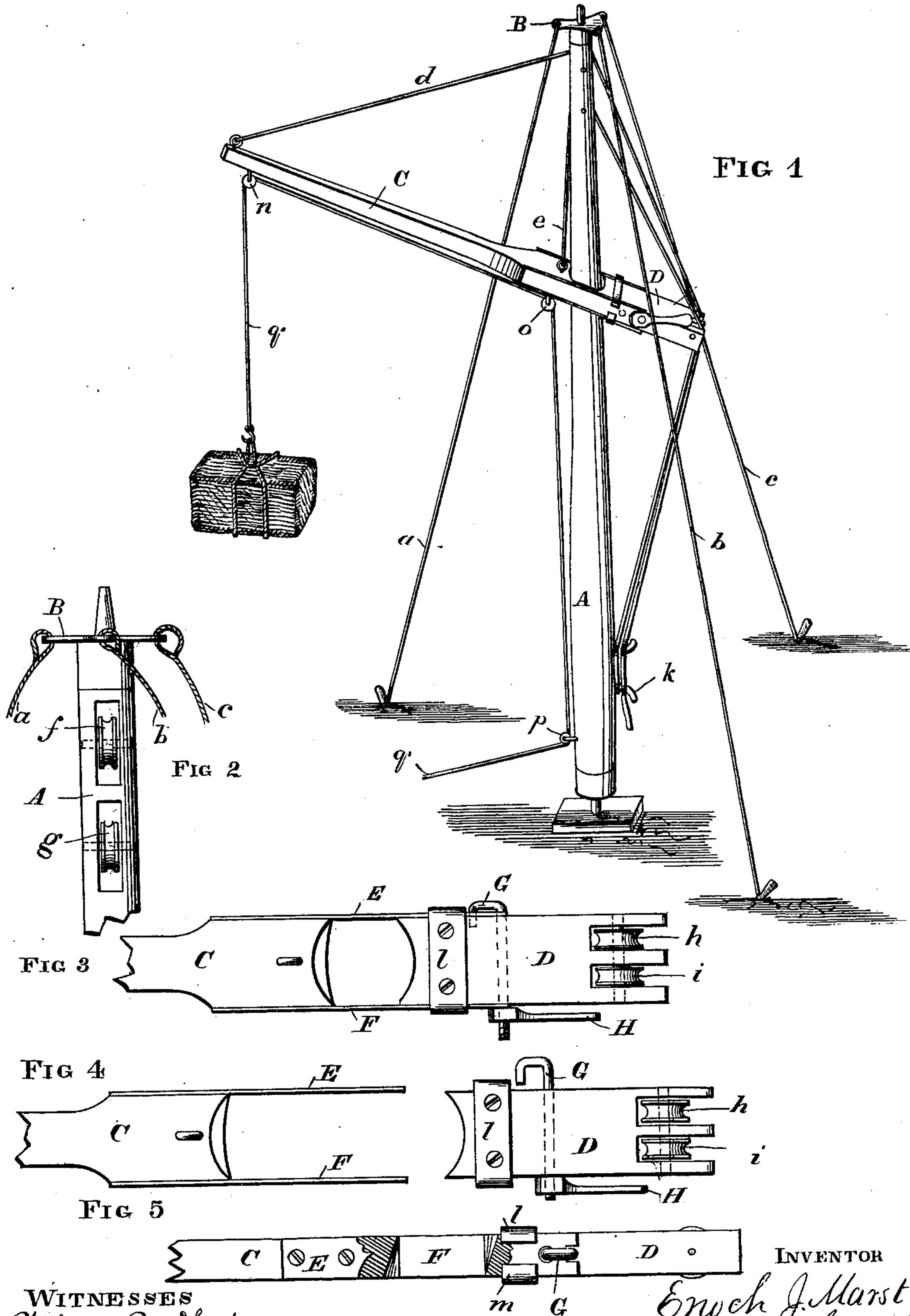


(No Model.)

E. J. MARSTERS.
Derrick.

No. 229,624.

Patented July 6, 1880.



WITNESSES
Wilmer Bradford
G. N. Thomas

INVENTOR
Enoch J. Marsters.
By C. W. M. Smith.
attorney.

UNITED STATES PATENT OFFICE.

ENOCH J. MARSTERS, OF STOCKTON, CALIFORNIA.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 229,624, dated July 6, 1880.

Application filed March 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, ENOCH J. MARSTERS, of Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Derricks, of which the following is a specification.

My invention consists in providing an extension for the boom of a derrick, so constructed that it can be readily attached to the said boom when desired for use, and as readily detached when it becomes necessary to take the derrick down or to remove the boom therefrom.

The object of my invention is to relieve the mast of the greater part, if not all, of the strain which would be thrown against it when hoisting a load.

In the drawings which are hereto annexed, and in which similar letters of reference indicate like parts, Figure 1 is a perspective view of a derrick embodying my improvements. Fig. 2 is an elevation of the top part of the mast, showing the cap and pulleys. Fig. 3 is a plan view of the boom, showing the extension or arm thereof when in position. Fig. 4 is a plan view of the boom, showing the extension or arm detached therefrom. Fig. 5 is a side view of the boom and extension, with a portion of one of the jaws broken away.

A represents the mast of a derrick having bands or ferrules around either end. In the lower end is placed a pin or pivot, which rests upon a suitable step. Upon the upper end of this mast is placed a guy-plate, B, which is secured to its position by a pin in such a manner as to permit the mast when in position to be rotated upon its axis.

To the guy-plate B is fastened one end of the guys or stay-ropes *a b c*. The ropes by which the strain is brought on the end of the arm or extension D are also used to raise and lower the boom.

To the outer end or peak of the boom I secure the topping lift-rope *d*, and to the inner end or heel of the boom I attach the heel-rope *e*. Each of these ropes passes over pulleys *f g*, secured in the top of the mast, and thence over pulleys *h i*, which are let into the outer end of the extension or arm D, and are then secured to the belaying-cleat *k*.

I secure to the boom C jaws E F, which

must be of sufficient length to extend beyond the mast and embrace the arm or extension D. The said arm is secured to the jaws by means of the hook-bolt G, which is provided with a lever-nut, H, so as to insure ease in operating. To the arm D, I secure clamps *l m*, between which the jaws E F pass.

The hook-bolt not only serves to tighten the jaws against the extension D to prevent any side movement, but also, by means of the hooked head, which enters a hole in one of the jaws, prevents the extension from being drawn out without first sliding the bolt a sufficient distance to remove the hook from the jaw. In the outer end of the jaws I cut a slot, (shown in Fig. 5,) through which the hook-bolt passes when the extension is in position, and thereby prevents any upward or downward motion of the same.

When it is desired to remove the extension, turn back the lever-nut for a distance equal to the length of the hooked portion of the bolt, and then, by moving the bolt endwise, the hook will be released from the jaw, and the extension can then be easily withdrawn from the jaws.

On the under side of the boom C are placed pulleys *n o*, over which the hoisting-rope *q* passes, and is then carried over the pulley *p*, which is secured to the foot of the mast, and the free end may then be attached to a horse.

The pulley *p* may be dispensed with, and a windlass be placed at the foot of the mast, upon the drum of which the hoisting-rope may be wound.

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

In a derrick-boom, the combination of the boom C, the arm or extension D, the jaws E F, the clamps *l m*, and hook-bolt G, provided with a lever-nut, all arranged and operating substantially in the manner and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 20th day of February, 1880.

ENOCH J. MARSTERS. [L. S.]

Witnesses:

WILLIE A. WEBSTER,
JNO. H. WEBSTER.