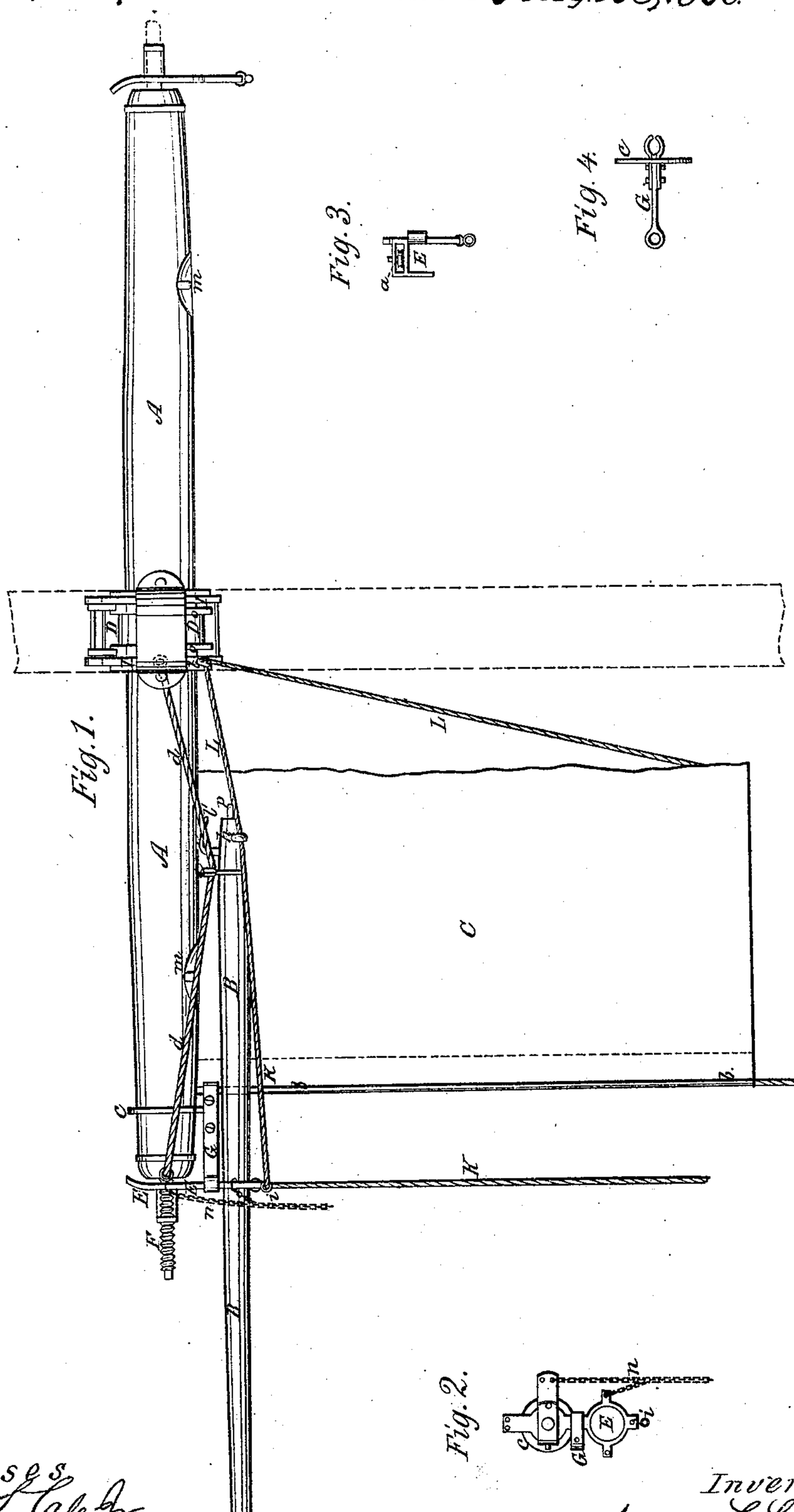
A. L. Simpson.

Mast & Spar.

No. 29,829. Patented Aug. 28, 1860.



Witnesses
F. P. Hale Jr
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UNITED STATES PATENT OFFICE.

ANDREW L. SIMPSON, OF DURHAM, NEW HAMPSHIRE.

WORKING SHIPS' SAILS.

Specification of Letters Patent No. 29,829, dated August 28, 1860.

To all whom it may concern:

Be it known that I, ANDREW L. SIMPSON, of Durham, in the county of Strafford and State of New Hampshire, have invented a new and useful Improvement in Navigable Vessels; and I do hereby declare the same to be fully set forth and described in the following specification and the accompanying drawings, of which—

Figure 1 denotes a rolling topsail yard and its studding sail boom provided with my invention.

In the drawings, A exhibits the topsail yard of a vessel, B being one of the studding sail booms thereof, and C a portion of a topsail dependent from such topsail yard.

The topsail yard is represented as having appliances, by which when it is affixed to the mast, it (the yard) may be capable of being revolved so as to wind up and reef the topsail, and of doing this while such yard may be in the act of being lowered. These appliances are shown in part at D. It is not necessary to describe them as they form no part of my present invention and are well known and in common use.

The studding sail boom passes through a hanger E, an end view of which is shown in Fig. 2. This hanger is screwed upon a screw F, projecting from the end of the yard as shown in the drawing. Fig. 3, represents a top view of the said hanger, which is constructed so as to carry a sheave, *a*, arranged vertically on it and alongside of the screw. The top gallant sheet is to work around this sheave.

From the hanger an arm G, projects and loosely grasps the leech or leech rope *b* of the sail, the same being as shown in top view in Fig. 4. The said arm is also suspended from the yard by means of a hanger, *c*, through which the yard passes and so as to be able to revolve therein. Furthermore, the rear part of the studding sail boom is supported on a foot rope *d*, by means of an eye or runner *e*. The ends of the foot rope are affixed to the hanger E, and the annular frame I, in which the yard revolves. Two leading ropes K, L, extend in opposite directions from a staple *h*, inserted in the boom near its rear end, one of the said ropes being led, through an eye or block *i*, carried by the hanger E. The other rope passes through an eye or block *l*, supported by the frame I. Besides the above, the boom is provided with a hook *l'*, which when the boom is drawn out may be inserted in an eye or staple *m*, projecting from the yard, the said hook and staple serving as stops for sustaining the boom and holding it in position under the draft of its rearmost line. The chain *n*, applied to the hanger E, is one of the braces for supporting the yard.

By means of the ropes K, L, the studding sail boom may be either run out or taken in as occasion may require and this by persons on the ship's deck provided the ropes may be long enough to reach there or thereabouts. After the studding sail boom may have been taken in, a hook *o*, carried by the frame I, may be hooked into a staple *p*, fixed in the rear end of the boom. These devices will serve to maintain the boom in its rearmost position. While the yard is being revolved for the purpose of reefing the sail, the screw F, will cause the hanger E, to move away from the adjacent end of the yard and thereby draw on the arm G, and cause it by its action on the leech of the sail to counteract the tendency of the wind to press the sail to windward or otherwise force it out of place so as to cause it to wind improperly on the yard. As the sail widens out its depth increases, the screw should have a pitch of thread such as will enable the arm to maintain a suitable draft on the leech rope in order to cause it to wind properly on the yard.

I claim—

1. The combination and arrangement of devices applied to the yard A, and the studding sail boom, B, for the purpose of supporting such boom and enabling it to be run out and in under circumstances and in manner as described, such devices being the hanger, the foot rope, the runner, the ropes, K, L, and the stop hook and eye as hereinbefore specified.

2. The arrangement of the screw F, and the guide arm G, with respect to the boom hanger and the rolling yard A.

3. The arrangement of the top gallant sheet sheave *a*, in or on the boom hanger as specified.

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Witnesses:

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