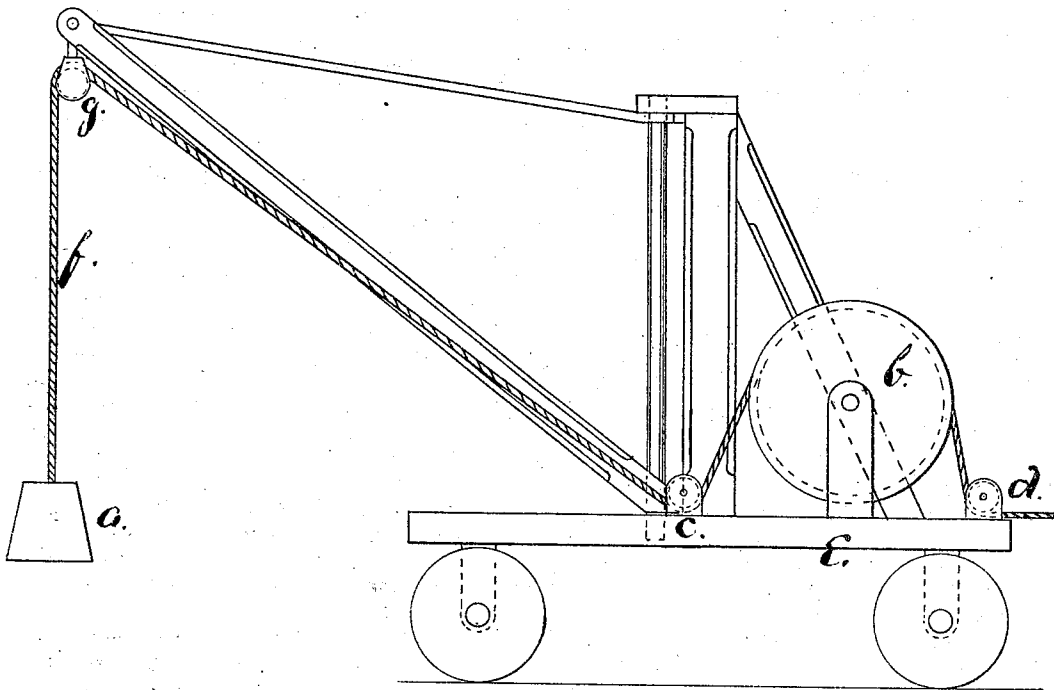


H. DONNELLY.  
Portable Derricks.

No. 152,349.

Patented June 23, 1874.



Witness  
Eud. Hewitt  
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Inventor  
Hugh Donnelly

# UNITED STATES PATENT OFFICE.

HUGH DONNELLY, OF NEWARK, NEW JERSEY, ASSIGNOR TO PATRICK BRADY, OF SAME PLACE.

## IMPROVEMENT IN PORTABLE DERRICKS.

Specification forming part of Letters Patent No. **152,349**, dated June 23, 1874; application filed April 14, 1874.

*To all whom it may concern:*

Be it known that I, HUGH DONNELLY, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Portable Derricks, of which the following is a specification:

My invention relates to an improved mode of anchoring or balancing a portable derrick. Its object is to dispense with the heavy dead-weights or guys now commonly used to prevent the derrick from tilting toward the weight that is being raised.

As these guys must be released, and the dead-weights removed, to permit a change in the position of the derrick, the objection to their use, and the value of an invention that will dispense with it, must be apparent.

A derrick embodying my invention, as represented in the drawing hereto annexed, consists of a platform, a central pulley, *b*, the rear pulley *d*, the forward pulley *c*, the hoisting-rope *f*, the jib-pulley *G*, the weight *a*, and the usual frame of a derrick, consisting of the jib, the upright, the boom, &c.

The construction of my invention is as follows: The hoisting-rope *f* runs from the bucket or other weight *a*, over a pulley, *G*, on the outer end of the boom; thence under pulley *c*; thence over the central pulley *b*; thence under the rear pulley *d*; and thence off to the hoisting power.

By this combination of pulleys, it will be found that the tendency of the derrick to tilt toward the weight *a* will be counteracted without the aid of dead-weights, guys, or other equivalents. The relative positions of the

three pulleys depend on the height of the derrick and the bulk to be raised, and cannot be specified further than by stating that the pulley *b* must always be located between the two end pulleys *c* and *d* when the latter are used, and that increasing the distance between the upright and the central pulley *b* will increase the power to overcome the tendency of the derrick to tilt toward the weight.

The hoisting-rope should generally pass under the two end pulleys, and over the central one. Manifestly, however, many variations may be made from the specific mode of construction herein represented, such, for instance, as locating the pulley *b* in the upright at a sufficient height to dispense with the rear pulley *d*, or locating the pulley *c* within the upright, or dispensing with the pulley *c* under the present construction. All such modifications I claim generally as within the principle of my invention, which consists in using the pressure caused by the strain upon the hoisting-rope as a means of balancing the derrick.

I specially claim—

1. In a portable derrick or similar hoisting-machine, the wheel *b*, placed between the pulleys *c* and *d*, substantially as described, and for the purposes set forth.

2. In combination with the frame and platform of a portable derrick, the wheel *b*, pulleys *c*, *d*, and *g*, and rope *f*, substantially as described, and for the purposes set forth.

HUGH DONNELLY.

Witnesses:

FRED. HEWITT,  
HORACE HARRIS.