O. W. CALLAHAN.

DERRICK.

APPLICATION FILED DEC. 28, 1910.

1,054,743.

Patented Mar. 4, 1913.

2 SHEETS-SHEET 1.

Fig I

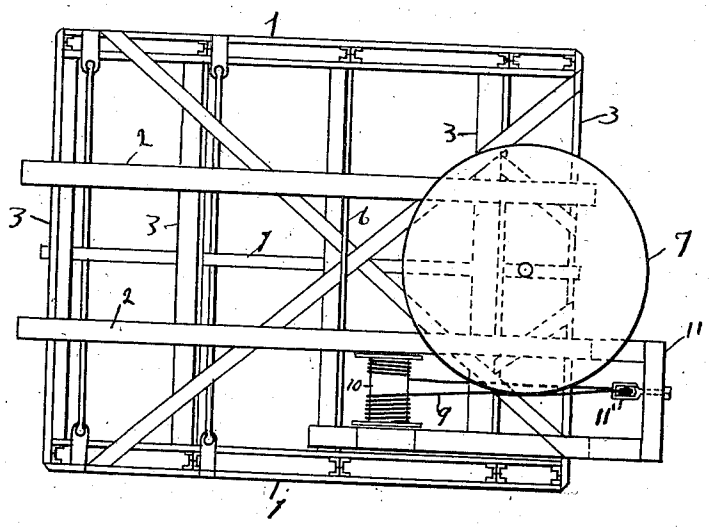
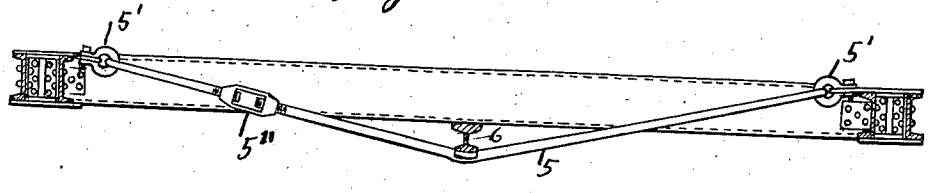


Fig II



WITNESSES

John J Donnelly

A B Donnelly

INVENTOR

Owen W Callahan

By

W. E. Donnelly

His Atty.

O. W. CALLAHAN.

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Fig III

Patented Mar. 4, 1913.

2 SHEETS—SHEET 2.

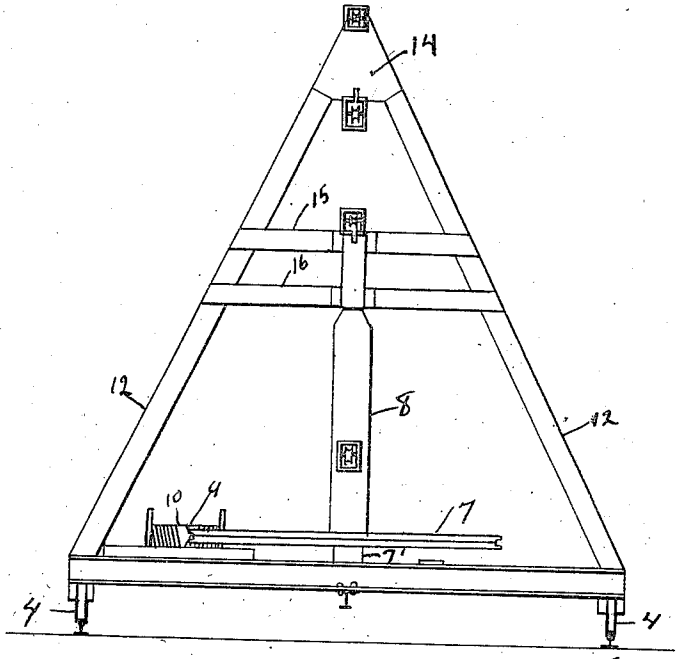
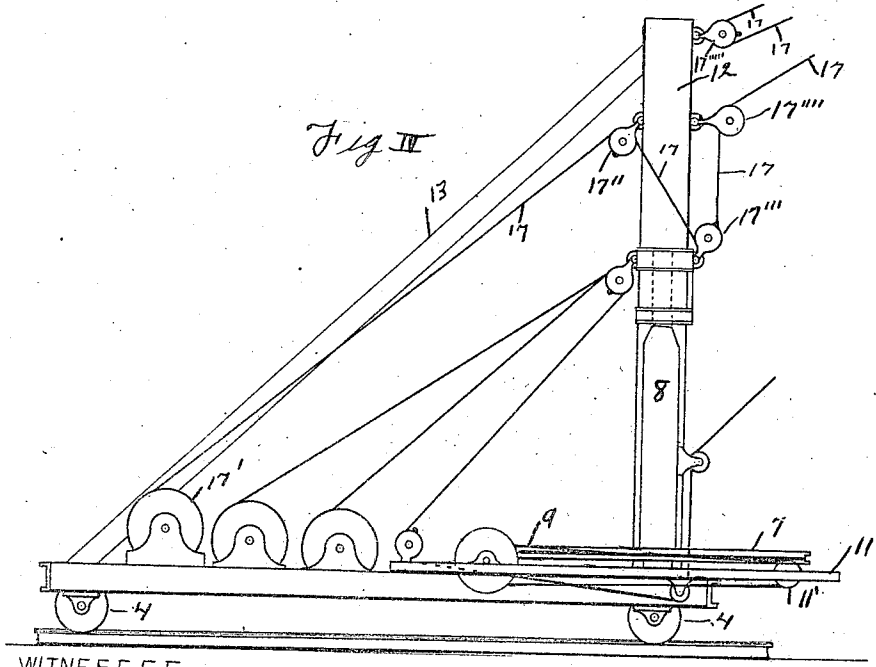


Fig II



WITNESSES

A. B. Donnelly

John J. Donnelly

INVENTOR

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By

W. E. Donnelly

UNITED STATES PATENT OFFICE.

OWEN W. CALLAHAN, OF CLEVELAND, OHIO.

DERRICK.

1,054,743. Specification of Letters Patent. Patented Mar. 4, 1913.

Application filed December 28, 1910. Serial No. 599,687.

To all whom it may concern:

Be it known that I, OWEN W. CALLAHAN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented some certain new and useful Improvements in 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 pertains to make and use the same.

This invention relates to derricks.

This invention has for its object the construction of a strong, compact device, which can be employed in restricted places, and has all the advantages of derricks of a larger construction.

Other objects of this invention will appear in the following specifications.

This invention consists, first in providing a supplemental platform in connection with the mast turn table, which platform is located forward and to one side of the platform of the derrick and in juxtaposition to the "bull wheel" which is the wheel by means of which the mast with its connected boom is swiveled, or turned from one direction to another.

My invention further consists in the construction of a frame of a derrick, and the mode or manner in which the mast is attached thereto, and in which the several lead or guide pulleys are secured.

The invention further consists in parts and combination of parts, all of which will be hereinafter fully set forth and claimed.

In the drawings, Figure I, is a plan view of the platform of the derrick constructed according to my invention. Fig. II is a cross section view taken through the platform, showing the manner of bracing the same. Fig. III, illustrates in front elevation the construction of the A frame, and the manner of securing the mast thereto, and the connection between the drum and bull wheel of the mast. Fig. IV, is a view in side elevation illustrating the several leads of the cable and the manner in which the guide pulleys are secured and their several locations in relation to the different cables, and also illustrates in side elevation the auxiliary platform shown in plan in Fig. I.

As hereinbefore stated this invention has special reference to a construction which is specially adapted in strength and in size to restricted positions, where the room to accommodate the derrick is small, and where the sweep of the boom is required to be of more or less large area, and for this purpose in building the derrick I have constructed it as follows: A platform is constructed as illustrated in Figs. I, and II of girders, preferably made of I beams and channel metal. These girders being connected together as illustrated in Fig. I of the drawings, the longitudinal beams 1, 1, and the engine bed beams 2, 2, connected together in their relative position by cross girders, 3, 3, 3, 3. In order to make these beams and girders more strong to sustain the weight and, especially at their central portions between the trucks 4, 4, (see Figs. III and IV) upon which said frame is mounted, I provide tie rods 5, which connect at both ends to the beams as at 5′, 5′, and are provided with a turn buckle 5″. The central portion of the tie rods or brace rods 5, engages the rail beam 6, at its bent portion, and by means of the turnbuckle 5″, the same is tightened and acts as a tension rod to sustain and reinforce the same. Mounted on the platform is a bull wheel 7, which is also secured to the lower end of the mast 8, and connected to said mast causing said mast to oscillate or revolve with it. This bull wheel is grooved as usual for the purpose of engaging a cable 9, which is wound around said bull wheel, and is operated through the drum 10, in turn operated by an engine, thus giving the requisite swing or motion to the mast. Inasmuch as this bull wheel with this connected mast is secured to the forward end of the platform, necessarily, in order to give it the required sweep at the greatest possible angle, I have found that it is essential in order to obtain the proper purchase, that the cable which operates the bull wheel under ordinary circumstances should have the greatest possible lap on said bull wheel, and in order to obtain this I have provided contiguous to said bull wheel and advanced from the main platform forward to a point beyond said bull wheel, an auxiliary platform 11, the same being provided with a sheave 11′, located in direct line with the point of overlap of said cable and with the drum 10, whereby a direct purchase is obtained for the purpose of swinging the mast and its boom through the cable line. By this means I obtain first a stronger pur-

chase on the bull wheel 7, second a quicker action in stopping the boom in its swing, and a better retaining means for holding the boom, which is an essential consideration, while at the same time it is not necessary to extend the platform as a whole forward in order to attain these ends, thus allowing of the platform and derrick as a whole being made shorter and more restricted in area, taking up less space.

In Figs. III and IV of the drawings I have illustrated more in detail the construction of the A frame with two legs 12, 12, and a brace leg 13, the legs of the A frame 12, 12, being tied together at their apex by the usual cap plate 14, and being provided intermediate between said cap plate 14, and the feet of said legs, with cross braces 15 and 16, which act not only to brace the legs 12, 12, but act as a swivel support for the upper end of the mast 8, which is stepped at its lower portion beneath the bull wheel 7, as at 7', in the frame of the platform, thus allowing the mast with its connected boom to swing. In designing the frame for the support of the mast and the attendant boom, I have also taken into consideration the requisite purchases and leads for the several cables, and the requisite guide sheaves and purchase sheaves; thus the boom line 17, runs from its drum 17', through sheaves 17'', 17''', and 17'''' to the boom hoisting and lowering tackle located at the upper end of the boom, and returning through the several sheaves to the sheave 17''''', as is usual in tackle for raising and lowering booms. It will be seen in this connection that the different purchases in the cable 17, are always in direct line as between sheaves 17'', 17''', and 17'''', thus bringing no unnecessary strain upon the cable 17, and always having it in proper alinement without being contorted, regardless of the direction of the upper outer end of the boom, the sheaves 17''', 17'''' and 17''''', following the direction in which the boom is located, by means of their being swiveled in the positions in which they are located.

In setting forth this invention I have described in detail a construction as I consider it best adapted for the purpose of obtaining the required results, but I do not wish to be limited to the details of construction herein shown and described, as they may be modified and still the object of my invention be attained.

What I claim is:

1. A derrick of the type set forth, comprising a main platform, a mast, a bull wheel for operating said mast extending beyond the edge of said platform, a drum, an auxiliary platform projecting from the forward edge of said main platform, and in line with said drum, a sheave on said auxiliary platform being located adjacent to and at one side of said bull wheel, and a cable passing around said bull wheel and said drum and said sheave, said sheave being in direct line with the overlap of said cable on said bull wheel.

2. A derrick of the type set forth, comprising a main platform, a mast, a bull wheel for operating said mast extending beyond the forward edge of said platform, a drum located in juxtaposition to said bull wheel and on one side thereof, an auxiliary platform projecting forwardly from said main platform, a sheave on said auxiliary platform, and a cable passing around said bull wheel and said drum and said sheave.

Signed at Cleveland in the county of Cuyahoga and State of Ohio, this 26th day of November 1910.

OWEN W. CALLAHAN.

Witnesses:
JOHN J. DONNELLY,
FRANK C. GREGG.