(No Model.)

2 Sheets—Sheet 1.

J. T. SCULLY.

DERRICK.

No. 275,421. Patented Apr. 10, 1883.

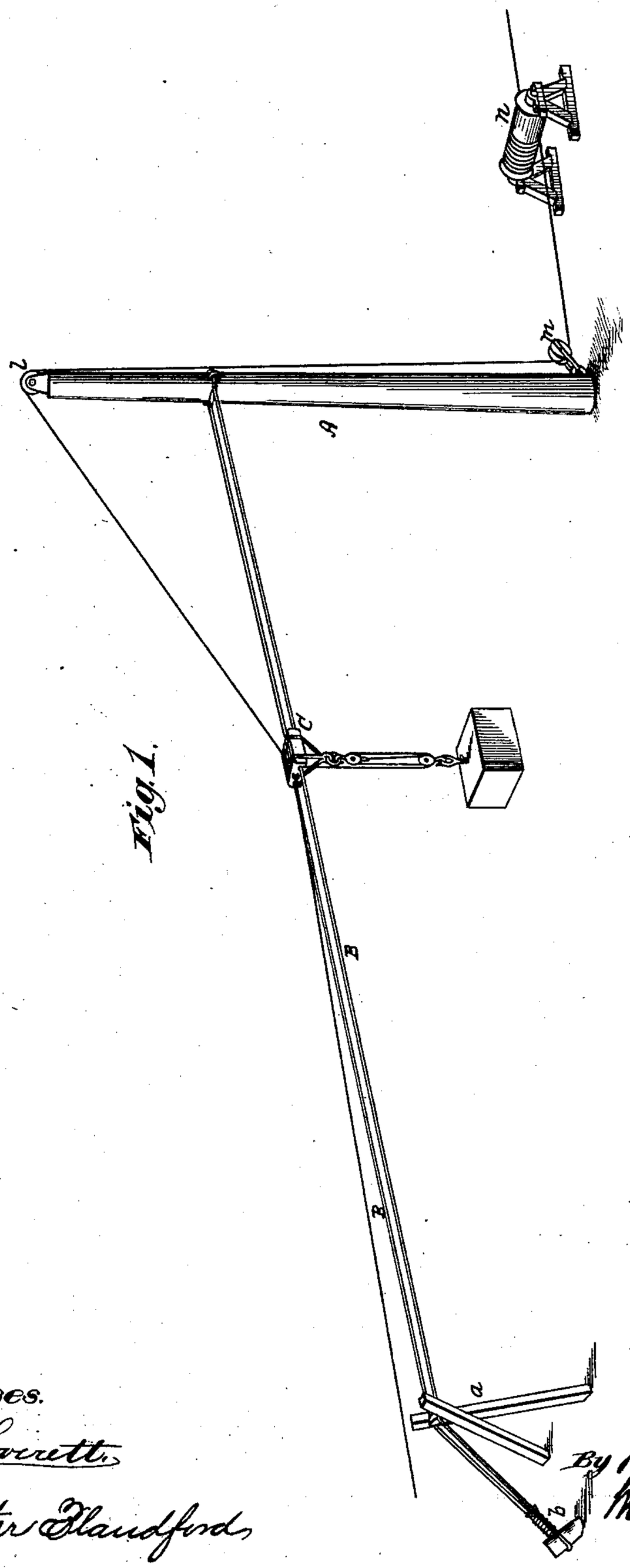

Fig. 1.

Witnesses.
Robert Everett.
J. Walter Blandford.

Inventor:
John T. Scully
By Marullus Bailey
his attorney

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

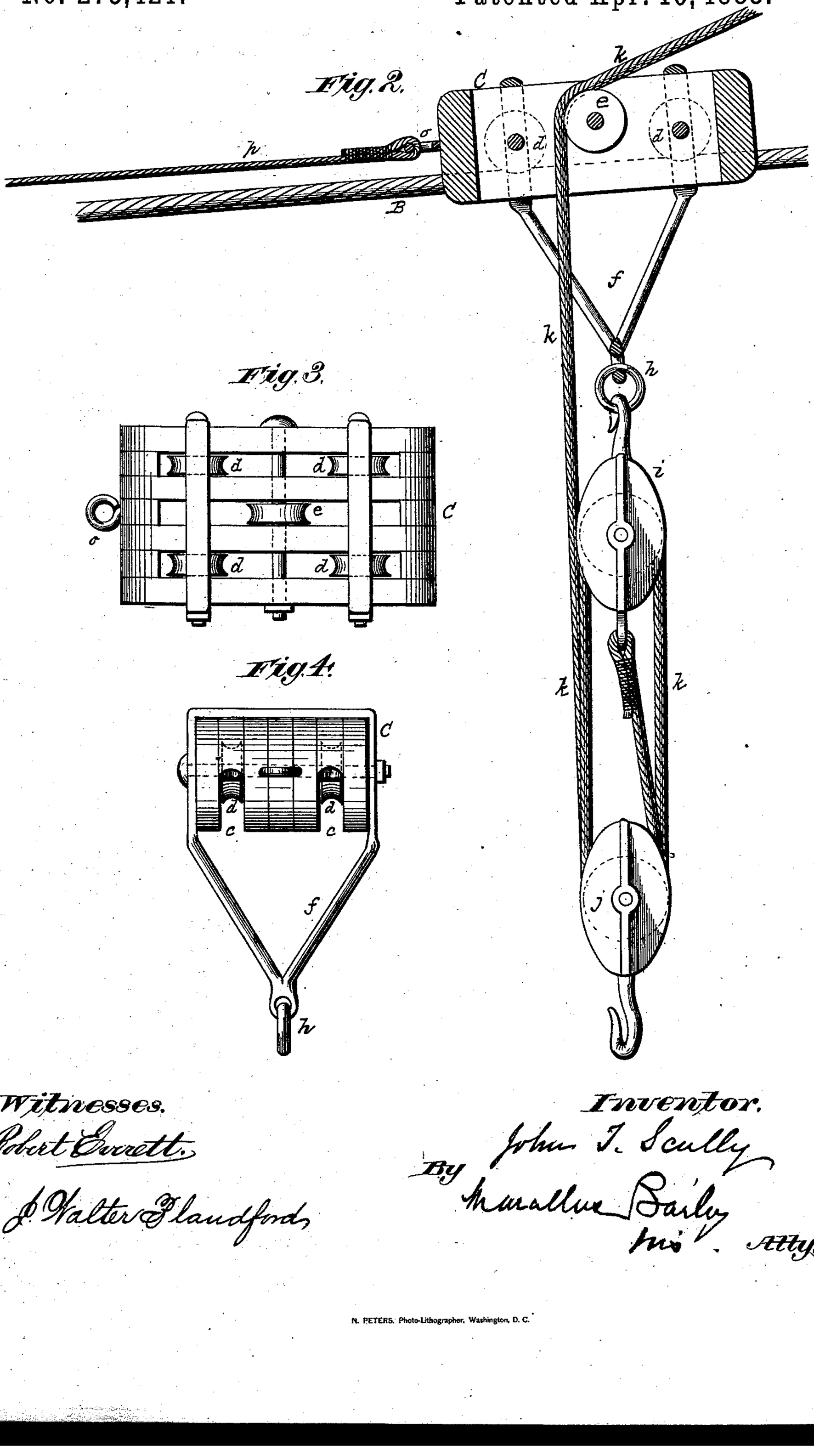

Fig. 3.

Fig. 4.

Witnesses.

Robert Everett.

L. Walter Plandford,

Inventor.

John T. Scully

By Marallus Bailey

his Atty.

UNITED STATES PATENT OFFICE.

JOHN T. SCULLY, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO JAMES SCULLY, OF GROTON, CONNECTICUT.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 275,421, dated April 10, 1883.

Application filed March 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. SCULLY, of Cambridge, in the State of Massachusetts, have invented certain new and useful Improvements in Derricks, of which the following is a specification.

The contrivance which I have devised is intended to take the place of the ordinary boom in a derrick. The length of the ordinary boom is necessarily limited, not often exceeding twenty-five or thirty feet; and it is frequently inconvenient and troublesome, if not impracticable, to reach with it, or with the tackle carried by it, objects to be hoisted or lifted without moving the derrick bodily and setting it in place nearer to those objects. By my contrivance I am enabled to span or reach out over a very considerable extent of ground and to bring within convenient range of the hoisting devices objects which could not under like conditions be reached by the ordinary derrick. I combine with a mast ropes, (preferably wire ropes,) which at one end are attached to the mast and extend out therefrom any convenient distance—say one hundred feet or more—and are stretched taut and anchored at their outer ends. These ropes, which are parallel to one another, and extend out above the ground where the work is to be done, form in effect an inclined track upon which can travel a carriage-block that carries the hoisting blocks and tackle. The carriage-block has wheels, so that it can run readily on its track; and it is also provided with a pulley, over which passes from the blocks below the hoisting-rope, said rope extending thence up to the top of the mast, where it passes over a pulley, and thence extends down under and around a pulley at the foot of the mast, and thence to the usual hoisting-drum. By this arrangement of the hoisting-rope a considerable amount of the strain is taken off from the track-ropes, and the latter are consequently not so liable to sag.

The nature of my improvement and the manner in which the same is or may be carried into effect can, however, best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved derrick or hoisting apparatus. Fig. 2 is a longitudinal vertical central section on enlarged scale of the carriage-block, representing also the track-ropes and the blocks and tackle which are carried by it. Fig. 3 is a plan of the carriage-block. Fig. 4 is an end elevation of the same.

A represents the mast, which, like the mast of an ordinary derrick, is to be supported and steadied by suitable guys. At a point some distance below its top are attached the two wire track-ropes B, which extend out over the ground to be spanned, and, passing over a supporting-trestle, *a*, have their ends securely anchored, as at *b*. The ropes are drawn taut and form an inclined track upon which the carriage-block C can run. This block has longitudinal grooves *c* in its under face to receive the track-ropes, and in these grooves are mounted wheels *d*, which rest upon the ropes, as indicated by dotted lines in Fig. 2. Centrally mounted in the block is the pulley *e*, over which the hoisting-rope passes. A metal frame-work, *f*, on the under side of the block carries an eye or ring, *h*, into which is hooked the upper hoisting sheave, *i*. This sheave and the lower double sheave, *j*, are of the usual construction and arrangement, and are connected together by the hoisting-rope *k* in the usual way. This rope, after leaving the blocks, is carried up and over the central pulley, *e*, in the carriage-block, and thence extends up over a pulley, *l*, at the top of the mast, and down under a pulley, *m*, at the bottom of the mast, thence passing to the hoisting-drum *n*. On the front of the carriage-block is an eye, *o*, to which is connected a rope or line, *p*, by means of which the carriage can be held stationary in place on the track-ropes, against the pull in the opposite direction exerted by the hoisting-rope when it is being wound up.

Having described the construction and arrangement of the apparatus, I shall now explain its mode of operation.

The hoisting-rope is slackened and the carriage-block by gravity travels down the track-ropes until it comes to the point thereon where it will be most conveniently placed with respect to the stone or other weight to be lifted and moved. The tackle or the lower block is then, in the usual way and by the usual means, connected to the weight, and the hoisting-drum is put in rotation, so as to wind up the hoist-

ing-rope. The line *p* is held or made fast, so that it will resist any tendency of the carriage-block to travel up on the track-ropes during this operation. As soon, however, as the weight has been lifted high enough, the line *p* is loosened or cast off, and then the further winding up of the hoisting-rope will have the effect only of drawing the carriage-block, together with the weight suspended from it, up along the track-ropes, until it is brought over the spot where the weight is to be deposited. During all this time the draft is upwardly over pulleys *e* and *l*, and thus a considerable percentage of the strain is taken from the track-ropes, which consequently do not sag to any material extent. This arrangement renders it feasible to employ track-ropes of very great length, and enables me with one derrick to reach out over ground that could only be covered by at least two or three derricks of ordinary construction.

The hoisting-rope has the double function both of lifting the load and of drawing the carriage-block along on the track. It will also be noted that it is easy to reach objects which are located some considerable distance to one side or the other of the track. As soon as the hoisting-rope is put in operation to lift and move a weight or load thus placed the strain on the carriage-block will have the effect of depressing one or the other of the track-ropes, so as to give the track at the point where the carriage-block rests on it a lateral slant or tilt, which will permit the said block to face the load squarely.

In practice I detachably connect the track-ropes to the mast, so that if at any time it be desired for any purpose to use an ordinary boom the track-ropes can be loosened and dropped, and the boom can be connected to the mast, thus converting the device into an ordinary derrick.

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

1. The combination of the mast, the track-ropes, the carriage-block supported thereby and adapted to travel thereon, the blocks and tackle carried by said carriage-block and the hoisting-rope leading from said blocks up over a pulley on the carriage-block to and over a pulley at or near the upper end of the mast, and a line or retaining device by which the carriage-block can be held in position on the track-ropes against the pull exerted by the hoisting-rope during the operation of lifting the load, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the mast, of the track-ropes arranged to form a downgrade track from the mast, the carriage-block supported by and adapted to travel on said track, and the hoisting-rope leading from the hoisting-blocks up over a pulley on the carriage-block, and thence to and over a pulley on the mast at or near the top thereof, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 1st day of March, 1883.

JOHN T. SCULLY.

Witnesses:
J. WALTER BLANDFORD,
EWELL A. DICK.