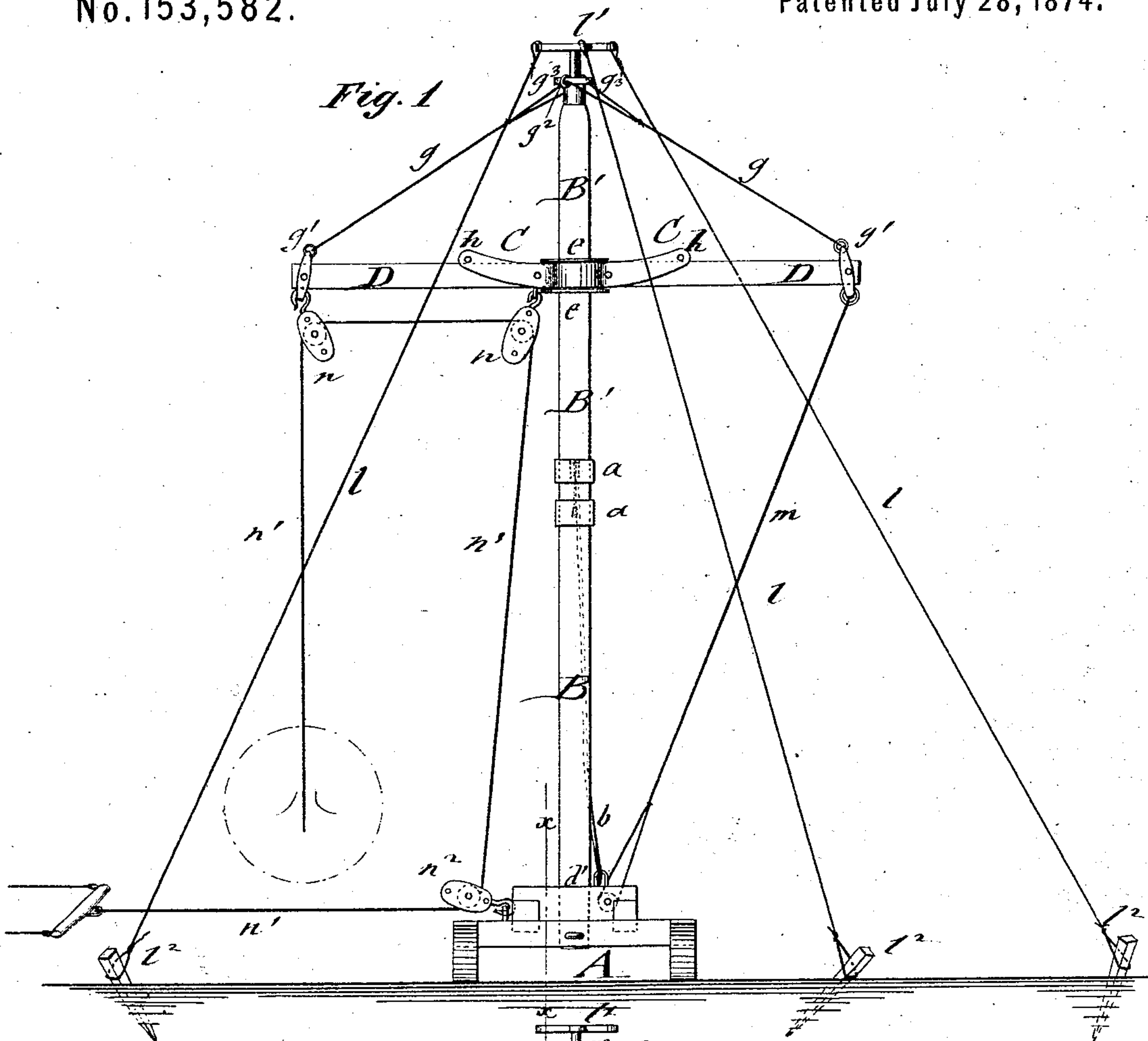


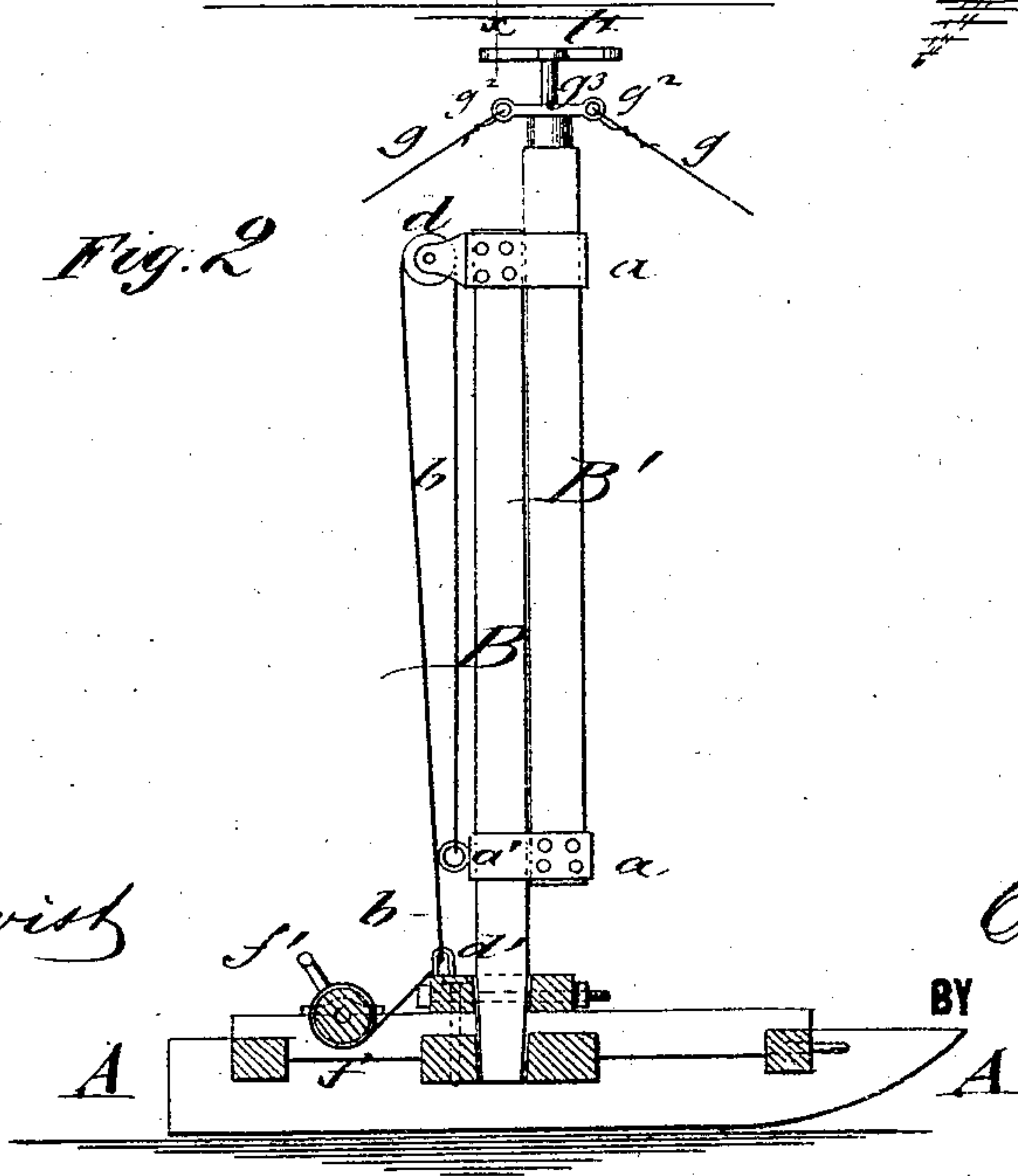
E. O. LONG.  
Derricks.

No. 153,582.

Patented July 28, 1874.



*Fig. 2*



WITNESSES:

*A. W. Almqvist*  
*C. Edgwick*

INVENTOR:

*E. O. Long*  
*Munroe*

BY

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ELIAS O. LONG, OF FARMINGTON, CALIFORNIA.

## IMPROVEMENT IN DERRICKS.

Specification forming part of Letters Patent No. **153,582**, dated July 28, 1874; application filed June 27, 1874.

*To all whom it may concern:*

Be it known that I, ELIAS O. LONG, of Farmington, in the county of San Joaquin and State of California, have invented a new and Improved Derrick, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved stacking-derrick; and Fig. 2 a vertical transverse section of the same on the line  $x x$ , Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to a stacking-derrick, which may be readily transferred from place to place in harvest-time, for raising loads in a more rapid and economical manner.

My invention consists of a base-supporting part of suitable strength, to which is firmly secured a mast or upright standard, with sliding extension-piece, having pivoted top arms and brace-ropes swiveled thereto, and suitable steadying-brace ropes connecting its top with the ground. When the derrick is placed in position for hoisting, a rope, passing over pulley-blocks of one arm and the base part, raises and lowers the load, as required, while the other is braced for relieving the side strain.

In the drawing, A represents the base part of my improved derrick, which base is constructed of longitudinal and lateral pieces, of suitable strength for firmly socketing and supporting the upright mast or standard B, to be drawn from place to place, as required, either on runners, as a slide, or on wheels, as found most convenient. The mast or standard B carries, by strong guide-bands  $a$ , the sliding extension mast or standard B', which is raised and lowered by a rope,  $b$ , attached to a staple,  $b'$ , of the lower band,  $a$ , and conducted over a pulley,  $d$ , of the upper band,  $a$ , and a base pulley or staple,  $d'$ , to a windlass-roller,  $f$ , which is turned, as required, by a crank,  $f'$ . A strong swivel-frame, C, turns freely between washers  $e$ , near the top of extension-standard B', and has pivoted, at opposite sides, the arms D, which are

swung outwardly into horizontal position, simultaneously with the rising of extension-standard A, by strong wire or other ropes  $g$ , applied to staples  $g^1$  at the outer ends of the arms, and guided in staples  $g^2$  of a swivel  $g^3$ , at suitable height above the swivel-frame C. The upward motion of arms D is defined by cross-pins  $h$  of swivel-frame C, the arms D being in that position rigidly braced by ropes  $g$ . The uppermost end of extension mast or standard B' is furthermore steadied and firmly braced by ropes  $l$ , which are attached to suitable staples  $l^1$  at the top and connected to the ground by strong stakes  $l^2$ . The end of one arm D is braced by a rope,  $m$ , which is fastened to a point near the base of the main standard A, to relieve side strain thereon, the opposite arm D being provided with pulley-blocks  $n$  at the outer and inner ends for guiding the hoisting-rope  $n^1$ , to the outer end of which the load is attached in the usual manner, while the other end passes over a pulley,  $n^2$ , of the base to the horse for raising or lowering the load.

For the purpose of transferring the derrick, the extension-standard is lowered down alongside of the mainmast, which causes also the swinging down of the pivoted arms sidewise of the same, the top brace-ropes are then released with their stakes and suitably wound up, and the derrick may then be drawn away to be placed into position at any other point, as desired.

For storing the derrick entirely out of the way, the standards may be detached from the base part and bundled up thereon, forming thus a very convenient movable derrick, of cheap construction, for harvesting and other suitable purposes.

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

1. The improved movable derrick for stacking and other purposes, constructed of supporting base part A, mainmast or standard B, socketed thereto, sliding extension-standard B', with swivel-frame C, and pivoted arms



D, the whole being placed in position and braced by suitable steadying-ropes for hoisting or lowering the load, substantially in the manner and for the purpose set forth.

2. The combination of the pivoted arms D, being braced by swiveled ropes *g* from the top of the extension-standard, with a hoisting mechanism applied to the base, and connected with the sliding standard B' for

the purpose of swinging the arms D into braced horizontal position simultaneously with the raising of the extension-standard, substantially as shown and described.

ELIAS OSCAR LONG.

Witnesses:

J. J. CROSS,  
A. R. SMITH.