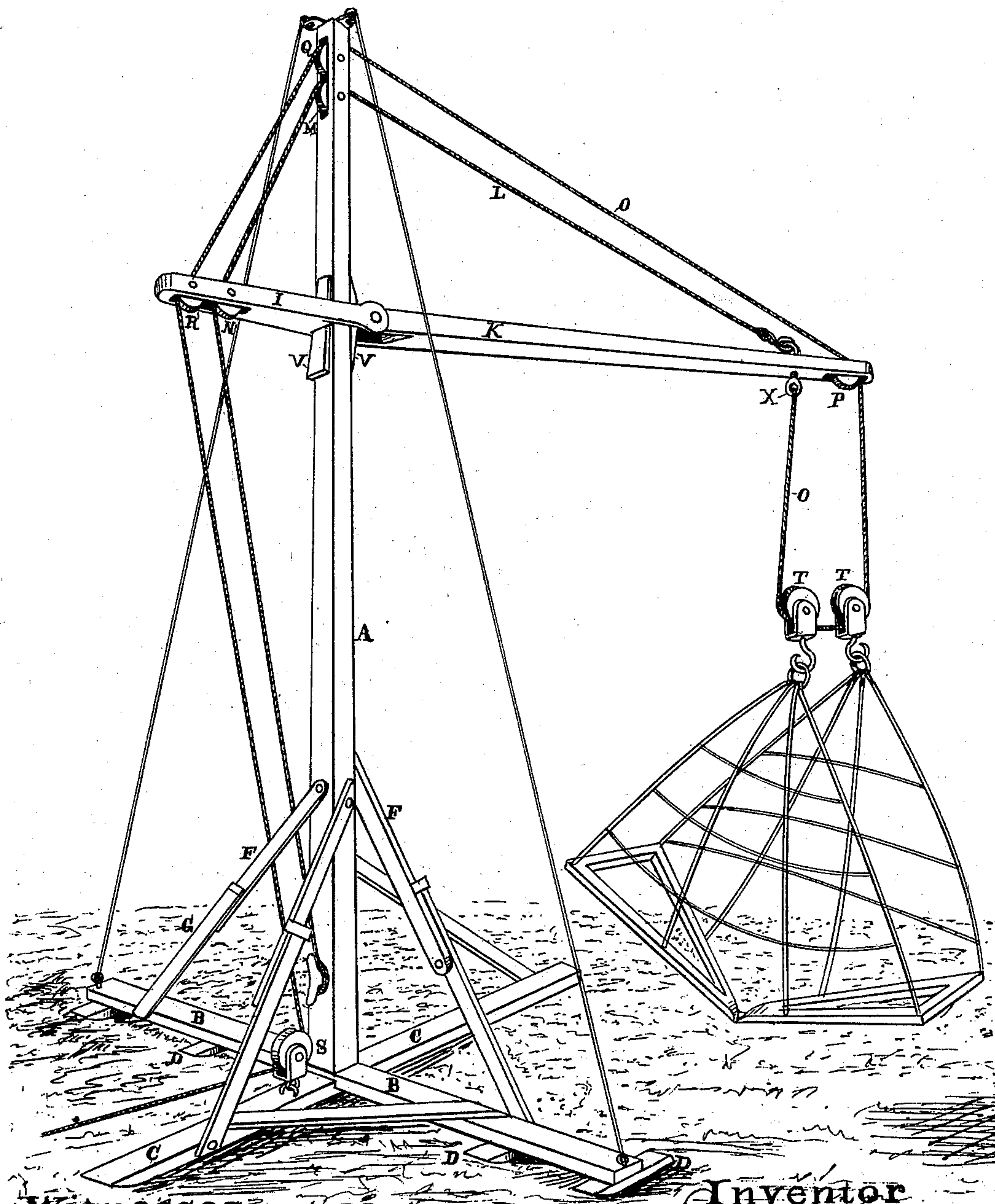


T. POWELL.  
Derrick.

No. 199,660.

Patented Jan. 29, 1878.



Witnesses

Drs. L. Boone  
Frank A. Brooks

Inventor

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# UNITED STATES PATENT OFFICE.

THOMAS POWELL, OF STOCKTON, CALIFORNIA.

## IMPROVEMENT IN DERRICKS.

Specification forming part of Letters Patent No. **199,660**, dated January 29, 1878; application filed October 9, 1877.

*To all whom it may concern:*

Be it known that I, THOMAS POWELL, of the city of Stockton, county of San Joaquin, and State of California, have invented an Improved Derrick; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates more particularly to such derricks as are used for lifting loads of grain from header-wagons, and for other hoisting purposes.

My invention consists in so applying the ropes which sustain the boom and hoist the load that they will form a truss to stiffen and strengthen the mast, so that the heavier the load the more perfectly will the truss brace the mast, thus allowing me to use a light mast, as hereinafter more fully described.

Referring to the accompanying drawings, let A represent a mast which is stepped in two bars or timbers, B C, which cross each other at right angles at its base. Shoes D D are applied to the under side of the bar B, while the forward end of the bar C is beveled to form a sled, on which the derrick can be moved, thus providing a broad base, with facilities for moving the derrick easily.

Spliced braces connect each end of the two bars with the mast. These braces are made in two parts, F G, one of which, F, is attached to the mast, while the other is attached to the end of the base-timber. Their opposite ends overlap each other midway between the mast and beam, and the overlapping ends are secured together by some suitable fastenings, so that they can be readily connected or disconnected when desired. These braces are only useful when the derrick is being moved about. When the derrick is set for work they are disconnected, and the upper parts are folded upon the mast, while the lower parts are folded upon their respective ends of the cross-bars.

I is an arm, which I secure upon one side of the mast, near its top, so as to project to a distance from it. K is a boom, which is hinged to the mast opposite the arm I. This boom I operate by a rope, L, one end of which is attached to the boom near its outer end. The rope then passes over a sheave or pulley, M, near the upper end of the mast, then down

over a sheave or pulley, N, in the outer end of the arm I, thence down to the base of the derrick, to which it is fastened. This arrangement of the rope causes it to serve as a truss to stiffen the mast, because any strain on the outer end of the boom will draw upon the cord, which will throw the weight upon the mast and arm.

The hoisting-rope O has one end secured to the eye X on the under side of the boom, near its outer end, and passes around a pulley, P, at the extremity of the boom, thence up over a pulley, Q, at the top of the mast, and down around a pulley, R, in the outer end of the arm I, outside of the pulley N, thence down around the pulley S.

Two pulley-blocks, T T, each of which has a hook on its under side, are arranged to travel in the bight of the rope O on the under side of the boom, between its attachment to the eye and the pulley P. These hooks are used for attaching the blocks to the load to be lifted, which, in a farm-derrick, will usually be a netting, such as is used for unloading a header-wagon at a single operation. In this case one of the hooks will be attached to each side of the net. This arrangement will facilitate the operation of attaching the net to the hoisting-blocks, so that it can be hoisted, as the hooks can be separated and hooked upon the net without drawing its side together. The subsequent drawing upon the rope will then close the net upon its load. By using these two traveling blocks a shorter netting can be used, which saves labor, as it is quite difficult sometimes to attach the sides of the net to one block.

The hoisting strain upon the rope O will also assist in trussing the mast in the same manner as the rope L, so that the strain is distributed on each side of the mast more equally.

The arm I and boom K, I secure in place by a wedge, V, so that, by loosening the wedge, they can be shifted up or down upon the mast, as desired.

A wire rope can be used for the rope L. By this arrangement I am able to construct a light derrick, and strengthen it so that it will lift loads that an untrussed derrick of this character and size would not sustain, and, as light-

ness is an important element where a derrick requires to be frequently moved, my improved derrick will be especially convenient and useful.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with the hoisting-rope O, having one end attached to the eye X, and passing around the pulley P, thence over the

pulleys Q R, of the locks T T, arranged to travel in its bight, substantially as and for the purpose described.

In witness whereof I have hereunto set my hand and seal.

THOMAS POWELL. [L. S.]

Witnesses:

J. B. WEBSTER,  
FRANK A. BROOKS.