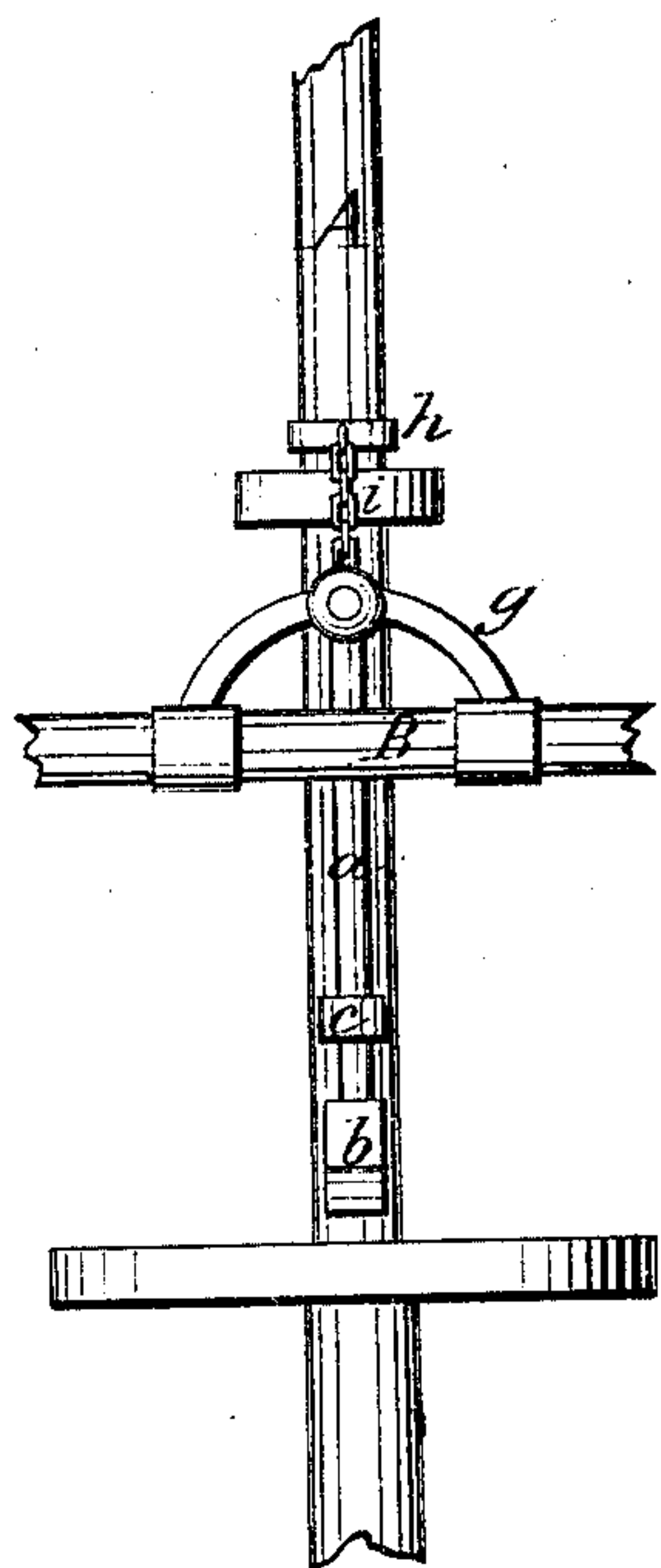
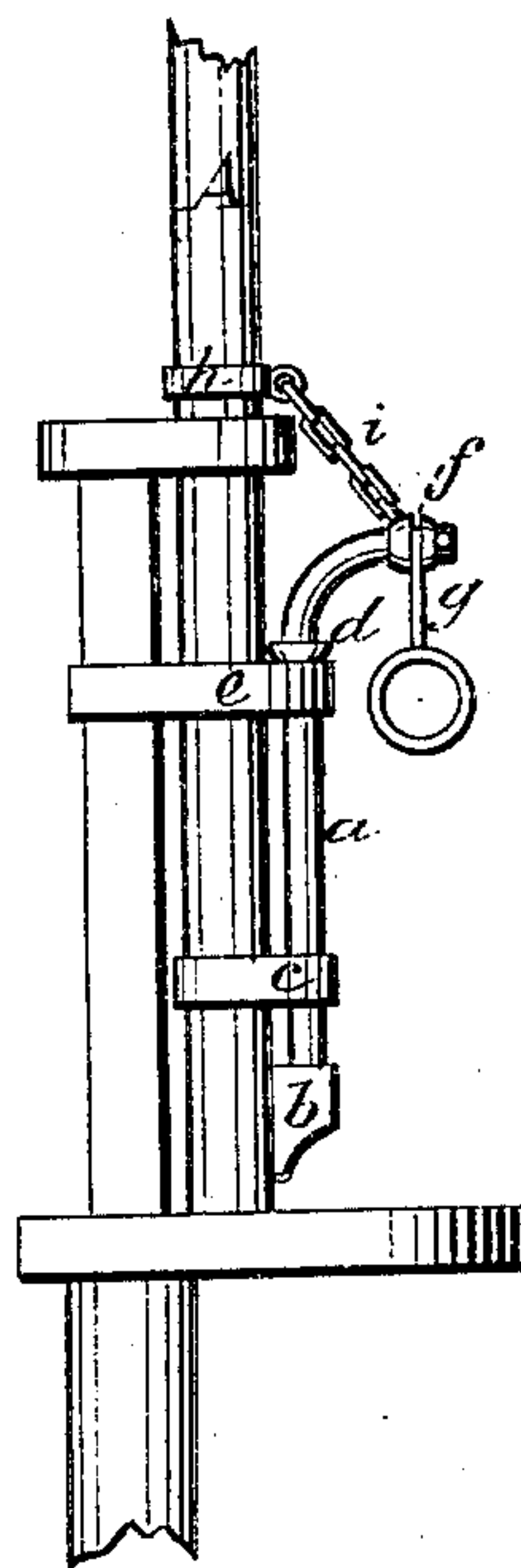


*J. B. Woodbury,*  
*Method of Hanging Top Sail Yards.*  
*Nº 94,806. Patented Sept. 14, 1869.*

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

*Henry C. Houston.*  
*Mr. Franklin Levey*

*Inventor.*

*J. B. Woodbury*  
*Per Wm Henry Clifford*  
*Atty.*

# United States Patent Office.

JOSEPH B. WOODBURY, OF PORTLAND, MAINE.

Letters Patent No. 94,806, dated September 14, 1869.

## IMPROVED METHOD OF HANGING TOP-SAIL YARDS.

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, JOSEPH B. WOODBURY, of Portland, in the county of Cumberland, and State of Maine, have invented a new and useful Method of Hanging Lower Top-Sail Yards; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of a mast, with my improvement thereon.

Figure 2 is a side elevation of the same.

Same letters show like parts.

The purpose of my invention is to provide a method of hanging lower top-sail yards, by which the friction and chafing of the yard, as it is turned into different positions, may be relieved.

My invention consists in attaching to the mast a crane or bent arm, connected with which is a device for holding the yard, the whole being so arranged as to allow of the free swinging of the yard as may be desired.

This is of great importance in the sailing and management of vessels, as the yard connected in the ordinary method chafes the mast more or less in the process of use, and swings to the desired position with difficulty.

A reference to the drawing will illustrate my invention.

A shows the top-mast as common.

*a* is the crane or bent arm, attached to the mast as follows: first, it is stepped into the socket *b*, of metal, which is bolted, or in any convenient and secure manner fastened to the mast *A*. The lower end of the crane rests in this so as to turn freely therein. Second, around the top-mast is then passed the clamp *c*, with a hole therein for the crane to pass through. This clamp, as illustrated in the drawing, encompasses only the top-mast.

Near the top of the crane, and at the foot of its

curvature, which is on the top end, is constructed the shoulder *d*. Immediately below this is placed the clamp *e*, with an aperture similar to *c*, through which passes the stock of the crane in like manner. Thus, the vertical pressure of the crane, or the weight of the yard, &c., is sustained by the socket *b*, and the clamp *e*, and shoulder *d*.

In the drawings, the clamp *e* is shown extending around both masts.

The end of the crane *a* is fitted with the groove *f*, to receive the ring or socket on the end of the bifurcated swinging arm *g*, which arm is best seen in fig. 1.

Through the rings in the ends of the bifurcations passes the yard *B*, which is intended to represent the lower top-sail yard.

In fig. 2, the rings, or one of them, is shown open. Thus suspended, the yard swings with ease and readiness, and is quite freed from liability to chafe the mast, the crane turning on its own axis, and carrying with it the yard suspended from *g*. *g* is free on the curved end of the crane *a*, and is capable of a swinging motion in a vertical plane.

Further, to support the weight of the yard *B*, &c., a ring, *a*, may be shrunk around the mast, and the chain *i* stretched therefrom to the end of the crane.

I do not propose to limit my application to the exact form of connection with the mast, to wit, socket *b*, clamps *c* and *e*. Many modes well known may be used.

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

1. The swinging crane *a*, applied, constructed, and operating as herein described.

2. The crane *a*, in combination with ring *h* and chain *i*, as herein described.

JOS. B. WOODBURY.

Witnesses:

WM. HENRY CLIFFORD,  
HENRY C. HOUSTON.