No. 723,731. PATENTED MAR. 24, 1903.

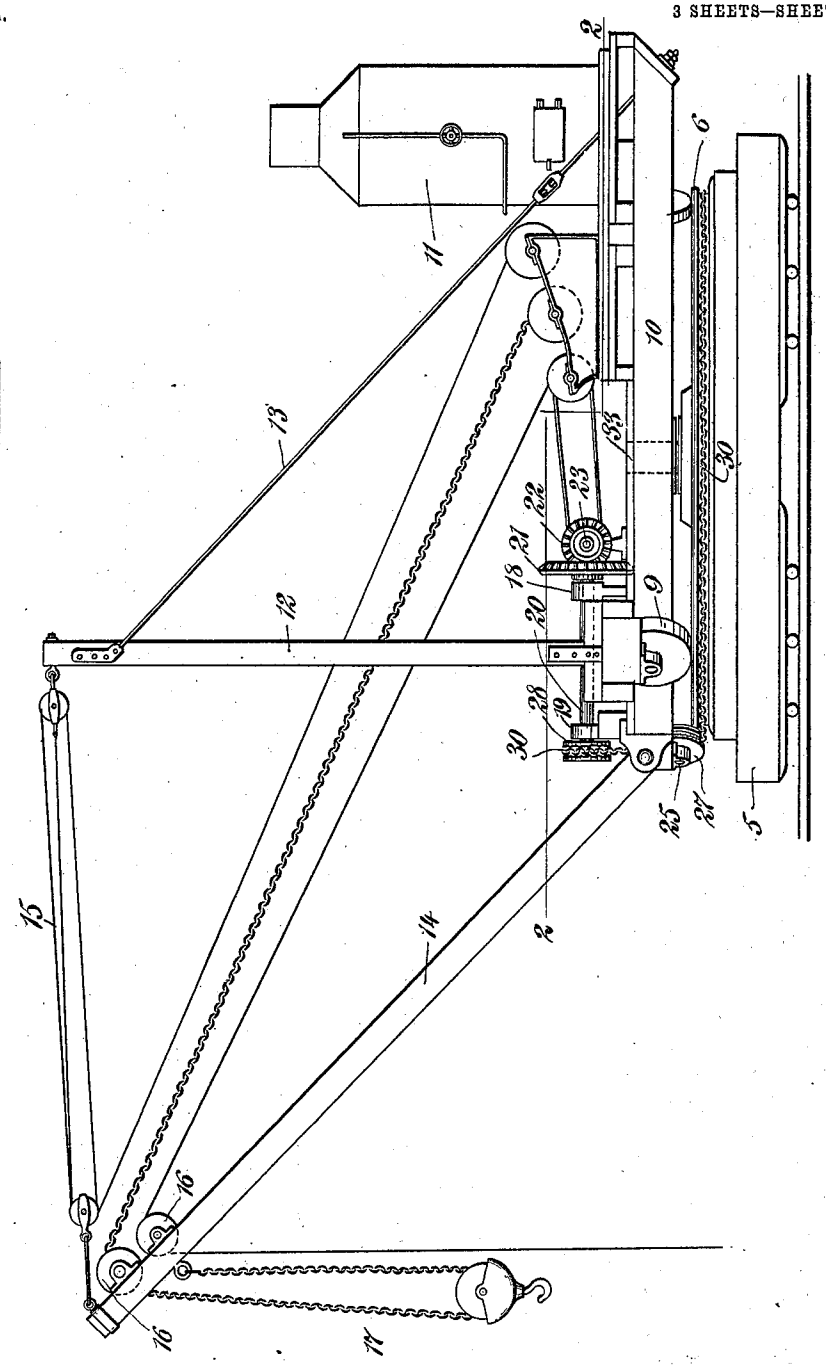
C. J. REISE.

DERRICK.

APPLICATION FILED JULY 25, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

J. A. Brophy

W. J. Berchard

INVENTOR

Charles J. Reise

BY Munn & Co.

ATTORNEYS.

No. 723,731. PATENTED MAR. 24, 1903.

C. J. REISE.

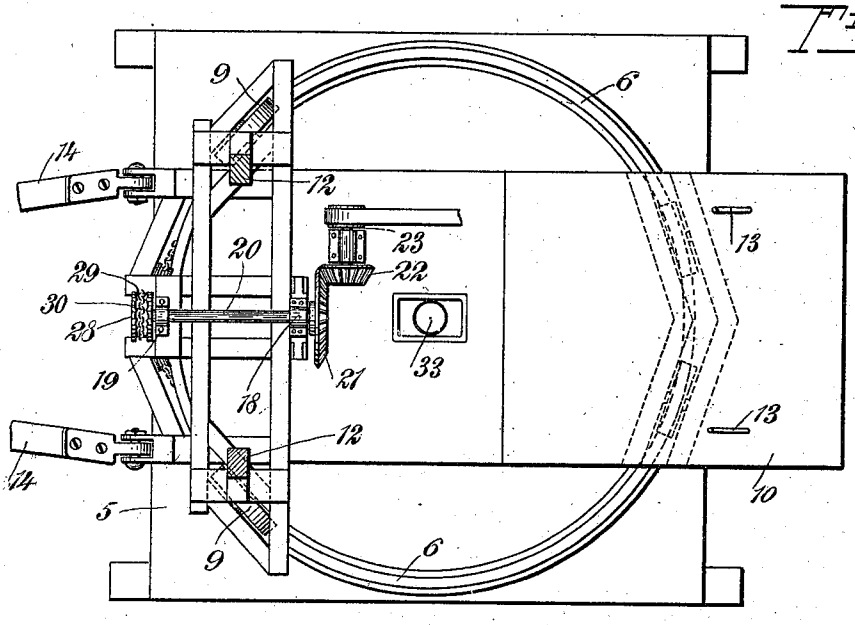
DERRICK.

APPLICATION FILED JULY 25, 1902.

NO MODEL

3 SHEETS—SHEET 2.

Fig. 2



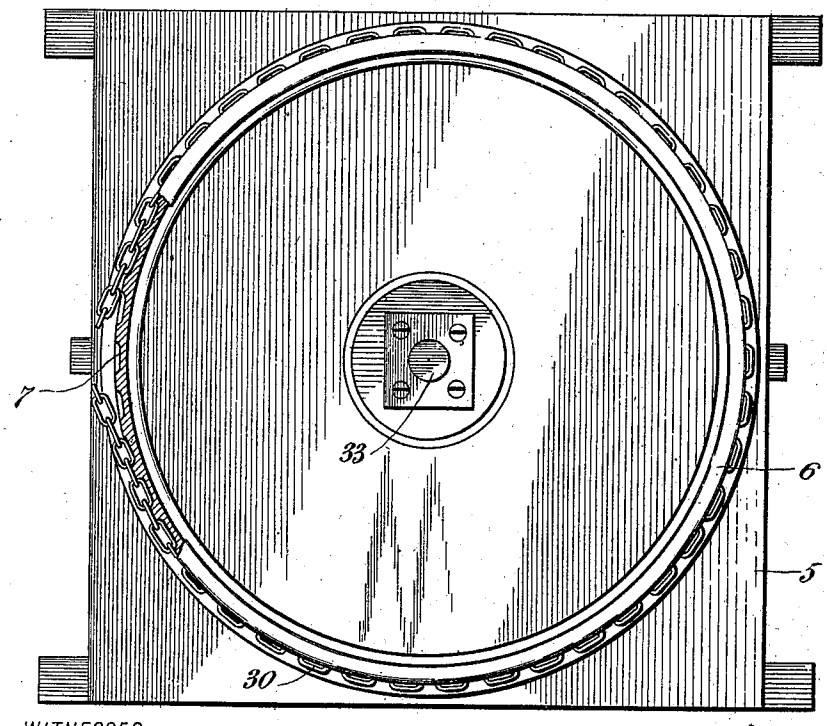


Fig. 3

WITNESSES:

J. A. Bopley

N. C. Benedict

INVENTOR

Charles J. Reise

BY Munn & Co.

ATTORNEYS.

No. 723,731. PATENTED MAR. 24, 1903.

C. J. REISE.

DERRICK.

APPLICATION FILED JULY 25, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

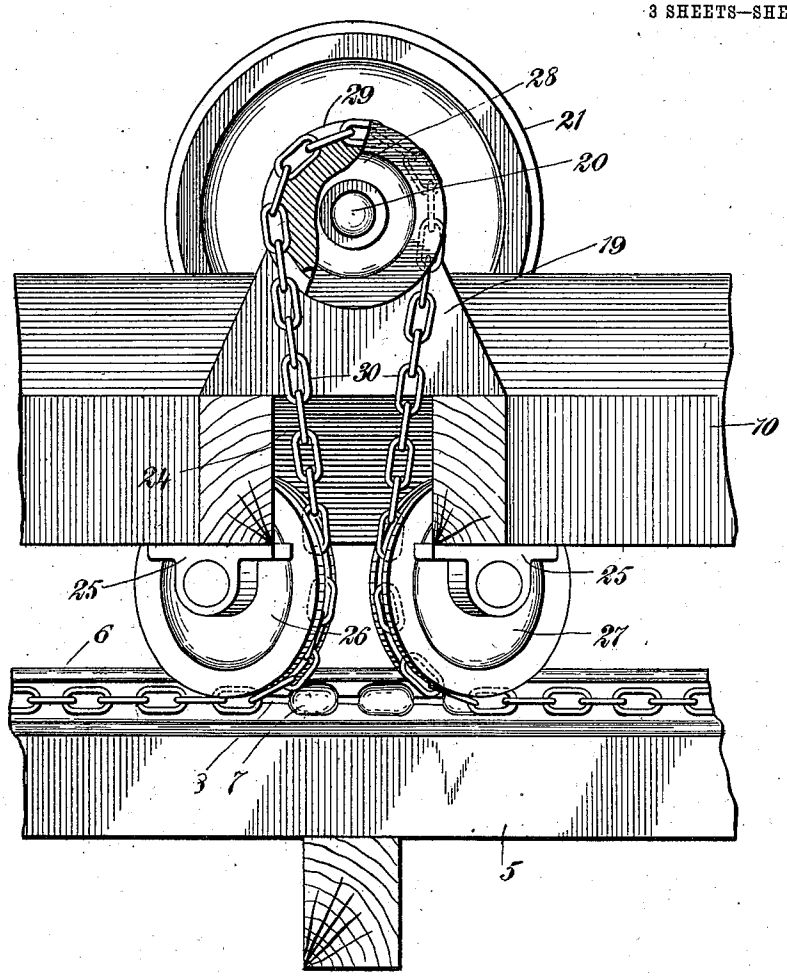


Fig. 4

WITNESSES:

J. A. Brophy

H. C. Beuchard

INVENTOR

Charles J. Reise

BY Munn

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES J. REISE, OF MINERAL, ILLINOIS.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 723,731, dated March 24, 1903.

Application filed July 25, 1902. Serial No. 116,932. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. REISE, a citizen of the United States, and a resident of Mineral, in the county of Bureau and State of Illinois, have invented a new and Improved Derrick, of which the following is a full, clear, and exact description.

My invention relates to improvements in derricks of that class which employ a swinging platform adapted to carry the operating and hoisting engine and to also carry the mast and boom which are adapted to lift and transfer a load to or from the swinging platform or at any point within a prescribed limit relative to said platform.

One object of the present invention is to provide simple and durable means arranged to impart traveling motion to the platform in a manner to make it turn a complete revolution in one direction or the other.

A further object of the invention is to simplify the platform-operating mechanism and increase the durability thereof by reducing the number of guide-sheaves and by the substitution of a driving-chain for the cable usually employed, the reduced number of sheaves so employed being arranged to enable the service of the driving-chain to be utilized in this class of apparatus.

With these ends in view the invention consists in the combination, construction, and arrangement of parts, which will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a derrick embodying the improvements contemplated by this invention. Fig. 2 is a sectional plan view taken in the plane indicated by the dotted line 2 2 of Fig. 1. Fig. 3 is a plan view of the foundation-framework, illustrating the circular track on which the swinging platform is adapted to turn and the arrangement of the chain around said track; and Fig. 4 is an enlarged detail view, partly in section and in elevation, of certain features of the invention.

5 designates the framework or stationary platform, which forms the base adapted to support the operating devices of my improved derrick. This framework may consist of suitable timbers having the platform secured thereto, and on this platform is fastened a circular track 6. This track preferably consists of a railway-rail bent into annular form and adapted to be spiked or otherwise fastened to the platform. The exterior face of the rail is provided with a series of indentations 7, connected by intermediate grooves 8, as shown more clearly by Figs. 3 and 4, and these indentations and grooves form an active face on the circular track designed to effectually prevent slipping of the driving-chain, presently described, around the external face of the track.

10 designates the swinging platform, which is provided with suitable carrying wheels or rollers 9, the latter being journaled in suitable bearings provided on said platform and fashioned to ride freely on the top edge of the track 6. This platform supports or carries an engine 11 of any suitable construction, the same being preferably arranged near one end of the platform, as shown by Fig. 1.

A vertical framework 12 is erected on the swinging platform, preferably at the end opposite to the engine, and this framework constitutes a mast which is stayed by the tie-rods 13. A swinging boom 14 is pivotally connected to the swinging platform at a point adjacent to the mast 12, and said mast and the boom are connected by a suitable tackle 15, the operating-line of which is coiled on one of the drums of the engine. The boom is also provided with suitable guide-sheaves 16, adapted to guide the cables or chains of the hoisting mechanism 17, the latter being operated by one of the drums of the engine, as shown. The detailed construction of the boom, the tackle mechanism therefor, and the housing appliances may be modified within wide limits.

18 19 designate suitable pillar-blocks which are secured to the swinging platform 10 and support a horizontal shaft 20. This shaft is adapted to be driven by the engine, and as one means for accomplishing this end I have shown one end of the shaft as having a bevel-gear 21, with which meshes the bevel-gear 22 on the counter-shaft 23, the latter being belted to the engine, as shown by Figs. 1 and 2. The outer end of this shaft 20 is disposed

over an opening or recess 24, which is provided in one end of the swinging frame, as shown by Fig. 4, and to the under side of this swinging frame at points adjacent to the vertical recess 24 are applied the bearings 25. In these bearings are mounted the guide-sheaves 26 27, which extend part way across the recess 24 and are free to turn on axes which are inclined to the longitudinal axis of the swinging frame. These guide-sheaves 26 27 are peripherally grooved for the accommodation of the operating-chain, and said grooved sheaves are disposed adjacent to the outer active face of the circular track, the lower edges of said sheaves overlapping said active face of the track.

A power-wheel 28 is fastened to the outer end of the shaft 20, so as to lie directly over the vertical recess 24, the axes of said shaft 20 and the power-wheel 28 being in a vertical plane between the opposing guide-sheaves 26 27. The diameter of this power-wheel 28 exceeds the width of the space between the contiguous grooved edges of the guide-sheaves 26 27, as shown more clearly by Fig. 4. This power-wheel 28 is provided with a peripheral groove 29 and with indentations adapted for the accommodation of the chain-links.

30 designates an endless driving-chain which passes over and engages with the power-wheel 28 and is thence carried beneath the grooved sheaves 26 27 and around the circular track, so as to engage with the active face thereof. (See Figs. 3 and 4.) The chain engages with the active face of the stationary track and with the grooved face of the power-wheel 28 in a manner to minimize slippage of the chain with relation to these devices, thus increasing the efficiency of the apparatus as a whole.

My improved construction enables me to dispense with a number of guide-sheaves, because I find it necessary to only employ two of the sheaves, which occupy the active relation to the track shown by Fig. 4 and are disposed directly below the power-wheel on the driving-shaft 20. This materially simplifies the construction and also cheapens the apparatus.

I find that a chain possesses marked durability as compared with a cable, and it is estimated that the endless chain herein described as an essential part of this invention will last at least one year longer than a wire cable, thereby increasing the durability of the structure.

It is evident that the platform 10 may be pivoted centrally on the stationary base by a suitable post 33, thus preventing edgewise displacement of the revoluble parts of the apparatus.

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

A derrick comprising a base-platform, a circular track fastened thereto and provided with an external grooved active face, a swinging platform mounted to travel on said track, a radial horizontal driving-shaft mounted on said swinging platform, a single pair of adjacent guide-sheaves journaled on the swinging platform on opposite sides of said driving-shaft and arranged to overlap the circular track, a power-wheel fast with the shaft and of a diameter greater than the space between the guide-sheaves, and an endless chain embracing the active face of the track and having an upwardly-extending bight which passes over the power-wheel and under the guide-sheaves.

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

CHARLES J. REISE.

Witnesses:
ED. CALLAHAN,
E. J. COLLINS.