F. J. BLAKE.

DERRICK.

APPLICATION FILED OCT. 19, 1911.

1,031,037.

Patented July 2, 1912.

2 SHEETS—SHEET 1.

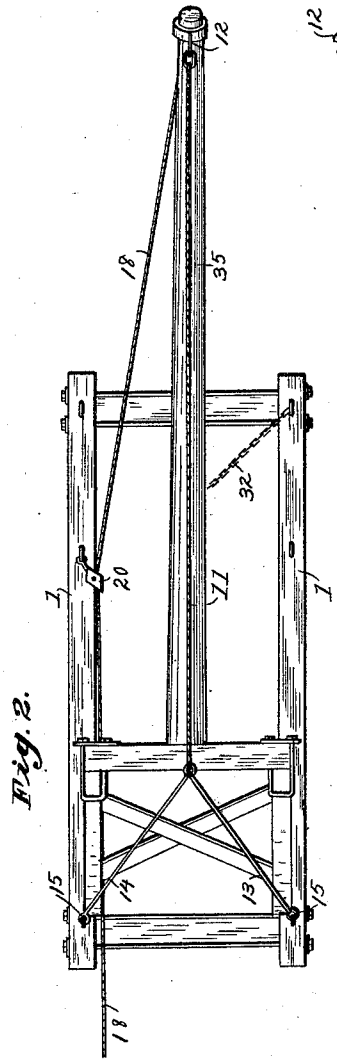

Fig. 2.

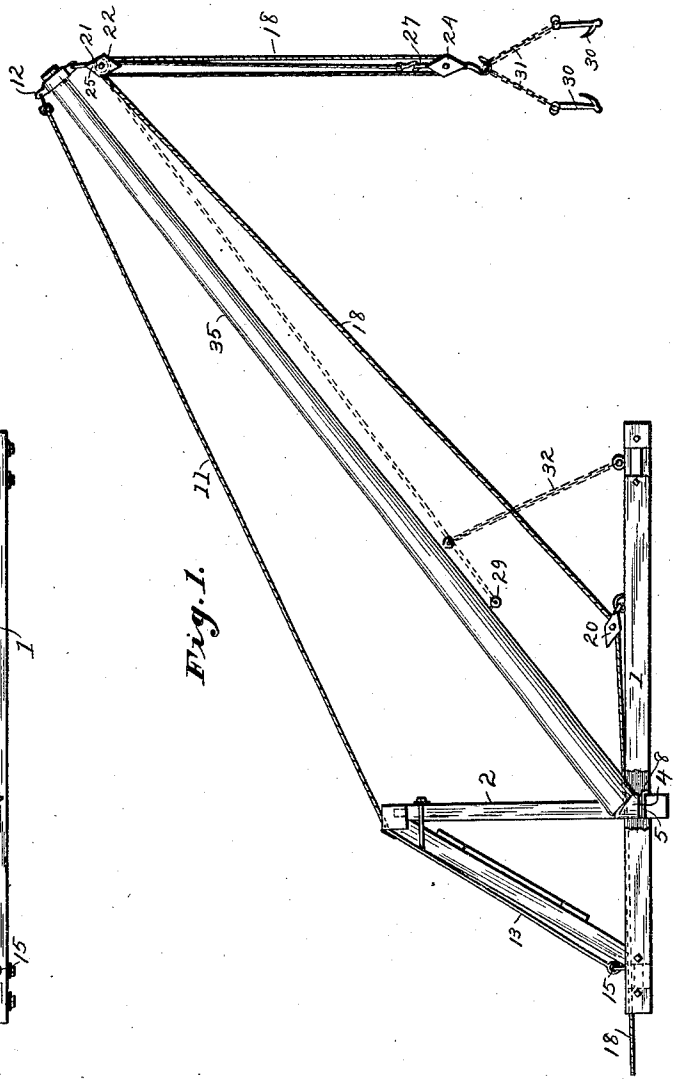

Fig. 1.

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Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

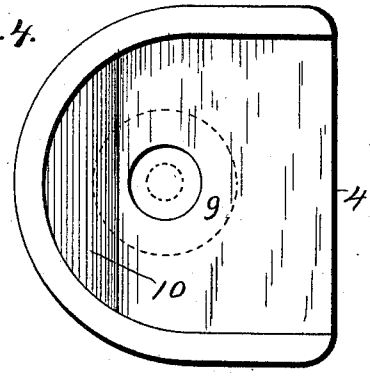


Fig. 3.

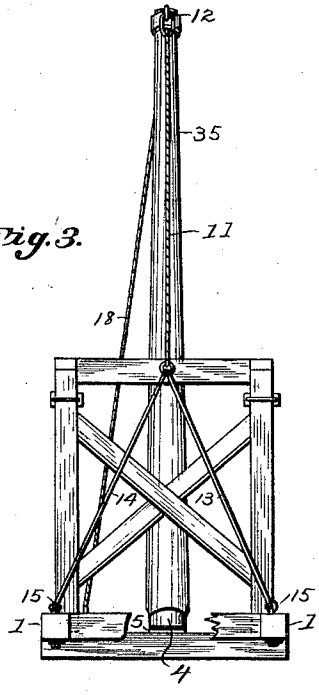


Fig. 5.

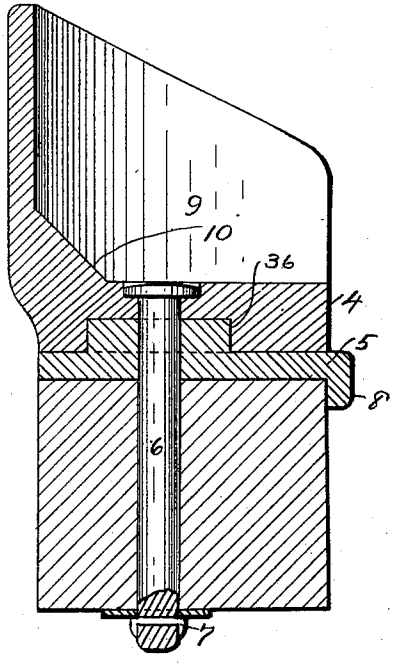
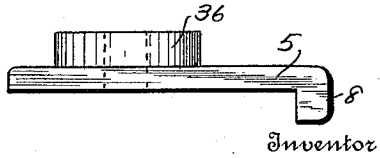


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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DERRICK.

1,031,037. Specification of Letters Patent. Patented July 2, 1912.

Application filed October 19, 1911. Serial No. 655,533.

To all whom it may concern:

Be it known that I, FRED J. BLAKE, a citizen of the United States, residing at Stevens Point, county of Portage, and State of Wisconsin, have invented new and useful Improvements in Derricks, of which the following is a specification.

My invention relates to improvements in derricks.

The object of my invention is to provide improved means for supporting the boom and for varying the adjustment of the tackle in accordance with the load, whereby light loads may be lifted more rapidly than heavy ones.

In the drawings—Figure 1 is a side elevation of a derrick embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a rear elevation. Fig. 4 is a detail top view of the boom receiving socket. Fig. 5 is a detail view of the same in vertical section. Fig. 6 is a detail view of the supporting bearing plate.

Like parts are identified by the same reference characters throughout the several views.

A supporting frame 1 is provided with a vertically extending member 2, at the base of which, and substantially at the transverse center of the frame, a boom receiving member 4 is mounted upon a supporting bearing plate 5. The member 4 has a central aperture in its base to receive a connecting pivot bolt 6, whereby the member 4 is rotatively supported on said plate. The bolt 6 extends through the plate and through one of the frame bars. Its lower end is slotted to receive a key 7. The plate 4 is provided with a down turned flange 8 bearing against the front side of the frame bar to relieve the bolt 6 from the back pressure strains of the boom stick. The member 4 is provided with a boom receiving socket 9, open on one side and having a beveled surface 10 against which the boom stick seats, this surface being substantially at right angles to the boom axis.

The boom is held in a raised position by the cable 11, connected to its outer end at 12 and extending over the raised frame member 2, with branches 13 and 14 connected to the frame base at 15 near its rear corners.

The draft rope or cable 18 extends along one side of the frame base through pulley block 20, and then upwardly over one of the pulleys 21 in pulley block 22 and downwardly around a pulley in the pulley block 24, then upwardly over pulley 25 and again downwardly, the extremity being detachably connected with block 24 at 27. For light loads, however, this extremity of the draft rope may be disconnected and secured to a hook 29 on the boom stick. The gripping hooks 30 are supported from pulley block 24 by chains 31 in the usual manner. The ordinary chain 32 is also employed to support the boom stick laterally from the frame base on the side toward which it swings to the work.

In operation, the boom 35 has its lower end seated in the socket 9 of the member 4, the main pressure being exerted against the face 10 where the member 4 is thickest and strongest. The plate 5 is provided with an upwardly projecting collar 36, which interlocks with the member 4, as best shown in Fig. 5, thus relieving the bolt 6 from lateral shearing strains. The member 4, however, rotates freely about the collar 36 on the bearing plate 5 and thus allows the boom to swing laterally in the direction of the work. The hooks 30 will then be engaged with the objects to be lifted, whereupon power may be applied to the draft rope or cable 18 to elevate the load. It will be observed that the power is applied to the draft rope 18 along a line parallel to one side of the frame 1 and adjacent to the side opposite that to which the chain 32 is connected. The pull upon the cable 18 will therefore cause the boom 35 to swing backwardly from the work as far as the chain 32 will permit it to do so. This arrangement will be found convenient for loading heavy objects upon cars, etc., and is the ordinary method of using a derrick of this type, but with my construction the boom will swing more easily and with less liability of breakage by reason of the mounting of the boom receiving member 4. When the cable 18 is connected to the hook 29, the load will be lifted more rapidly and for light loads this is the preferable arrangement. For the heavier loads, the extremity of the cable is connected with the pulley block 24, whereupon other conditions being equal, the load will move only two-thirds as fast, but one and one-half times as much weight may be lifted in proportion to the power expended in a given period.

I claim—

1. The combination with the boom of a derrick, of a seating member provided with

a boom receiving socket, a bearing plate for the seating member provided with a downturned lip adapted to engage the front side of a supporting frame bar underneath the boom stick, an upwardly projecting collar integral with the bearing plate and interlocking with the seating member, and a pivot bolt adapted to connect the seating and bearing members with each other and with a supporting frame bar.

2. The combination with a derrick frame, of a bearing plate provided with an upwardly projecting collar and having a downturned flange on its front margin engaging one of the frame members, a seating member interlocking with said collar and rotatably mounted upon the bearing plate, said seating member being provided with a boom receiving socket, a pivot bolt extending through the seating member, collar, bearing plate, and frame member and rotatively connecting the seating member with the bearing plate, and frame member, a boom seated in said socket, suitable tackle connected with the boom, and means for supporting the boom in a raised position.

In testimony whereof I affix my signature in the presence of two witnesses.

FRED J. BLAKE.

Witnesses:

LEVERETT C. WHEELER,

I. D. BREMER.