C. R. Fisher.

Gaff Connection.

No. 47,004. Patented Mar. 28, 1865.

Fig. 1.

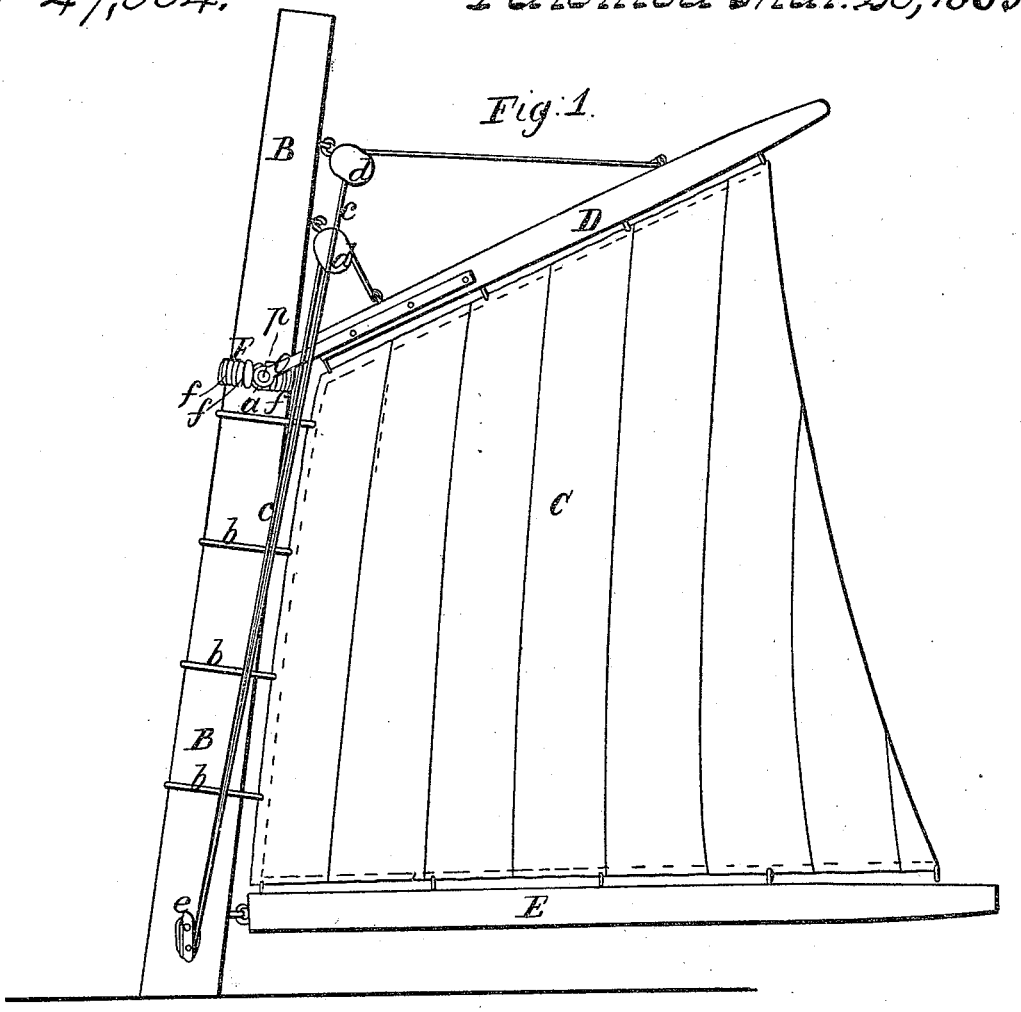
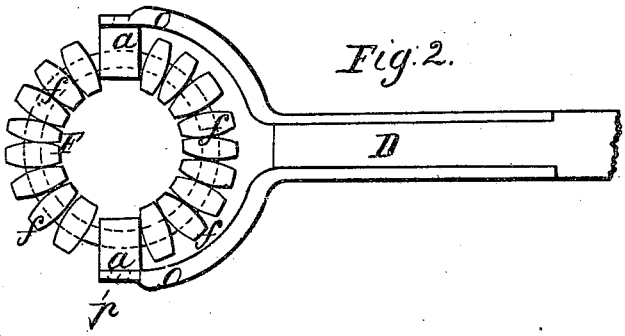


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES R. FISHER, OF CHELSEA, MASSACHUSETTS.

IMPROVED CONNECTION OF THE GAFF TO THE MASTS OF NAVIGABLE VESSELS.

Specification forming part of Letters Patent No. 47,034, dated March 28, 1865.

To all whom it may concern:

Be it known that I, CHARLES R. FISHER, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and useful or Improved Mode of Connecting a Gaff to the Mast of a Navigable Vessel; and I do hereby declare the same to be fully described in the following specification and exhibited in the accompanying drawings.

Figure 1 of such drawings is a side elevation of a fore-and-aft sail having its gaff constructed and applied to a mast in accordance with my invention. Fig. 2 is a top view of the mast band or annulus, the gaff, and their connections, as detached from the mast.

The nature of my invention consists in a peculiar mode of applying a gaff to the mast of a vessel—that is, encompassing the mast with an annulus or band—and so connecting the gaff to such band that it (the gaff) may not only be freely turned in either a horizontal or a vertical plane, but during the act of either raising or lowering the sail the said band shall be caused to maintain or nearly maintain its concentricity with the mast, whereby not only a great amount of friction, time, and physical power is saved in working the sail, but a great saving in the wear and damage both to the mast and gaff is effected.

It is a fact well known that the method heretofore generally adopted for connecting a gaff with a mast of a vessel is attended with serious objections. In the first place, during the act of either "running up" the sail or lowering it, the "saddle" or furcated end of the gaff often becomes "set" on the mast, thereby causing delay and trouble in working the sail. In the second place, besides the unequal wear of the gaff on the mast, the jerking on the halyards to loosen the gaff when it has become set on the mast causes indentations and roughness in the surface of the mast. To remedy these difficulties is the object of my invention.

In the said drawings, A may be supposed to represent the deck or a portion of the deck of a vessel; B, the mast, and C a fore and-aft sail constructed and applied to its gaff D and boom E, and connected with the mast by hoops *b*, in the ordinary manner.

In carrying out my invention, instead of applying the saddle or furcated end of the gaff directly against the surface of the mast, I affix to the inner end or head of the gaff two curved metallic arms, *o o*, formed and applied to the gaff in manner as shown in the drawings. Each of said arms, near its outer end, has a hole or eye made transversely through it, for the reception of one of two journals, *p p*, formed on the outer ends of two trunnions or projections, *a a*, which are disposed on opposite sides of the mast-band F, and at a distance of a hundred and eighty degrees from each other, as shown in Fig. 2.

By thus attaching the gaff to central points on opposite sides of the band E, instead of applying it directly to the mast, any force which may be exerted on the head of the gaff will be equably transmitted to such central parts of the band, and thus allow the band to preserve its concentricity with the mast. This band or annulus may be made of iron or other suitable material, and may be either rectangular, elliptical, or cylindrical in cross-section; or it may be partly rectangular, or elliptical, and partly cylindrical. Its inner surface should be plain or slightly convex. The said band should have a diameter somewhat larger than that of the mast which it is to encompass, so as to be capable of being slid freely on the same. In order to diminish as much as possible the friction of the said band F on the mast when the sail is being lowered, if desirable, there may be arranged on the front half of the said band a series of rollers, *f f*, &c., and for the purpose of diminishing friction and to aid in causing the band F to preserve its axis in a vertical plane or coincident, or nearly so, with the mast; another series of similar rollers, *f*, may be disposed on the inner half of the band. This application of friction-rolls, however, I do not deem essential to my invention, and may be employed or not, as may be desirable.

c c are two halyards, which are rove through two blocks, *d d*, attached to the mast in the usual manner, the said halyards having their upper ends respectively attached to the gaff, as shown in the drawings. *e* is a belaying-pin, to which the lower ends of the halyards may be fastened.

From the above it will be seen that my improved mode of connecting the gaff with the mast has several important advantages: First, it prevents "setting" or "choking" of the gaff

on the mast, and thereby enables the sail to be handled much easier, and consequently with much less force; second, it greatly lessens the unequal wear and injury to the mast incident to the old method; third, in consequence of the gaff being attached at central points on opposite sides of the said mast-band, the greater part of the gravitating force of the gaff and sail, when the halyards are "let go," passes upon the band at such central points, and thus causes the band to slip down evenly upon the mast, and with comparatively little friction.

I claim—

My improved mode of attaching a gaff to the mast of a vessel, the same being substantially in the manner and so as to operate as and for the purposes set forth.

CHARLES R. FISHER.

Witnesses:

JOHN BUCK,

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