

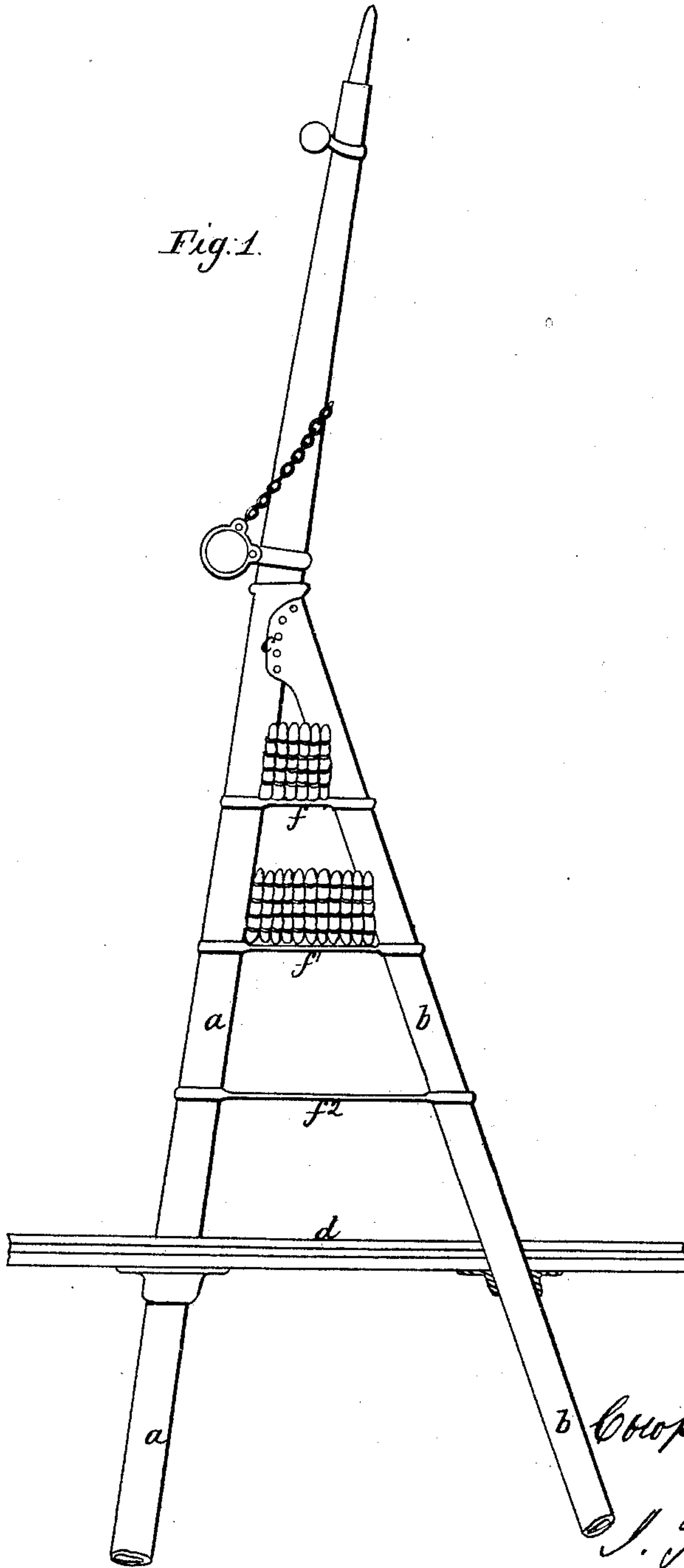
*C. P. Coles,  
Ships' Masts.*

*2 Sheets. Sheet 1.*

*N<sup>o</sup> 38,151.*

*Patented Apr. 14, 1863.*

*Fig. 1.*



*Witnesses;  
A. S. Thompson  
C. L. Jones*

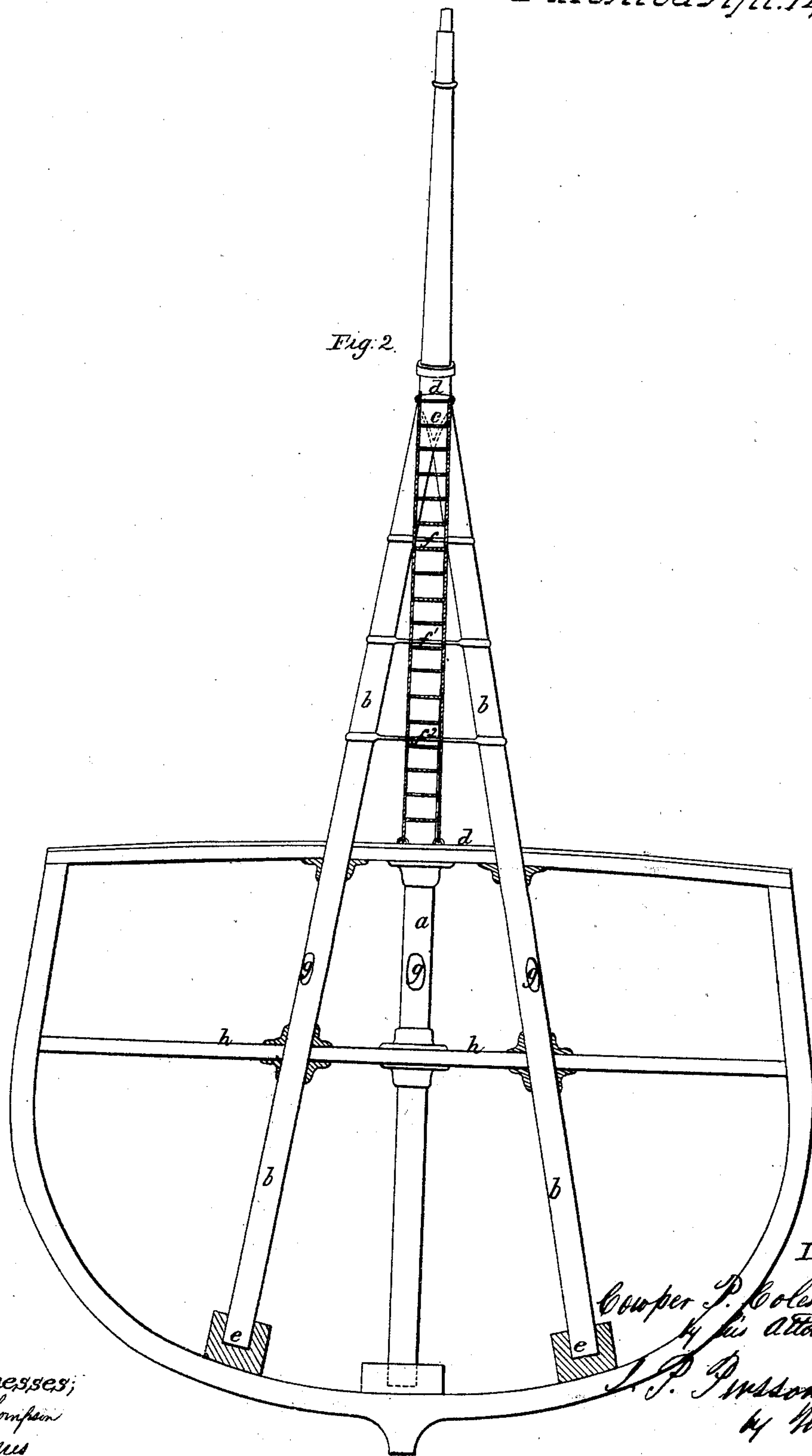
*Inventor;  
C. P. Coles  
by his Attorney,  
J. P. Pearson  
by Maynard*

*C. P. Coles,  
Ships' Masts.*

*2 Sheets. Sheet 2.*

*N<sup>o</sup> 38,151.*

*Patented Apr. 14, 1863.*



*Fig. 2.*

*Witnesses;  
A. B. Thompson  
C. L. Jones*

*Inventor  
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by Maynard*

# UNITED STATES PATENT OFFICE.

COWPER PHIPPS COLES, OF SOUTHSEA, ENGLAND.

## IMPROVED MAST FOR NAVIGABLE VESSELS.

Specification forming part of Letters Patent No. 38,151, dated April 14, 1863.

*To all whom it may concern:*

Be it known that I, COWPER PHIPPS COLES, of Southsea, in the county of Hants, in England, a captain in the Royal British Navy, have invented Improvements in Masts for Ships; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the figures and letters marked thereon.

My invention consists in constructing masts of a central and two-side tubes of iron or steel. The tubes pass through and are keyed to the decks, the central tube being carried in a direct line, while the two side tubes extend from the central tube at their bases, and are carried up at an incline till they unite with the central tube at or near the upper part. The central tube is continued upward to form the top-mast, or a separate tube is fitted thereto. The mast becomes, as it were, self-supporting, and shrouds and other supporting-rigging are dispensed with.

In the drawings, Figure 1 is a side elevation, and Fig. 2 a back view, of a mast constructed according to my invention.

*a* is the central tube, or mast proper; and *b* are the side tubes, united to each other at their upper ends and to the central tube by means of bolts passed through flanges, or otherwise.

*c c* are strengthening-plates. The central

tube, *a*, is continued upward to form the top-mast. The tubes are keyed to the deck *d*. The central tube, *a*, is carried down to and stepped to the "kelson," while the tubes *b b* are stepped in the "bilge" of the ship, as shown at *e e*, or they may be cut short and secured to the lower deck, *h*.

*f f' f<sup>2</sup>* are tie-rods for uniting the tubes and for supporting a flooring, round which hammocks may be fixed, as shown at *f*, Fig. 1, to afford protection to riflemen stationed on the flooring.

*g g g* are apertures in the tubes *a* and *b b*, through which ropes or chains for working the sails, which I prefer to be fitted with Cunningham's patent reefing apparatus, may be carried to the lower deck, *h*, in order that the men working the sails need neither be sent aloft nor exposed on the upper deck, *d*. Cross-trees may be fitted at the junction of the tubes and a top for carrying a top-mast may be added instead of the tube *a* itself forming the top-mast.

I claim—

The construction of masts for vessels of tubes of steel or iron, in the manner and for the purposes substantially as set forth herein.

COWPER P. COLES.

Witnesses:

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