

A. P. JOHNSEN.

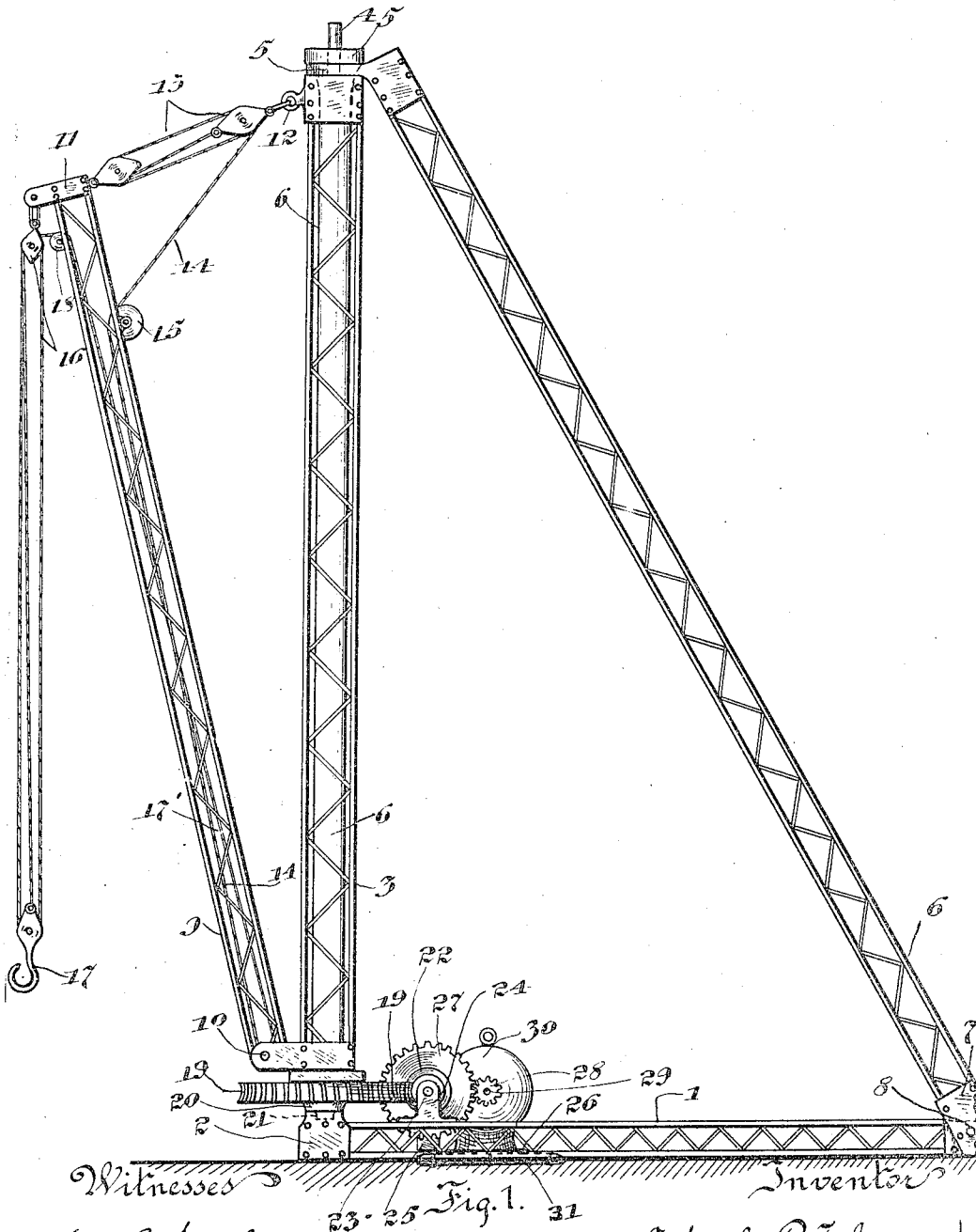
DERRICK.

APPLICATION FILED DEC. 20, 1910.

1,060,603.

Patented May 6, 1913.

2 SHEETS—SHEET 1.



Witneses
W. B. Smith
B. G. Richards

Inventor
Aksel P. Johnson,
by Joshua H. Fells
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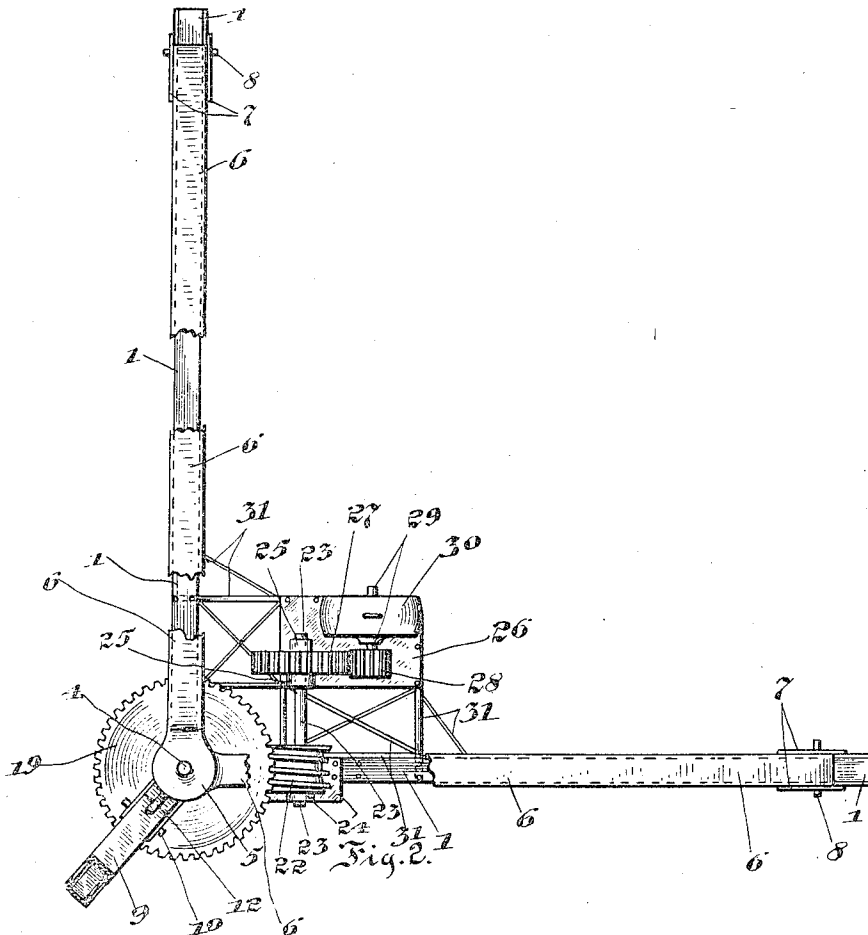
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UNITED STATES PATENT OFFICE.

AKSEL P. JOHNSEN, OF CHICAGO, ILLINOIS.

DERRICK.

1,060,603.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed December 20, 1910. Serial No. 598,340.

To all whom it may concern:

Be it known that I, AKSEL P. JOHNSEN, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Derricks, of which the following is a specification.

My invention relates to improvements in derricks having a mast and boom arranged to turn bodily, so that the load may be lifted from and deposited at any point within the radius of the boom.

The object of the invention is to provide an apparatus as stated in which the source of motive power for turning the mast and boom shall be conveniently arranged so as not to encroach upon the space in which the boom moves.

A further object of my invention is to provide a derrick which shall be simple of construction, strong and durable, and efficient in operation.

Other objects will appear hereinafter.

With these objects in view my invention consists in the novel construction and arrangements of parts all as will be hereinafter more fully described and particularly pointed out in the appended claim.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which—

Figure 1 is a side elevation of my improved derrick, and Fig. 2 is a top plan view thereof.

The preferred form of my invention as illustrated in the accompanying drawings comprises an L-shaped frame 1 which is rigidly anchored to the ground in any desired place, the anchoring means not being shown in the drawings. At the juncture of the members composing the frame 1 a bearing block 2 is provided which is adapted to support the mast 3 as clearly illustrated in Fig. 1. The upper end of the mast 3 is provided with an axial pin 4 to receive the perforated lugs 5 of the brace members 6, the lower ends of the latter being provided with perforated side plates 7 which are spaced to embrace the members of the frame 1. In order to secure the brace members 6 to the members of the frame 1 after the members 7 are properly positioned the pins 8 are passed through the latter and the mem-

bers of the frame 1 as clearly illustrated in the several views. The pins 8 are readily removable so that when it is desired to take down the derrick said pins are removed and the upper ends of the members 6 disengaged from the pin 4, thus separating the parts for ease in transportation. The boom 9 is hinged to the lower end of the mast 3 by means of a pin 10, and the same is adapted to revolve with said mast in the usual manner. The free end 11 of the boom 9 is connected to an eye 12 provided on the mast 3 by means of a block and tackle 13, the fall line 14 of said block and tackle passing over a pulley 15 provided on the boom 9 and extending downwardly therethrough and thence to the engine or other source of power as will be understood by those skilled in the art. An ordinary block and tackle 16 having a lifting hook 17 is connected to the free end 11 of the boom 9 and the fall line 17 thereof passes over a pulley 18 and thence downwardly to the engine the same as the fall line 14.

From the foregoing construction it is apparent that the mast 3 and boom 9 are so mounted as to operate through an angle of 270°, the motive apparatus for revolving said mast and boom being located between the L-shaped members of the frame 1, thus being confined to an angle of 90°. The lower end of the mast 3 rests upon a worm wheel 19 having a hub 20 from which the journal 21 projects into the bearing block 2 as indicated by dotted lines in Fig. 1. Said worm wheel meshes with and is driven by a worm 22 which is mounted on the shaft 23, thus forming a non-reversing driving connection between said shaft and the mast 3. The shaft 23 is journaled in a bearing block 24 which is secured to one of the members of the frame 1 and in bearing blocks 25 which are formed integral with a base 26 which will be presently described. A driven spur gear 27 is provided on the shaft 23 and meshing therewith is a driving pinion 28 which is carried by a motor shaft 29, the motor 30 being preferably electric as indicated.

The base 26 having the bearing blocks 25 and supporting the motor 30 is rigidly connected to the members of the frame 1 by means of a frame work 31. Hence the frame work 31 serves two purposes, that of pro-

viding a rigid support for the motive apparatus and in maintaining the members of the frame 1 in proper relative disposition.

It will be observed that when the members of the frame 1 are properly anchored for securing the derrick in any particular operative position that the motive apparatus for revolving the mast 3 and the boom 9 will always be in proper position for operation, thus facilitating the quick placing of the derrick.

A derrick of the construction set forth is simple of construction and portable, hence is particularly adapted for many lines of work.

While I have shown the preferred construction for carrying my invention into effect there might be various changes made in the arrangements of parts and details of construction without departing from the spirit of the invention, hence I desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

In a knock-down derrick, a pair of angularly disposed horizontal base members, a swinging mast mounted thereon, a motor, a bed plate for said motor arranged between said base members and spaced apart therefrom, a frame rigidly but detachably connecting said bed plate and said base members and rigidly spacing the latter apart, a shaft driven by said motor, bearings for said shaft on said bed plate and one of said base members, a gearing connecting the lower end of said mast and the adjacent end of said shaft substantially as described.

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

AKSEL P. JOHNSEN.

Witnesses:

HELEN F. LILLIS,
JOSHUA R. H. POTTS.