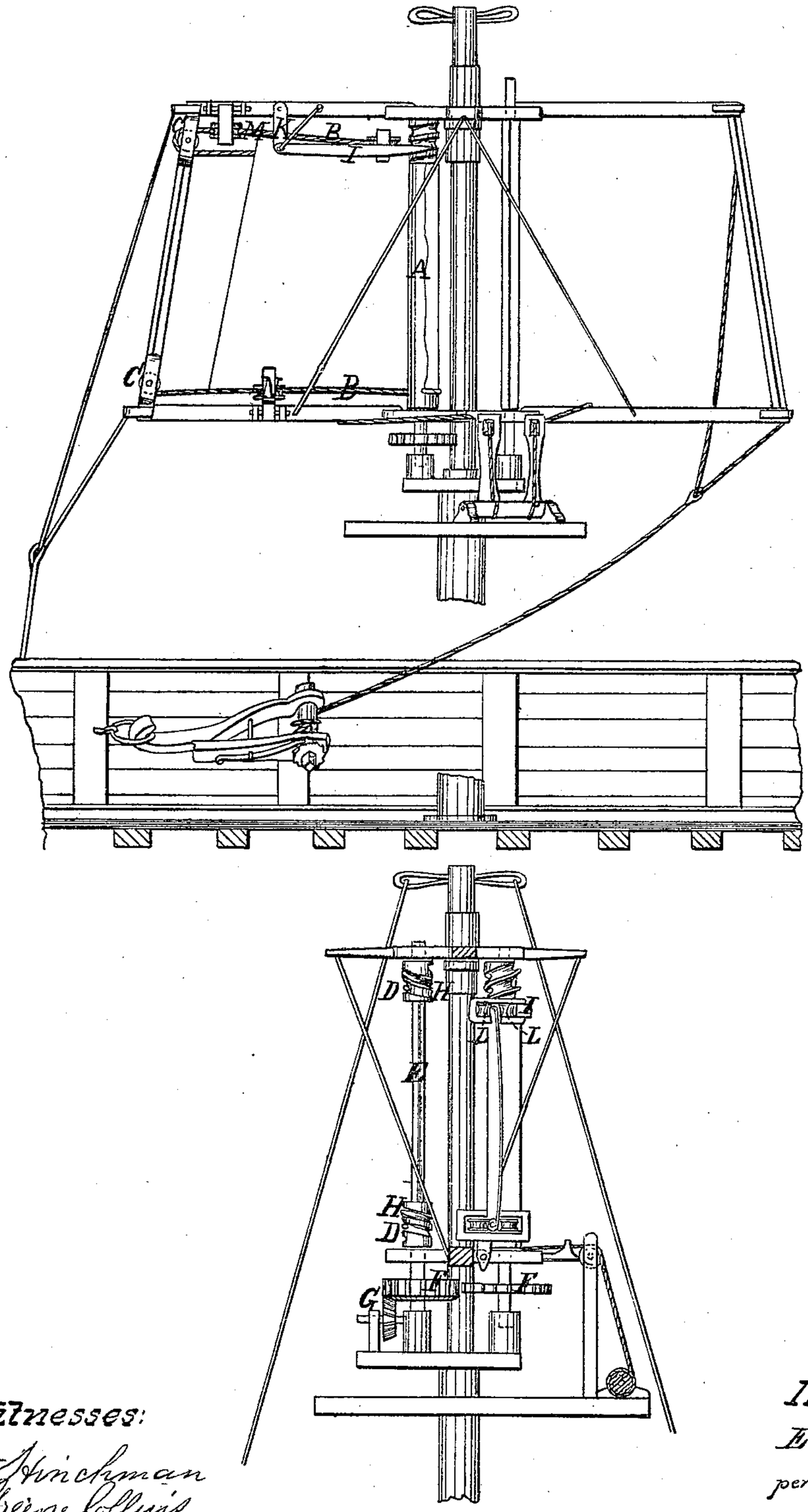
E. W. Brown

Sails & Rigging

No. 94,277. Patented Aug. 31, 1869.



Witnesses:

D. Hinchman

C. Greene Collins

Inventor:

E. W. Brown

per Munn & Co

Attorneys

United States Patent Office.

E. W. BROWN, OF CAMBRIDGE, ILLINOIS.

Letters Patent No. 94,277, *dated August* 31, 1869.

IMPROVEMENT IN FURLING AND REEFING SAILS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, E. W. BROWN, of Cambridge, in the county of Henry, and State of Illinois, have invented a new and useful Improvement in Rigging Vessels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in rigging sailing-vessels, designed to provide a more simple and reliable means for spreading and taking in the sails than any now in use.

It consists in an arrangement of vertical rollers around the mast and rigging, for spreading the sails, which are connected to the said rollers by drawing them outwardly along the spars as they are unwound from the said rollers, and taking them in by an opposite movement, all as hereinafter more fully specified.

Figure 1 represents an elevation of a mast, spars, and rigging for supporting the main sails according to my improvements.

Figure 2 represents a transverse sectional view of the same.

Similar letters of reference indicate corresponding parts.

I propose to attach the sails to vertical rollers A, rising from one spar to another, near the mast, and connect the tops and bottoms of the sails to cord B, secured to the said rollers, passing over guide-pulleys C, at the extremity of the spars, and returning to winding-drums D on shafts E, arranged parallel with the rollers, and gearing therewith by toothed wheels F, at the bottom, to cause them to move in unison.

Power may be applied to either the rollers or shafts by driving-gears G, to be operated either by hand-cranks, steam, or other power.

I prefer to make spiral grooves H in the drums or winding-parts for the cord B, except at the bottom of the roller, where it is designed that when rolling up, the size of the roll shall increase sufficiently to take in and give out a greater breadth of sail than the top.

As the outer point of the top of the sail is higher than the inner, it is necessary that the cord shall rise sufficiently to lay it smoothly on the roller. For this reason, the groove for the cord is pitched upward to correspond with the rise of the sail, and a guide, I, is provided, with the inner end bearing in the said groove, and the outer jointed to a fixed support, *k*, on the spar.

This guide supports a pair of grooved pulleys, L, between which the upper cord B passes, and is properly guided to wind on the roller.

Other pairs of grooved pulleys, M N, as many as may be required, may be provided, both for the upper and lower cords.

The shafts and rollers are arranged in supports fixed to the spars, and are moved around the mast with the spars, to adjust the sails to the wind, as required.

If found necessary, the shafts and rollers may be provided with universal joints, to allow them to yield to the springing of the mast by the wind, and work freely.

My improvements are applicable to all the sails supported on the masts, one set of apparatus being provided for each sail.

By my improved arrangements for rigging vessels, the sails may be taken in without going aloft, the upper driving-shafts being provided with the proper connections with the deck.

The masts may be taken down in time of storms, and various arrangements of devices may be provided for this purpose, as may be preferred.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The arrangement of the roller A, with reference to the mast and spars, as herein set forth and shown.

2. The combination of the cords B, the sails, rollers, guide-pulleys C, and binding-shafts, all substantially as specified.

3. The combination, with the cords B, sails and spars, of the guide-pulleys M N, when arranged as specified.

4. The combination, with the rollers A, grooved in the upper end, as described, of the guide I and guide-pulleys thereon, substantially as specified.

E. W. BROWN.

Witnesses:

OLIVER BALL,

A. H. SELLS.