast head and similar ones at the chain plates. By this arrangement the shrouds can all be set up at once and any strain upon one portion will necessarily act upon all as the rope is
40 in one continuous piece. Thus all the

shrouds can be tightened at one operation, instead of being set up one at a time while the others are slack, as by the usual method.

a, a, in the drawings represents straps se-
45 cured to the mast head *b*. These straps may be formed of bars, chain, or rope, and may be fitted with "bull's eyes," thimbles, rollers or blocks.

c c, &c., are straps at the chain plates and may be fitted with bull's-eyes in a similar
50 manner.

d, d, is the rope of which the shrouds are formed and is first secured at one end to one of the lower straps *c c*, and then passes alternately through a strap at the mast
55 head and one at the chain plates as clearly shown in Fig. 1. The shrouds can thus be set up at once, by applying a tackle at one end. *e, e* are the "backstays" which are ar-
60 ranged and set up in a similar manner.

By this mode it will be seen that the ex-
65 pense of the rigging is very much diminished as the lanyards and dead eyes which are necessarily used by the method usually practised are dispensed with.

Having thus described my improvement I shall state my claims as follows:

What I claim as my invention and desire to have secured to me by Letters Patent is—

Forming the shroud, and back stays, or
70 other standing rigging, in one continuous piece, and conducting the rope of which they are formed, alternately through proper guides aloft, and guides at the channels, or chain plates, as above set forth.

FRED C. HOWES.

Witnesses:

JOSEPH GAVETT,
F. R. LINCOLN.