

(No Model.)

W. F. C. NINDEMANN.

GAFF FOR FORE AND AFT VESSELS.

No. 280,945.

Patented July 10, 1883.

Fig. 1.

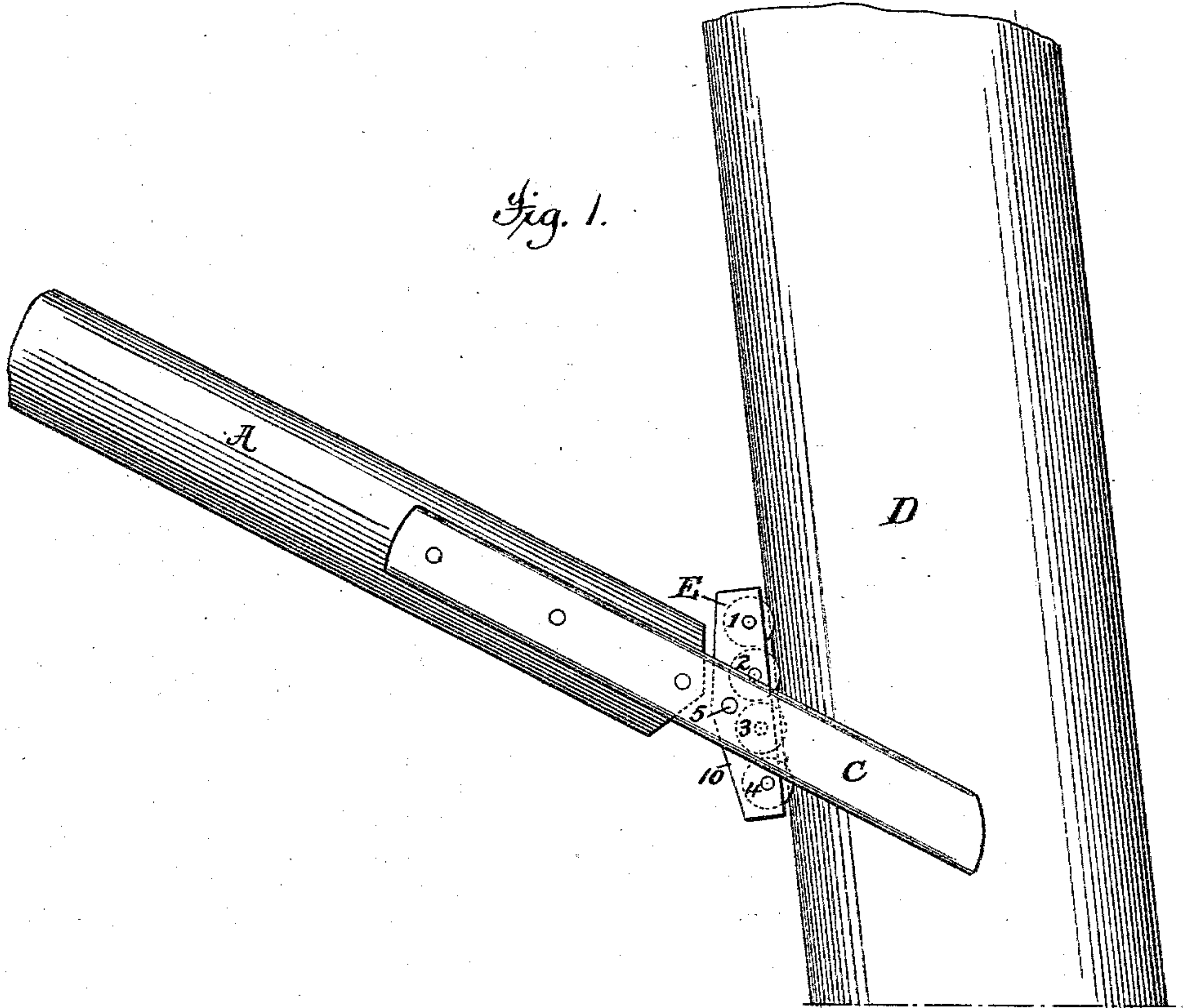


Fig. 2.

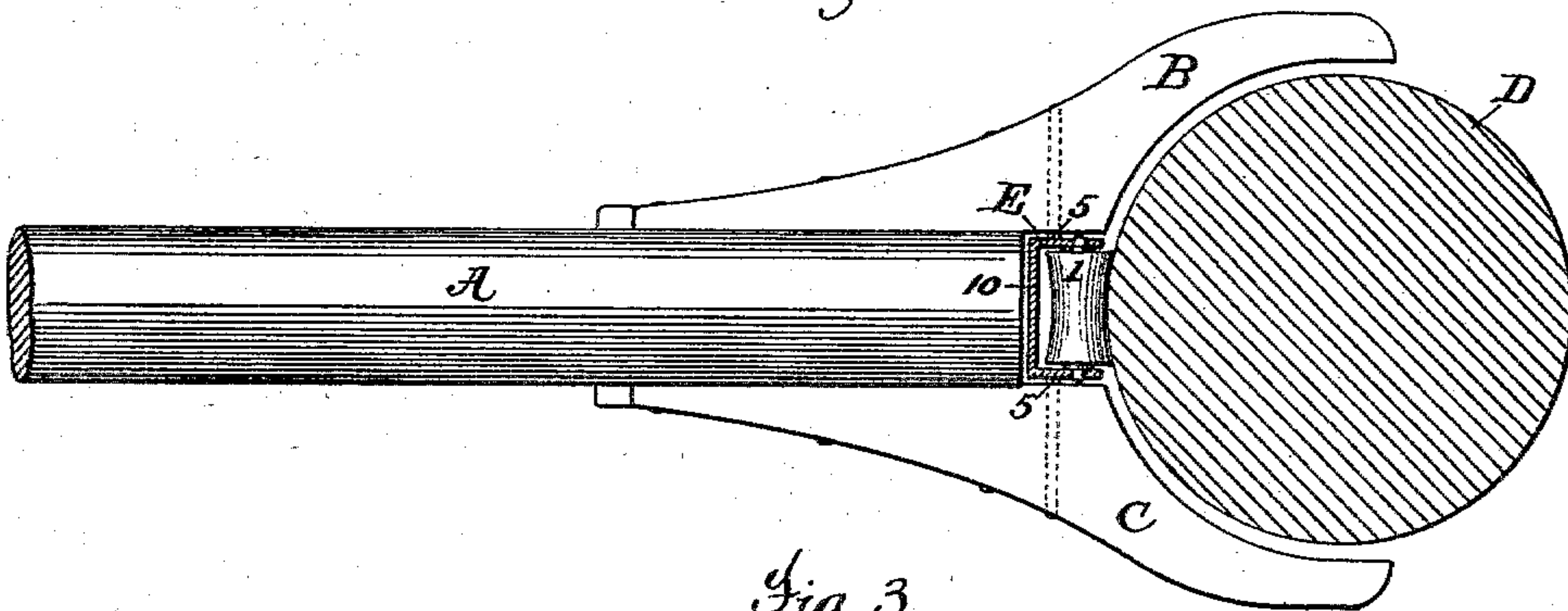
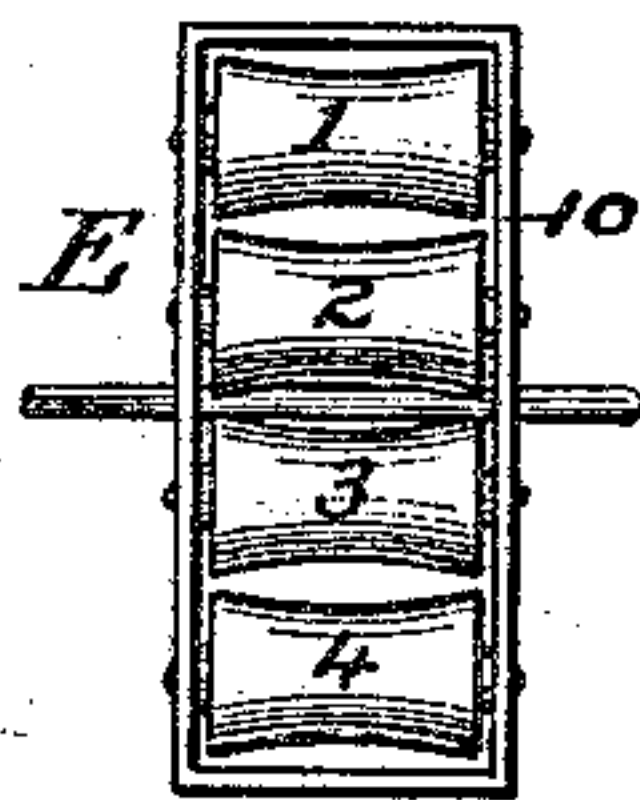


Fig. 3.



Attest:

Geo. H. Graham

A. H. Jasbera

Inventor,

W. F. C. Nindemann,

by *Munson & Philipp*

Attys.

UNITED STATES PATENT OFFICE.

WILLIAM F. C. NINDEMANN, OF NEW YORK, N. Y.

GAFF FOR FORE-AND-AFT VESSELS.

SPECIFICATION forming part of Letters Patent No. 280,945, dated July 10, 1883.

Application filed February 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. C. NINDEMANN, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Gaffs for Fore-and-Aft-Rigged Sails, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In their common construction the gaffs by which the fore-and-aft sails of vessels are raised and sustained when set have been a simple boom provided with a crescent-shaped saddle that rests against the mast and constitutes a guiding-support not only during the hoisting of the sail but while the same is moved during tacking. Great difficulty is experienced in hoisting sails so rigged, especially where they are large, and this difficult handling is, of course, rendered greater whenever the sail is wet, and therefore heavy, as is frequently the case in practice. It is the purpose of this invention to lessen these difficulties, and not only render the hoisting and handling of such rigging much easier of accomplishment, but to lessen the number of operations necessary for that purpose.

The said invention consists in providing the gaff with a rider having friction-rollers that constitutes the rest or supporting-surface in contact with the mast, and thus operates as a non-friction bearing, which enables the hoisting to be performed with a minimum expenditure of power, and hence to be accomplished by a comparatively small number of men.

For practically embodying my improvements I have herein shown one desirable construction, which will now be described, but being aware that the details thereof may be modified and other forms adopted without departing from the nature and purpose of my improvement I do not desire to limit myself to the structure herein shown.

The drawings illustrate only so much of the rigging as is necessary to an understanding of the invention, thus showing in Figure 1 an elevation of a portion of a mast and the inner end or foot of the gaff. Fig. 2 shows a plan or top view of the same, the mast being shown in section. Fig. 3 is a front elevation of the rider.

The foot of the gaff A is supplied with the two curved pieces, B C, that constitute the saddle that so far embraces the mast D as to keep the gaff in proper relation thereto both during the hoisting operation and while the gaff is swinging around upon the mast.

Thus far the parts described are of common construction, and it is to relieve the binding and frictional contact of the saddle with the mast, which in practice entails so much additional labor in the hoisting operation, that my improvements are directed. These consist in the rider E, which is made of friction-rolls, as 1 2 3 4—two or more—that are shaped with peripheries curved to suit the contour of the mast, and mounted upon horizontal axes, so as to turn freely in a carriage that is pivoted at 5 in a recess formed for it in the saddle, its pivots extending far enough into the pieces B C of the saddle to form a secure and strong bearing. This rider thus forms a supporting device that rests against the mast, and one which will move over its surface in the hoisting operation with the least possible friction, a proper and complete bearing being preserved, no matter at what angle the gaff may stand by reason of its peak being hoisted faster than its foot.

It will be observed that the area of contact of the friction-wheels of the rider is small, and in consequence of that fact and the further one that the up-and-down movements produce a rolling motion over the mast it follows that the hoisting may be easily accomplished.

In the lateral swinging of the gaff no binding will ensue, for the reason that the curved face of the friction-wheels so conforms to the surface of the mast as to permit of easy movement. In tightening up the sail by drawing upon the peak-halyards the center of movement will be the pivot 5, and hence no binding of the pieces B C of the saddle upon the mast interferes with that operation.

By the use of this improvement the greasing of the mast is avoided, and the danger of splintering and undue wear resulting from the old structure is removed.

In practice the box 10 of the rider will best be made of brass or bronze, and the rollers 1 2 3 4 of *lignum vitae*, while that side of the mast which will most commonly be traversed by

said rollers in raising and lowering the sail may be covered with brass, as may also that point at which the rider rests when the sail is raised; but these provisions against wear are
5 not essential.

Having thus described my invention, what I claim is—

1. A gaff provided at its foot with a rider having friction-wheels on horizontal axes,
10 which rider is interposed between the gaff and mast, substantially as described.

2. A gaff provided between its foot and the mast with a rider pivoted to the gaff, and having friction-wheels turning on horizontal axes,
15 substantially as described.

3. The combination, with a mast, of a gaff provided with a rider pivoted thereto, and having friction-wheels mounted upon horizontal axes, the said rider being arranged between the gaff and mast, substantially as described.
20

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM F. C. NINDEMANN.

Witnesses:

T. H. PALMER,
A. N. JASBERA.