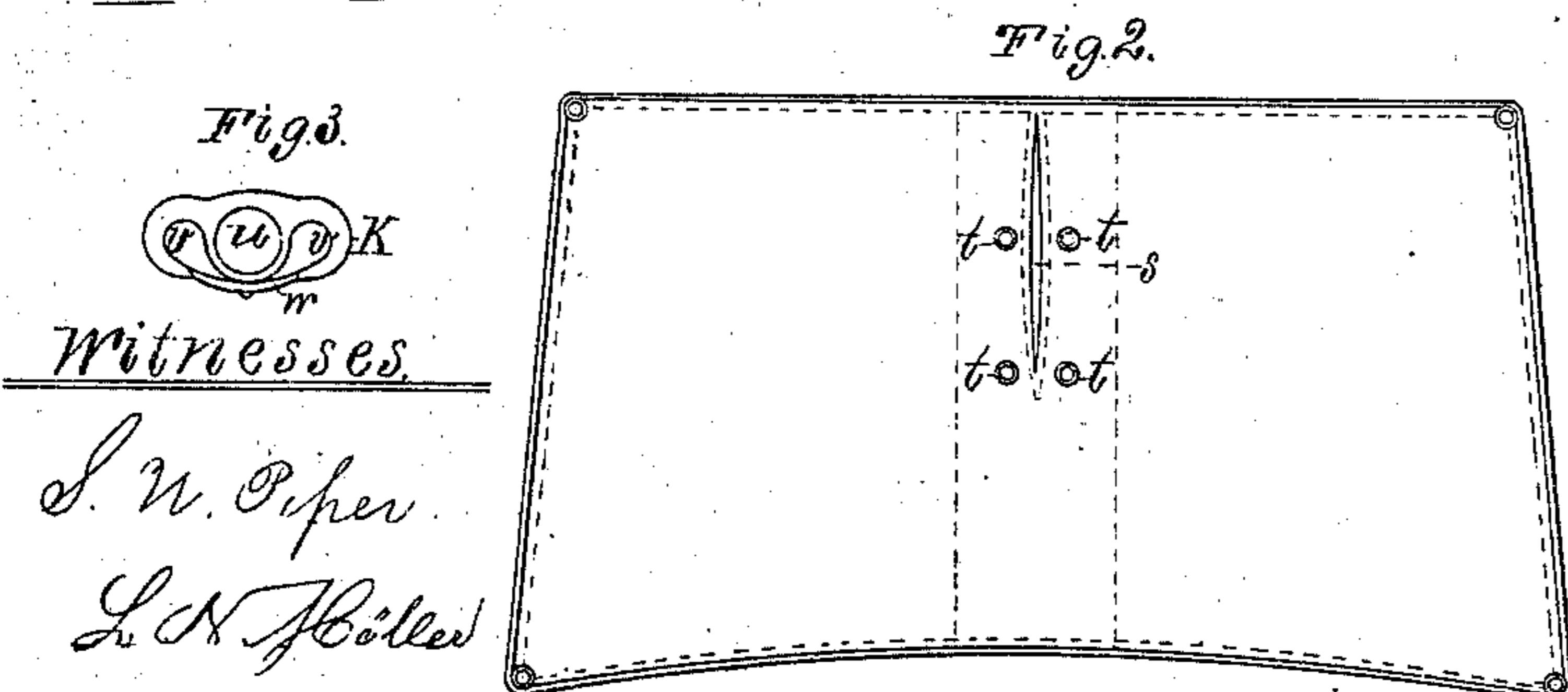
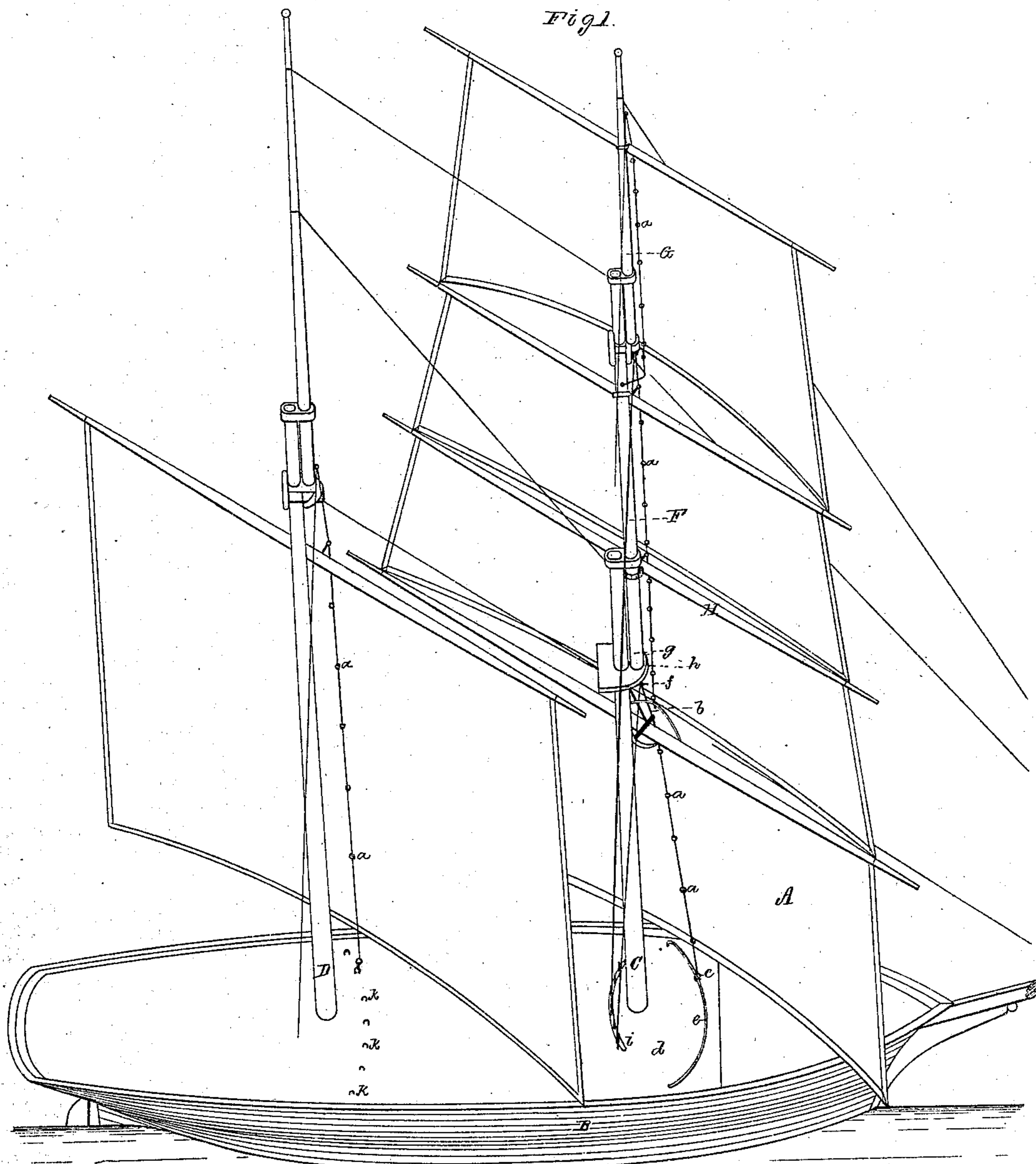


**C. FREEMAN.**  
**Stays for Ships' Sails.**

No. 143,568.

Patented Oct. 14, 1873.



Charles Freeman.

by his attorney.

*R. H. Ledy*

# UNITED STATES PATENT OFFICE.

CHARLES FREEMAN, OF BREWSTER, MASSACHUSETTS.

## IMPROVEMENT IN STAYS FOR SHIPS' SAILS.

Specification forming part of Letters Patent No. 143,568, dated October 14, 1873; application filed August 27, 1873.

*To all whom it may concern:*

Be it known that I, CHARLES FREEMAN, of Brewster, of the county of Barnstable and State of Massachusetts, have invented a new and useful Improvement in Navigable Vessels; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a perspective elevation or view of a brig having its courses and square sails provided with my invention, which consists in the combination of a stay and a system of hanks or running-eyes with the square sail and deck or mast of a vessel; also, in the combination of the stay, the system of running-eyes, a traveler, and sail, or a system of eye-bolts, with the square sail and deck and mast of a vessel; also, the sail as provided with a slit extending partially or wholly down its middle from its top, one or more removable hanks formed and applied to the slit, as hereinafter set forth. The main purpose of my invention is to support the sail along its middle, and particularly at the lower edge or bolt-rope of it, especially while either of the lower corners of the sail may be in the act of being drawn up.

In carrying out my invention, I provide the sail (which we will suppose to be the fore-course A) with a series of running-eyes, *a a a*, arranged at, or about at, equal distances apart, from the middle of the lower to that of the upper bolt-rope of it, and through such eyes I lead a rope or stay, *b*, having at its lower end a hook or traveler, *c*. To the deck *d* of the hull B, or to the mast C, I apply, athwart ships, a curved rod or rail, *e*, to which I hook or arrange the traveler so as to be capable of being slid lengthwise upon the rail. The stay I leads through an eye, *f*, attached to the top *g*, or to the cross-tree *h*, as the case may require, from whence (that is, the eye) the stay is to extend down to and be belayed to the belaying-rail *i*. Instead of the curved rod or rail arranged and supported at a short distance above and parallel to the deck, a series of eyebolts, *k k k*, may be fixed in the deck at equal distances apart, and to range athwart ships and in a curve, such being shown in the drawings as below the main-course and near and forward

of the main-mast D. The foremast is shown at C, the foretop-mast at F, and the foretop-gallant mast at G. In the drawing the top-sail is a double one, provided with the extra yard H, in which case the stay may run through eyes applied to both portions of the sail.

In squaring the yards or moving them around, the stay or its travelers will move on the rail, and with the sail, the stay and eyes serving to give support to the sail and prevent it from flapping, especially against the mast or the standing rigging, and, as a consequence, obviating the difficulties attendant on or due to such.

In order that the sail may be furled to advantage, I form it at its upper part or down its middle with a slit, *s*, as shown in Fig. 2, and provide the sails with a series of grommet-holes or eyes, *t t*, to receive one or more double-hooked hanks, K, formed in top view as shown in Fig. 3, which represents one hank having its eye *u* arranged between two hooks, *v v*, and the eye provided with a turn-button, *w*, to close upon or against the points of both hooks. This construction of the hank enables it, while on the stay, to be readily separated from the sail or applied to it, as occasion may require, the slit in the sail serving to facilitate the operation of furling the sail at its head. The hooks of the hank hold the sail together at the slit and connect the hank with the sail, the stay going through the eye of the hank.

I claim as my invention as follows, viz:

1. The combination of the stay *b* and the system of hanks or running-eyes *a*, arranged as described, with the square sail of a navigable vessel.

2. The combination of the stay *b*, the system of hanks or running-eyes *a*, the hook or traveler *c*, and the rail *e*, together and with the square sail of a vessel, all being arranged substantially in manner and for the purpose specified.

3. The sail as provided with the slit *s* and one or more double-hooked hanks, K, as described.

CHARLES FREEMAN.

Witnesses:

R. H. EDDY,  
J. R. SNOW.