

F. Thoits,
Friction Roll for Yard Arms.
No. 100,468. Patented Mar. 1, 1870.

Fig. 1.

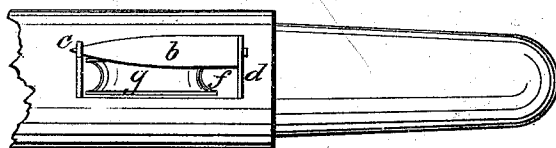
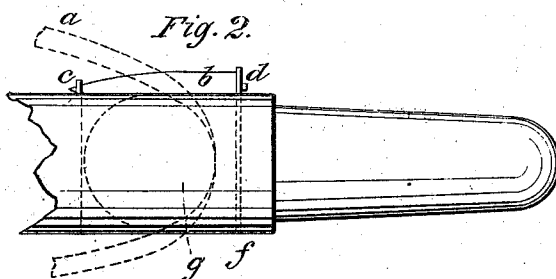


Fig. 2.



Witnesses

Henry C. Houston
Wm. Franklin Peavey

Inventor.

Frank Thoits
Per Wm. H. Clifford atty

United States Patent Office.

FRANK THOITS, OF YARMOUTH, MAINE.

Letters Patent No. 100,468, dated March 1, 1870.

IMPROVEMENT IN FRICTION-ROLLS FOR YARD-ARMS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FRANK THOITS, of Yarmouth, in the county of Cumberland, and State of Maine, have invented a new and useful improved Friction-Roll for Yard-Arms; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others to make and use my invention, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a top plan of a portion of a yard-arm with my improvement thereon.

Figure 2 is a side view of the same, with portions of the sheet, pulley, &c., indicated in dotted lines.

Great difficulty is often experienced in hauling out the sail on the yard-arm, by reason of the sheet choking or catching where it passes through the arm. In proportion as the force necessary to be applied is increased, the friction also increases.

Furthermore, from the position of the sail, the sheet sometimes draws over the side of the aperture in the arm, and so almost checks for a time the tightening of the sail.

My invention seeks both to relieve the friction, and also to so direct the sheet as to make it run more easily through the yard-arm.

The drawing is intended to illustrate the attachment of my improvement to a square top-sail yard, where the sheet *a*, passing through the yard, is then drawn in to the mast, and thence down to near the deck, where it is fastened.

b shows a conical-shaped roll, placed on the top side of the yard, on the forward side of the opening or slit in the yard, or on both sides, if desired. The small end is toward the mast, in order to keep the sheet in proper position when being drawn or tightened.

This is supported by the ear *c*, and the metal piece

d, which, as seen in fig. 2, passes down through the slit in the yard, and is riveted or bolted on the end thereof.

f is the slit in the yard.

g is a common pulley or sheave, placed in the slit, and over which the sheet passes, as illustrated.

Thus the sheet is kept from contact with anything but these easily-rotating rolls in its passage through the arm, and is moreover kept in place by the slope of the roll *b*, by which the tightening of the sail is much facilitated.

The yard is grooved to keep the sheet in position.

The invention is, as will be seen, applicable to all yards.

I do not claim the rollers as shown in the rejected application of John F. Cramer, filed November 8, 1856. This invention, in the first place, consists of two rollers, intended to be applied to the gaff of a fore-and-aft sail, and is differently applied, constructed, and used from mine.

Neither do I claim a device constructed like A. E. Lozier's Dog, filed January 18, 1866.

Neither do I claim broadly attaching a roll to yard-arms.

The peculiar tapering form of my roller *b* gives it great effectiveness, insuring the proper direction of the rope, both when taut and slack, and preventing it from becoming caught at the outer end.

What I claim as my invention, and desire to secure by Letters Patent, is—

The conical roller *b*, tapering towards the mast, when constructed and arranged as herein set forth.

FRANK THOITS.

Witnesses:

WM. HENRY CLIFFORD,
HENRY C. HOUSTON.