No. 863,444. PATENTED AUG. 13, 1907.

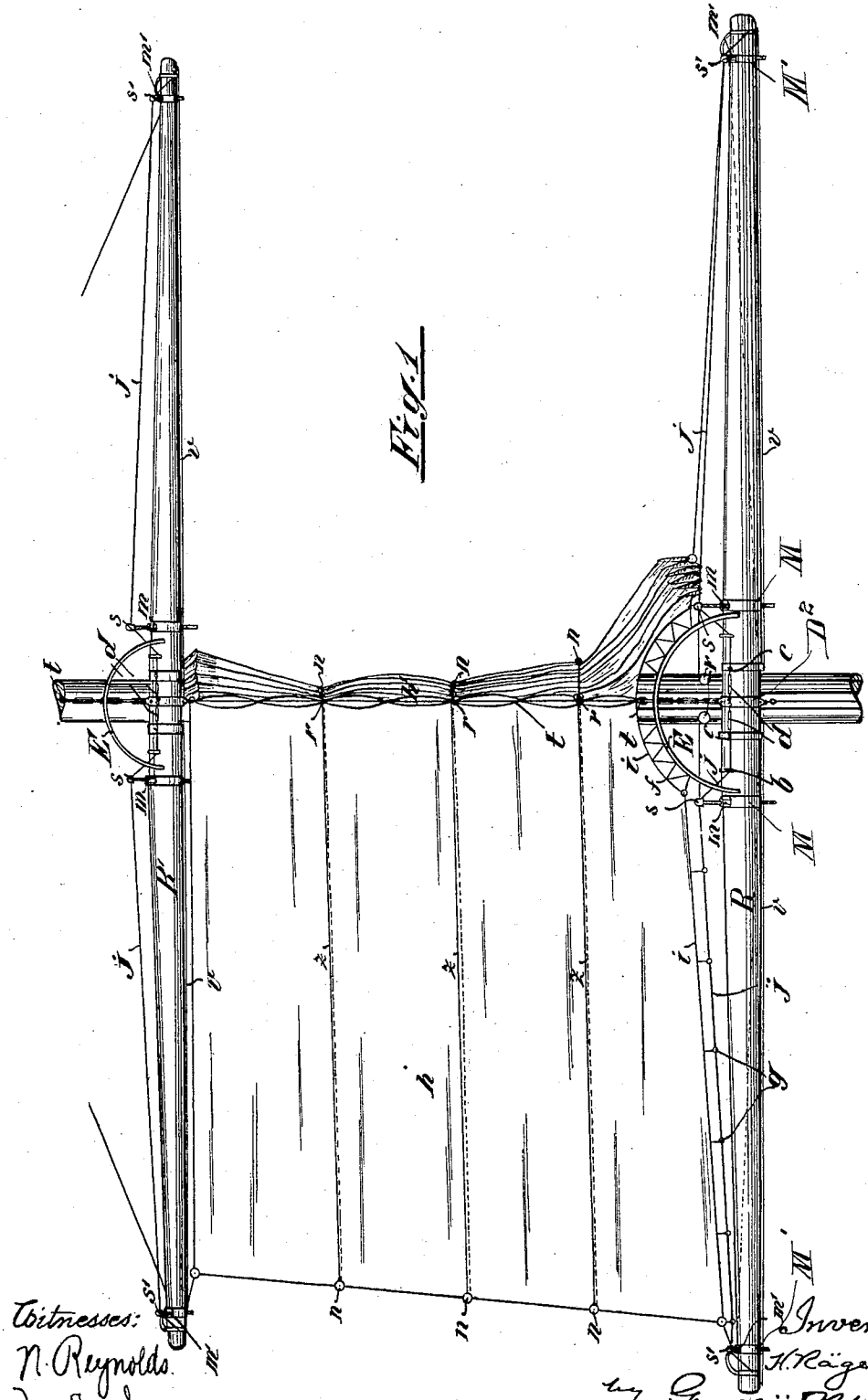
H. RÄGENER.

MEANS FOR FURLING SAILS.

APPLICATION FILED SEPT. 21, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

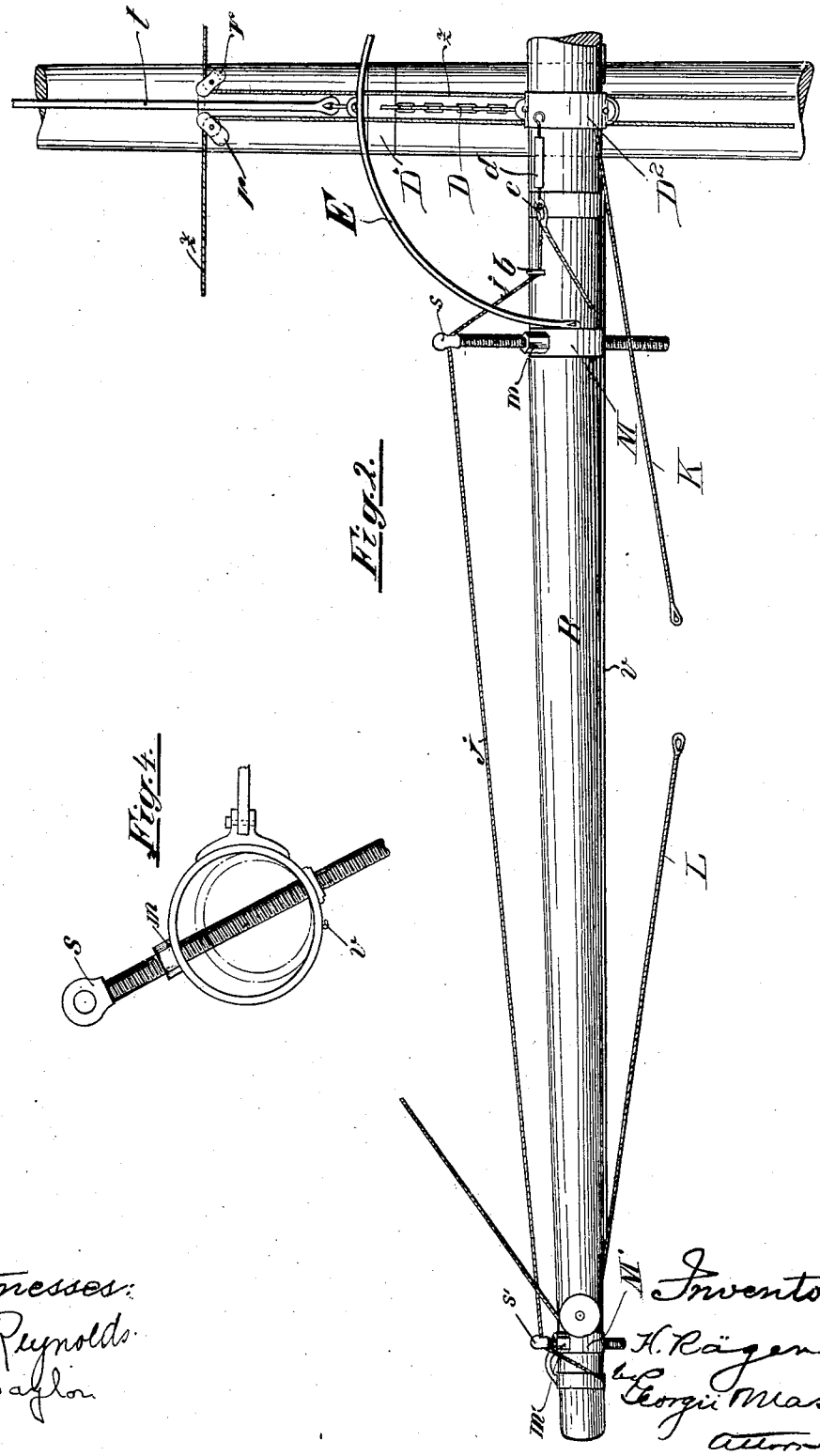


Fig. 2.

Fig. 4.

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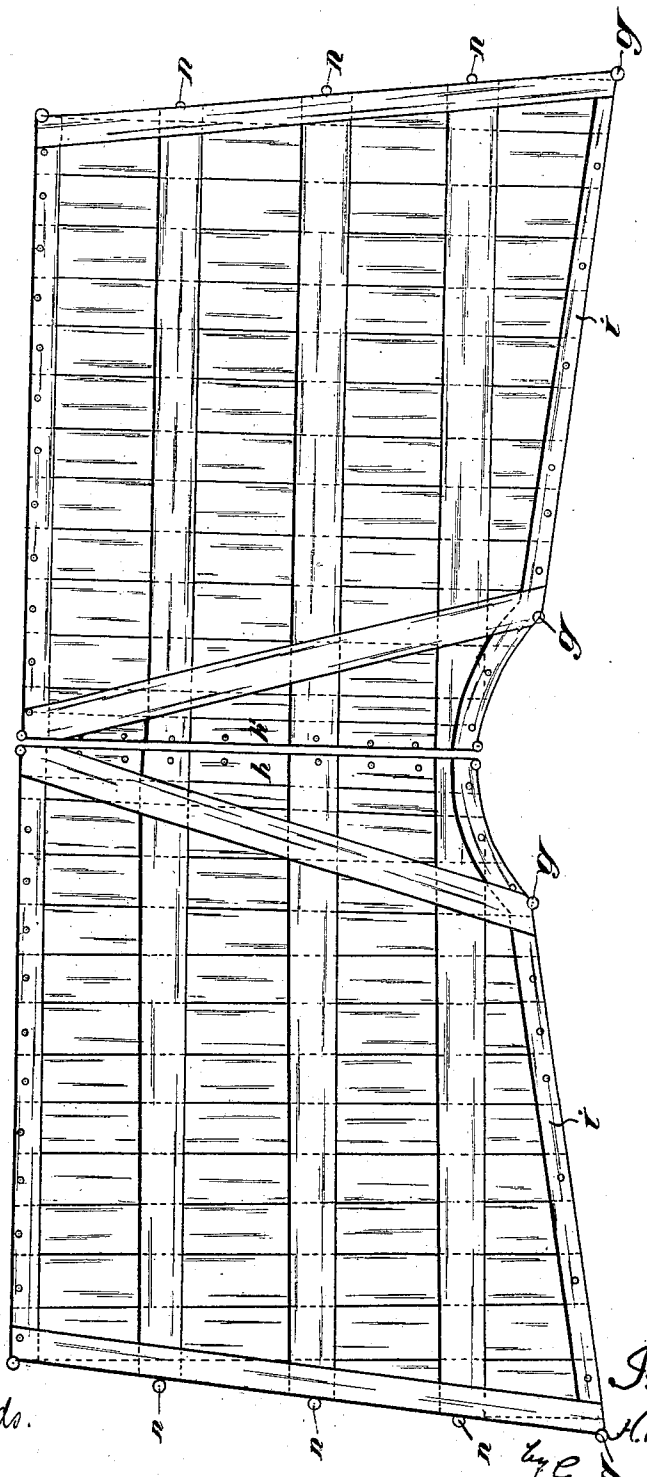
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3 SHEETS—SHEET 3.

Fig. 3.



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HEINRICH RÄGENER, OF LEHE, GERMANY.

MEANS FOR FURLING SAILS.

No. 863,444. Specification of Letters Patent. Patented Aug. 13, 1907.

Application filed September 21, 1906. Serial No. 335,658.

To all whom it may concern:

Be it known that I, HEINRICH RÄGENER, a citizen of Germany, residing at Hafenstrasse 135, Lehe, Germany, have invented certain new and useful Improvements in Means for Furling Sails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in square sail rigging for sailing vessels.

It is old to provide a square sail which is reefed or furled in vertical breadths by hauling in the outboard leeches toward the mast.

It is the object of my invention to supply a device of this kind in which provision is made for the adjustment of the standing rigging to which the foot of the sail is attached and securing the inboard clews or lower center of the sail.

With these general objects in view, my invention consists in the features and combination of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 shows two yards, arranged one above the other, between which is a sail one half reefed and the other half set. Fig. 2 a detail view on an enlarged scale showing a portion of a mast and slightly more than one half of a yard or spar provided with adjustable standing rigging embodying my invention. Fig. 3 is an elevation of a sail such as is employed by me. Fig. 4 is a detail view of an adjusting device employed in connection with my invention.

Referring to the drawings, R is a spar or yard each half of which carries two hoops M, M′, one at the outer end and one near the mast. Diametrically through each of these hoops, M, M′, and through the spar, pass threaded rods, *s*, *s′*, which are engaged by nuts *m*, *m′*, bearing on the upper surfaces of the respective hoops. The rods *s*, *s′*, have eyes at their upper ends, as shown. Each half of the yard is provided with a standing rig serving as a jack-stay and comprising a flexible stay or rope *j*, secured to the outer end of the yard, passing through the eyes of the rods *s*, *s′*, and then through an eyebolt *b* secured to the spar. The inner end of the stay *j* is provided with an eyelet or thimble *c*, which engages a hook on the end of a tightening screw or turnbuckle *d* whose other end is attached to a hoop D^2 at the center of the spar. By turning the nuts *m*, *m′*, the rods *s*, *s′*, may be raised or lowered, thereby moving the jack-stay closer to or farther away from the spar. The tightening screw *d* allows the jack-stay *j* to be taken in or let out to accommodate it to the adjustment of the rods *s*, *s′*, while maintaining a proper tension upon said jack-stay *j*. The sail is held between two yards, being connected to the upper one R′, in any suitable way which will permit the sail to be furled inward toward the mast, as for example, by providing the upper yard R′ with a rail *v* upon which the head of the sail may travel. The foot of each half of the sail is provided with blocks or travelers *g* which run on the jack-stay *j*.

In order to maintain a clear space at the mast for the passage of stays and other rigging, the central portion of the sail is cut out in the form of a curve, and is secured by a lacing *f* to a bow E whose ends are secured preferably to the inner hoops M, the center of the bow being connected to the upper spar R′ by means of a support or rod *t*. To this support *t* are secured pulley blocks *r* through which pass ropes *z* which are led outward along one face of the sail through rings *n* on the corresponding outboard leech ropes and inward to the support *t* where the fixed ends of said ropes are tied. These ropes serve as brails or auxiliary inhauls in reefing the sails.

It is preferable that the sail be made in two halves as shown in Fig. 3, the inboard leeches *h h′* of which are fastened to the upright support *t* by means of suitable lashings. Suitable inhauls and outhauls are provided as indicated at K, L, Fig. 2 in the same manner as is usual in sails reefed vertically toward the center. The yard R is supported from the mast in any suitable way, as for example, by a sling chain D secured to hoops D′, D^2 on the mast and yard respectively.

By my invention the sail may be tensioned as desired by moving the jack-stays closer to or farther from the yard, thus permitting any desired amount of bellying or flattening of the sail to be obtained, and in particular allowing an adjustment of the jack-stays to be made to compensate for variations in the sizes of new sails when bending them to the yards. The bow E not only gives a clearance for the stays passing to the mast, but also distributes the strain at the inboard clews of the sail over a larger area than with the ordinary clew rings so that the danger of the sail being blown away is materially reduced.

Having thus fully described my invention, what I claim is:—

1. The combination, with a square sail, and a lower yard for the same, of a jack-stay carried by said yard to which jack-stay the foot of the sail is connected, means for adjusting the jack-stay toward and from the yard, and means for tensioning the jack-stay.

2. The combination, with a square sail, of a lower yard, a flexible jack-stay carried by the lower yard, travelers carried by the foot of the sail and movable on said jack-stay, and means for adjusting the jack-stay to and from the lower yard.

3. The combination, with an upper yard, and a lower yard, of a square sail having its lower center cut out in a curve substantially as described, of a bow connected to the lower yard, lacings securing the sail along its said cut-out portion to the bow, and jack stays at each side of the bow and connected to the foot of the sail and to the lower yard.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HEINRICH RÄGENER.

Witnesses:
CARL HILLRICHS,
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