

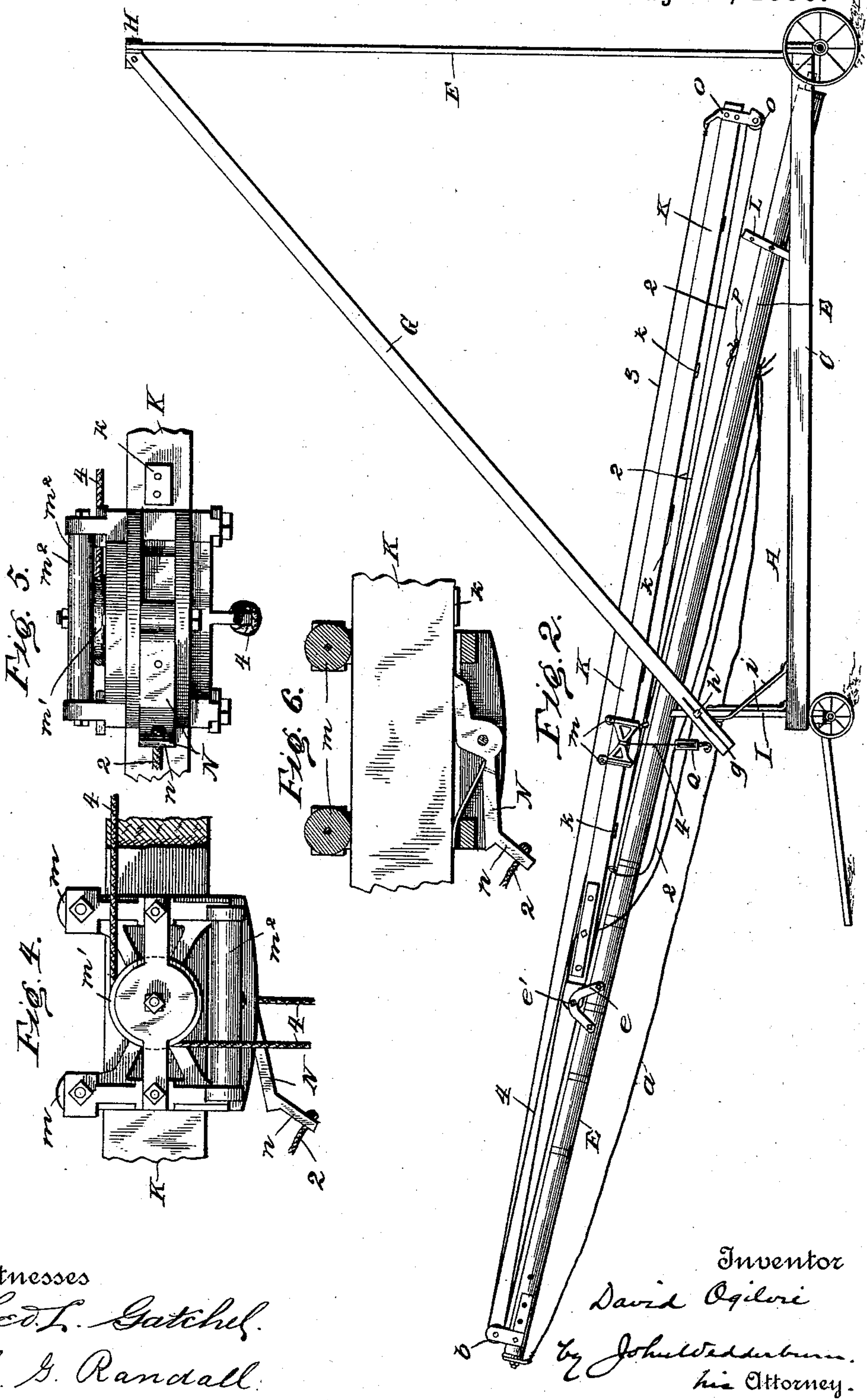
(No Model.)

2 Sheets—Sheet 2.

D. OGILVIE.
HAY DERRICK.

No. 539,997.

Patented May 28, 1895.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID OGILVIE, OF LEE, NEVADA.

HAY-DERRICK.

SPECIFICATION forming part of Letters Patent No. 539,997, dated May 28, 1895.

Application filed December 13, 1894. Serial No. 531,629. (No model.)

To all whom it may concern:

Be it known that I, DAVID OGILVIE, a citizen of the United States, residing at Lee, in the county of Elko and State of Nevada, have
5 invented certain new and useful Improvements in Hay-Derricks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it
10 appertains to make and use the same.

In United States Patent No. 524,862, granted to me on the 21st day of August, 1894, I have shown and described an improved hay elevating derrick. This device has proved most ad-
15 vantageous, but in practice certain defects have been discovered in the matter of convenience in operation, and I have devised the present invention for the purpose of overcoming these defects and for improving upon the
20 art generally relating to hay elevating derricks.

The invention consists in the provision of means whereby a derrick may be placed upon wheels, the mast thereof may be adjusted to
25 overcome unevenness in the ground, and the mast carrying the boom and other attachments may be folded down upon the trucks for convenience in transporting.

The invention also consists in certain details of construction, combination of parts and arrangements of instrumentalities as will be fully set forth hereinafter.

The invention is clearly illustrated in the accompanying drawings, which form a part
35 of this specification, in which—

Figure 1 is a side elevation of a derrick embodying my invention. Fig. 2 is a similar view of the same, showing the parts in their closed or folded positions. Fig. 3 is a section
40 through a portion of the frame, taken on the line $x x$ of Fig. 1, showing the pivotally-mounted gudgeon-block. Fig. 4 is a side elevation of the traveling carriage of the boom, looking from the rear of Fig. 1. Fig. 5 is a
45 bottom plan of the same. Fig. 6 is a vertical section through the same. Fig. 7 is a detail view, in perspective, of the connection for the upper part of the mast. Fig. 8 is a section on the line $y y$, and Fig. 9 is a section on the line
50 $z z$, of Fig. 1.

Similar letters and numerals of reference indicate like parts in the several views.

A represents the main frame work of the machine, mounted upon suitable wheels at its rear end and upon a truck at its front end. 55
The said frame is strongly built up of longitudinal and cross beams B and C, respectively, to be able to withstand the weight it will be called upon to bear.

D is a block pivoted at each end to longitudinal beams near the rear of the frame-work and E is the mast having a gudgeon in its lower end journaled in said block D, whereby the mast is enabled to swing back and forth with said block and also to rotate 60
on the said gudgeon. The mast is supported in its upright position by means of the four braces F. F. and G. G. The former have their lower ends secured to the rear of the frame-work and their upper ends to the U- 70
shaped metallic clip H provided with ears or projections h through which bolts pass for securing the braces F. F. in place. At the front of the machine is an upright I firmly secured and held in place by the rods or 75
braces $i i$. The braces G. G. are adjustably secured at their lower ends to this upright, and at their upper ends to the U-shaped piece H. They are provided with slots g at their lower ends and through these slots and 80
the upright I passes a bolt h' , whereby the braces G. G. may have a limited adjustability up and down to provide for keeping the mast E in a vertical position, notwithstanding the fact that the ground is uneven. These braces 85
G are so attached to the upright I and to the part H as to be everywhere parallel thereto.

The mast E is held in its working position in the U-shaped piece H by means of the band or plate J of malleable iron bent to conform to the shape of the mast. The ends of the band fit into corresponding grooves in the sides of the part H, and the grooves and the plate are so adjusted that the plate may be readily removed. When it is removed, by 95
reason of the mast E being mounted in the pivoted block D, the said mast is permitted to fall down between the parallel braces G, G, and rest on the upright.

Near the upper part of the mast is secured 100
a bracket e in which is a horizontally disposed rod e' , which serves as a support and pivot for the boom K. From the top of the mast E, run two or more stray or guy ropes a, a ,

by which the said mast is secured. There is also provided at the top of the mast E a bracket carrying two parallel sheaves *b, b'*.

The mast E is vertically slotted near its lower end at *c* and in said slot is mounted a sheave or pulley *d*, the axle of the said sheave also securing to the mast a U shaped frame L of malleable iron carrying at its closed end two horizontally disposed sheaves *l, l*.

M is a carriage adapted to travel along the boom K, running upon two rollers *m, m*, and provided upon one of its sides with a sheave or pulley *m'* and also with a small wooden guide roller *m²*, which serves the purpose merely of holding the rope on the sheave *m'* and also to prevent chafing. To the lower side of the carriage M is formed a spring actuating clamping lever N one end of which bears up against the under side of the boom K and engages projecting plates *k k* placed at intervals thereon to prevent the carriage from sliding to the mast E. The other end *n* of the lever N is formed into a tongue which projects somewhat from the carriage and to this is attached one end of the rope 2. By drawing upon this rope the clamping lever is released from the boom and the carriage is free to move.

To the end of the boom K is secured a clevis O extending above the said boom, and having below the boom a vertically mounted sheave *o*. The rope 2 passes around this sheave *o* and thence backward through the ring *o'* on the under side of the boom, down to the operator, for a purpose which has been described. Another rope 3 is fastened to the clevis O, after which it passes up to the top of the mast, then down through the pulley *b'* and is fastened to a cleat P at the bottom of the mast. This is for the purpose of adjusting and regulating the position of the boom on its pivot.

The rope 4 is attached at one end to the side of the carriage M, thence it passes through the block Q which supports the hay fork, thence back through sheave *m'* in the carriage M, thence up to pulley *b* at the top of the mast and thence down through slot *k'* of boom K and over the pulley therein, thence down through slot *c* over pulley *d* and out between pulleys 11 for attachment to suitable elevating or draft power.

The invention has now been sufficiently described, it is thought, to enable its operation to be readily understood. In the normal condition of the device, that is, when it is out of use, or is being transported from one place to another the parts are in the position shown in Fig. 2, with the mast folded down upon the upright I and the boom folded down upon

the mast. To raise the mast it is simply necessary to draw out on one of the guy ropes *a* when it is secured in its place in the part H by the means heretofore described. The boom is elevated by drawing upon the rope 3, and by this it can be secured at any angle with relation to the mast. The hay fork or grapple is loaded and the same is raised by the application of the draft power to the rope 4. The boom is swung one way or another for the purpose of getting the load over the stack by means of the U shaped frame L, through which the rope 4 passes around the pulley 1. The power being applied from one side or the other of the machine will turn the mast on its gudgeon, and thereby the boom, in just the opposite direction.

I have described my invention in its preferred form, but desire it to be distinctly understood that I do not intend to restrict myself to the exact construction shown and described.

What I do claim is—

1. In a portable device for elevating hay, the combination of a framework suitably mounted upon wheels, a mast pivotally and rotatably mounted thereon, whereby the same may be rotated and swung to and from its upright position, supporting braces for said mast, means for fastening and unfastening the mast to and from the upper parts of the said braces, a boom pivotally attached to said mast, and means for securing the said mast and boom in their operative positions, substantially as described.

2. In a device of the character described, the combination of a framework suitably mounted upon wheels, a mast pivotally and rotatably mounted thereon, an upright secured to the forward end of said framework and a bolt passing through the upper part thereof, two pairs of supporting braces for said mast, the respective ends of one pair of which being attached to the rear of the framework and to a metallic support surrounding the mast, the lower ends of the other pair having longitudinal slots therein which engage the bolt in the upper end of the upright, and the upper ends of the said braces being secured to said metallic support, whereby the said supports may be adjusted relatively to the frame, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID OGILVIE.

Witnesses:

E. A. P. JOHNSON,
BENSON CRAIGHEAD.