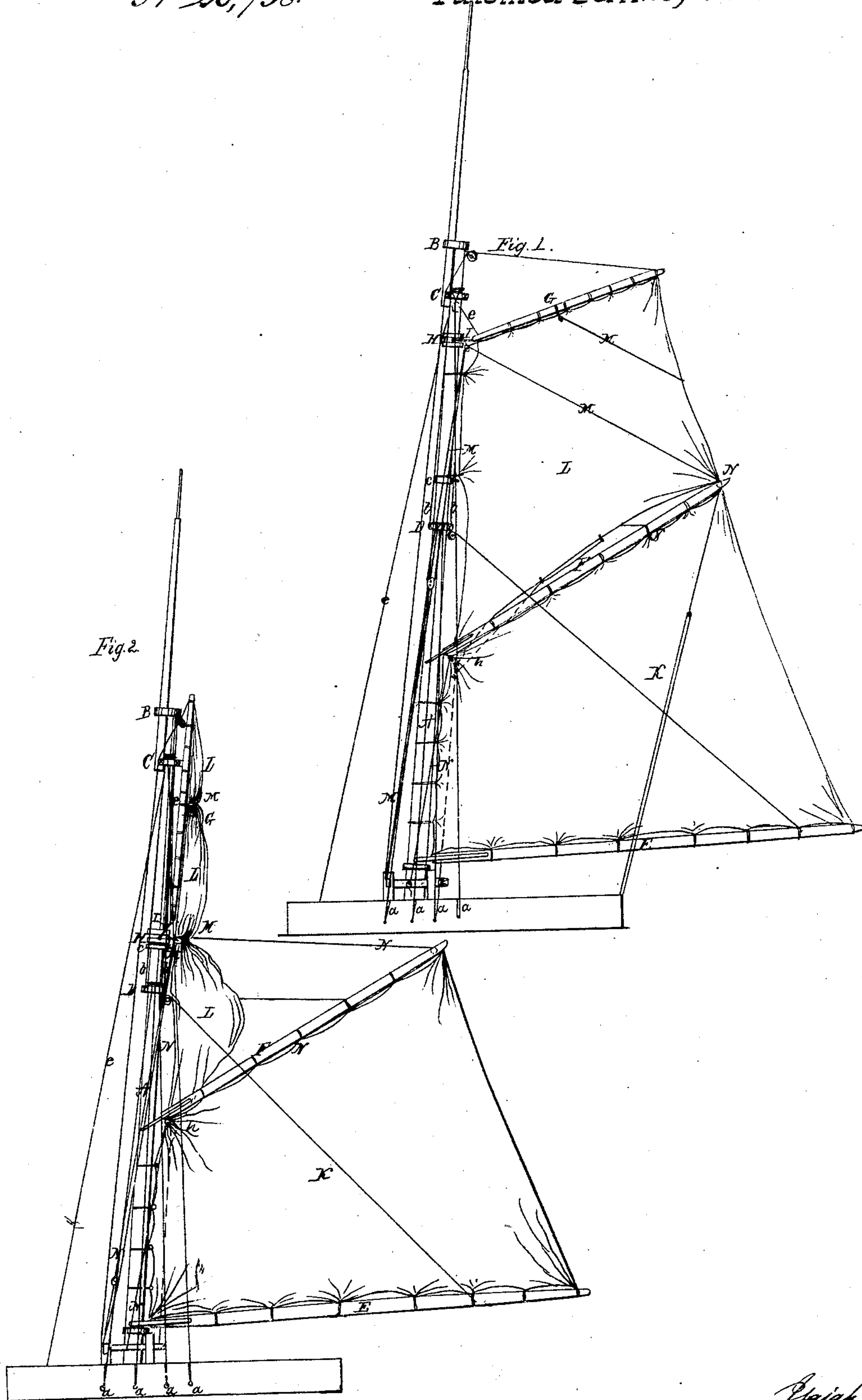


I. W. Gill.

Sails & Rigging.

N^o 20,758.

Patented Jan. 10, 1860.



Witnesses.
Sam. W. Mills.
Sam. W. Colburn.

Inventor.
Isiah W. Gill

UNITED STATES PATENT OFFICE.

ISAIAH W. GILL, OF EXETER, NEW HAMPSHIRE.

RIG FOR REEFING FORE-AND-AFT SAILS.

Specification of Letters Patent No. 26,758, dated January 10, 1860.

To all whom it may concern:

Be it known that I, ISAIAH W. GILL, of Exeter, in the county of Rockingham and State of New Hampshire, have invented an
5 Improved Rig for, or New Mode of Reefing Fore-and-Aft Sails; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

10 Figure 1, is a side elevation of a mast provided with my rig with the upper sail set or unfurled. Fig. 2, is an elevation of the same with the sail as furled or brailed up.

My invention is particularly intended for
15 large schooners, but may be applied on other descriptions of vessels. In carrying out the same, instead of one mainsail I employ two, one placed over the other, and I also apply to the mast extra cross trees.

20 In the drawings, A, exhibits the mast having at its head, a cap, B, and the usual cross trees, C. At about two fifths of the distance between these cross trees and the deck, I apply to the mast extra cross trees,
25 as shown at, D, downward as well as upward from which, shrouds or ropes, provided or not with ratlines may be made to extend, as shown at *a, a, a, a, b, b*, as shown in the drawings.

30 To that part of the mast, which is below the extra cross trees, I apply a main boom, E, and an extra boom or gaff, F, and I arrange the main gaff G, above the gaff, F, and apply it to that part of the mast which
35 is above the extra cross-trees by means of a ring or barrel, H, to slide freely on the mast, the gaff being connected to the barrel by a fork or brail I, so formed and hinged to the ring or barrel as to enable the gaff to
40 be either elevated up into parallelism with the mast as shown in Fig. 2, or raised and dropped into the position as exhibited in Fig. 1.

The mast I provide with a stop band or
45 shoulder, *c*, to arrest the descent of the said ring, and support the gaff when lowered down to its lowest position. Furthermore, to each gaff, a peak halyard and an elevating rope *e*, should be applied, those of the

lower or extra gaff being carried through 50 blocks suspended from the lower cross-trees.

To the boom, E, and the extra gaff, F, I apply a small mainsail, K, and over the gaff, F, I suspend from the gaff, G, an extra sail, L, which may have the form as shown in 55 Fig. 1. This extra sail should be provided with rings or hoops to slide on the upper part of the mast, and the sail near the mast should extend nearly or quite down to the extra gaff. Furthermore, I provide the ex- 60 tra sail not only with buntlines, M, M, for clewing it up to the upper gaff, but with a line or rope, N, attached to its lowermost outer corner and carried around a sheave placed in the extra gaff near its outer end. 65 From thence, the said rope N, is led along below the gaff to a block *h*, suspended from the heel of the gaff. From this block the rope is carried down to, or near to the deck and belayed. 70

The buntlines are to be carried around the upper sail and down toward the deck, so that when they are pulled on, or drawn on by sailors on deck, they will clue up or furl the sail, provided the rope, N, is slack. 75

To reef the upper sail, we have only to drop the upper gaff and haul it up into position as shown in Fig. 2, at the same time or subsequently, we pull on the buntlines so as to clue up the sail. In order to 80 set the sail, we should slacken the buntlines, raise the gaff and haul in the line, N.

Some of the advantages of my new rig or mode of reefing fore and aft sails in comparison to the usual application of a main- 85 sail, are as follows: It enables the vessel to lie very close to the wind. As the mainsail is divided, as it were into two, there will be less momentum in each sail when "slatting" during a light breeze and rolling 90 sea. There will be less wear and tear in taking in sail. There will be a saving in the cost of the shrouds, as they are not required to be so long and they afford more support to the mast in consequence of their 95 greater spread. The upper sail can be made of lighter canvas than the lower sail and can be taken in and reefed with much

less labor than is required to take in or reef a mainsail of the ordinary kind. So in case, the head of the mast should be carried away the efficiency of the rig would not be affected.

What I claim is—

The above described arrangement and application of the extra sail, gaff and cross-trees with respect to the mast and the main

boom, sail and gaff, and not only providing the extra sail with furling lines or devices but the main gaff with appliances by which it may be made to operate with respect to the mast all substantially as specified.

ISAIAH W. GILL.

Witnesses:

HENRY B. WELLS,
SAM M. WILCOX.