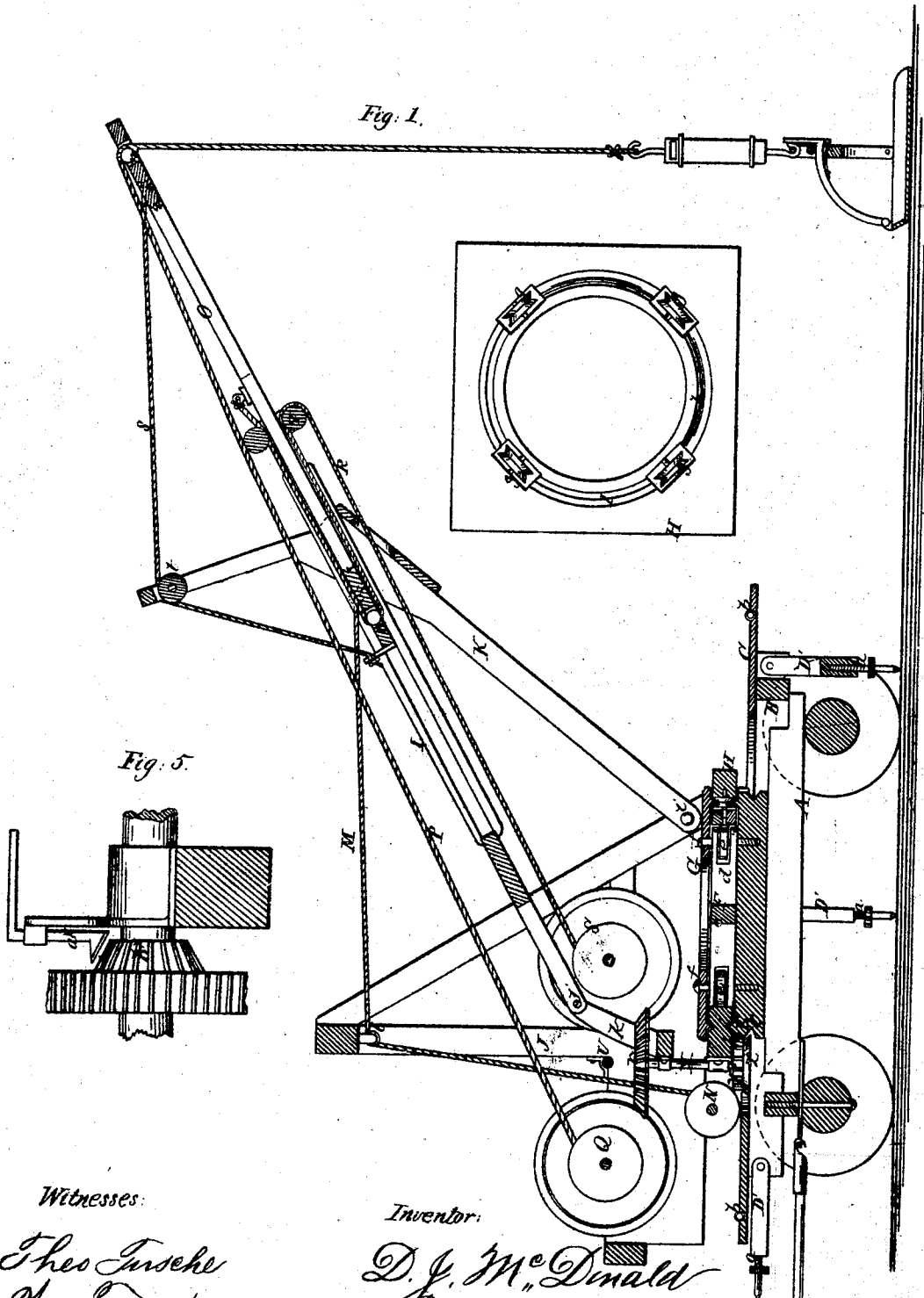


D. J. McDonald.

Derrick.

N^o 72064

Patented Dec. 10, 1867.



Witnesses:

Theo. Tinsche
W. Trewin

Inventor:

D. J. McDonald
Per Murray & Co. Attorneys

D. J. McDonald.

Derrick.

N^o 72064

Patented Dec. 10, 1867.

Fig. 3.

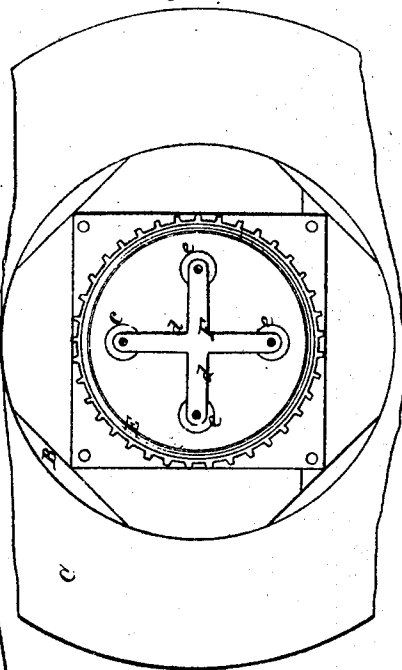
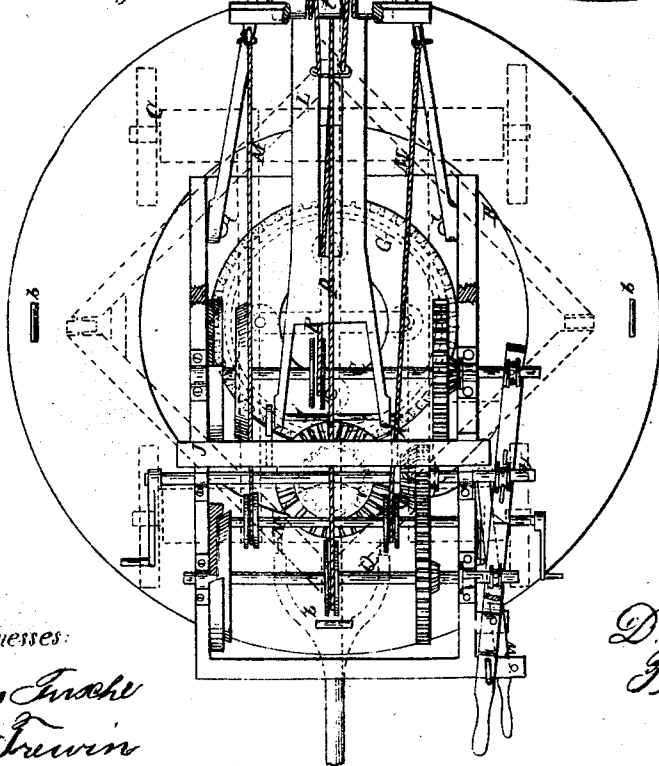


Fig. 2.



Witnesses:

*Thos. Incke
H. J. Truwin*

Inventor:

*D. J. McDonald
Per *Munnell*
Attorneys*

United States Patent Office.

D. J. McDONALD, OF GOLD HILL, NEVADA.

Letters Patent No. 72,064, dated December 10, 1867.

IMPROVED DERRICK.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, D. J. McDONALD, of Gold Hill, in the county of Storey, and State of Nevada, have invented a new and useful Improvement in Portable Derricks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to a new and improved derrick; and it consists in a novel construction and arrangement of parts, as hereinafter fully shown and described, whereby the device may be readily drawn from place to place, the crane or derrick-frame adjusted in any desired position within the scope of its movement, friction avoided, and the whole apparatus manipulated with the greatest facility. In the accompanying sheet of drawings—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, fig. 2.

Figure 2, a plan or top view of the same.

Figure 3, a plan or top view of the platform of the device, the derrick-frame being removed.

Figure 4, a detached inverted plan of the plate or bed of the derrick-frame pertaining to the device.

Figure 5, a section of a portion of the device, taken in the line *y y*, fig. 2.

Similar letters of reference indicate like parts.

A represents a wagon, which may be constructed like an ordinary wagon for teaming or working purposes, the body being omitted. On the bed of the wagon there is fitted a square frame, B, having an oblique or diagonal position relatively with the wagon-bed, as shown by the dotted lines in fig. 2. On this frame B there is permanently secured an annular platform, C; and to each angle of the frame B a support, D, is attached by a pivot or joint, the pivots or joints admitting of the supports being turned down to a vertical position, or adjusted upward in a horizontal position, (see fig. 1.) These supports have screws, *a*, fitted in their lower ends, by turning which their lever ends may be brought in contact with the earth when the supports are adjusted in a vertical position, and the latter made to hold the platform perfectly steady. The platform also, by means of these screws, may be adjusted in a perfectly horizontal position, levels *b* being inserted in the platform to facilitate this adjustment.

Centrally within the frame B there is secured a solid circular casting, D, having a V-shaped groove, *c*, made circumferentially around it, and teeth above the groove to form a fixed toothed wheel, E, (see figs. 1 and 3.) On this wheel E there is a frame, F, composed of two cross-bars, *d d*, having rollers, *e*, inserted in their ends; and over the frame F a circular plate, G, is fitted, the latter, with frame F, being secured to the wheel E by bolts *f*, shown clearly in fig. 1.

H is the bottom plate or bed of the derrick-frame, which may be wholly of cast iron, or made of wood, with a cast-iron ring, I, inserted and firmly secured in a circular central opening in the plate or bed. This ring I has four rollers, *g*, fitted in it, having grooved peripheries, and working on an annular way, *h*, on wheel E. The inner surface of the ring I bears against the rollers *e* of the frame F, the circular plate *g* being over or above the ring I. By this means the derrick-frame J is connected to the frame B on the wagon, and rendered capable of being turned entirely around.

K represents a frame, the lower end of which is connected, by pivot-bolts *i*, to the lower part of the derrick-frame J; and L is the standard of the derrick, the lever end of which works loosely on a shaft, *j*, fitted in supports *k k* in the derrick-frame J. The derrick-standard L passes through the frame K, and has two ropes, M M, attached to it, which pass over pulleys, *l l*, in the frame J, and are attached to a windlass, N, in the frame J. By turning this windlass N, the frame K, and consequently the derrick-standard L, may be raised or lowered, and secured at any desired angle of inclination.

Within the derrick-standard L there is fitted a slide, O, which is allowed to work freely up and down, or in and out. In the outer part of this slide O there is fitted a pulley, *m*, over which the hoisting-rope P passes. This rope is attached to a windlass, Q, in the frame J; and, by turning this windlass, the rope P may be wound up, and the article at its outer end elevated.

The slide O is designed to serve as an extension for the derrick-standard L; and it is operated, moved in or out, by a rope, R, and a windlass, S. The rope R passes from the windlass S, around a pulley, T, at the

outer end of the derrick-standard L, around a pulley, *n*, in the lower end of the slide, and then, extending upward, is attached to the outer end of the slide.

The windlasses Q S are driven by gears, *o o p*, from a shaft, U, in the frame J; and the wheels *o o* of said windlasses may be shoved in or out of gear with the wheel *p* on shaft U by means of a lever, V, so that either windlass may be operated when desired, or both operated simultaneously. The wheel *p* on shaft U is movable thereon, and may be adjusted by means of a lever, W. This wheel *p* has bevel-teeth, *q*, at one side of it to gear into a bevel-wheel, *r*, on the top of a shaft, X, having a pinion, Y, on its lower end, which pinion gears into the fixed toothed wheel E. On the shaft X, below the pinion Y, there is keyed a wheel, Z, which works in the groove *c* in the exterior of D. It will be seen, therefore, that, by throwing the bevel-teeth *q* of the wheel *p* in gear with the bevel-wheel *r*, and turning the shaft U, the derrick-frame may be rotated with the greatest facility.

The slide O is stayed or braced by means of ropes *s*, which pass around a roller, *t*, in the end of the frame K, and have their ends attached to the upper and lower ends of the slide O, as shown in figs. 1 and 2.

The windlasses may be retained at any desired points by pawls *a^x* and ratchets *b^x*, (see fig. 5.)

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

1. The derrick-standard L and frame K, fitted in the derrick-frame J, and arranged, as shown, for the ready adjustment of the standard L.
2. The fitting of the derrick-frame J on the wagon-frame, as shown, to wit, by means of the circular plate D, frame F, and circular plate G, with the wheel E, and pinion Y, to admit of the ready turning of the derrick, as set forth.
3. The supports D', provided with screws *a*, and attached to the frame B, as shown, in connection with the levels *b* in platform C, for the purpose of levelling the device, substantially as described.
4. The annular platform C, applied to the wagon A, when used in combination with a revolving derrick-frame J, substantially as and for the purpose specified.

The above specification of my invention signed by me, this 10th day of October, 1867.

D. J. McDONALD.

Witnesses:

J. H. MARPLE,

CHAS. B. MCCARTHY.