No. 701,975. Patented June 10, 1902.

E. E. WEAVER.

DERRICK.

(Application filed Aug. 21, 1901.)

(No Model.)

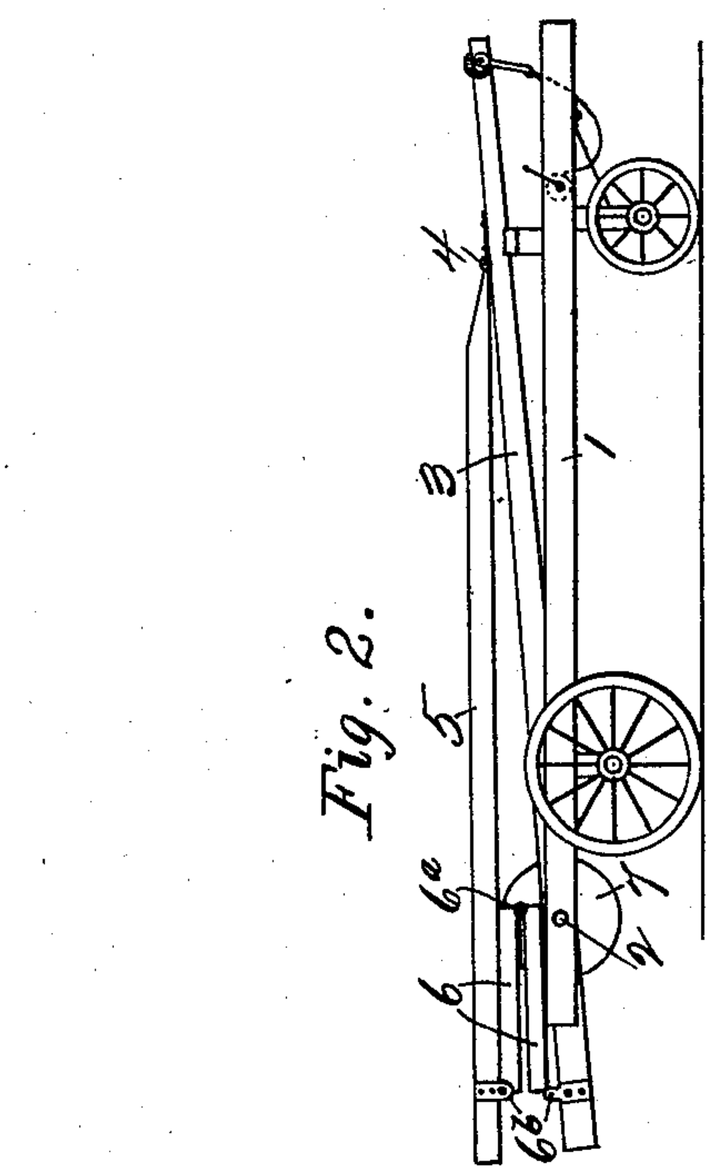

Fig. 2.

Fig. 1.

WITNESSES:

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DERRICK.

SPECIFICATION forming part of Letters Patent No. 701,975, dated June 10, 1902.

Application filed August 21, 1901. Serial No. 72,742. (No model.)

To all whom it may concern:

Be it known that I, ERVIN E. WEAVER, a citizen of the United States, residing at Plaza, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Derricks; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a portable derrick which is especially well adapted for use in the oil-fields and in well-boring generally.

The object of my invention is to provide a portable derrick which may be folded into compact form, which may be readily raised for use and be quickly folded and stowed for transportation, and which shall be strong and durable.

The further object of my invention is to provide convenient means for the rapid raising and lowering of heavy or light objects.

My invention further consists in the details and arrangement of parts hereinafter described, and pointed out in the claims.

I attain the above-stated objects by means of the devices and arrangement of parts hereinafter described, and shown and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my device in operative position and ready for use; and Fig. 2 is a side elevation, on a reduced scale, of the same folded for transportation.

Like numerals of reference indicate like parts in both views.

In the drawings, 1 is a strong elongated rectangular frame mounted upon the four wheels of a stout truck. The side pieces of the frame project rearwardly beyond the rear wheels of the truck, and between these two side pieces, near their rear ends, extends a shaft 2. This shaft passes through the two mast-pieces or uprights 3 of a derrick at such distance from the feet of these pieces that the mast or uprights when they are swung into operative position upon the shaft, which forms a pivot, will touch the ground. Pivoted to the rear side of the uprights 3, near their upper end, as at 4, are two stout braces 5 5, the lower ends of which when in operative position touch the ground. The uprights 3 and the braces 5, near their lower ends, are connected and braced by pieces 6 6. Each of these pieces is formed in two sections of equal length, hinged together on their bottom side at their meeting ends, as at 6^a, and at their other extremities are hinged, as at 6^b, to the uprights 3 and braces 5. The pivotal arrangement of the braces 6 here described permits the two sections of the braces 6 to be folded side by side in parallel relation when the braces 5 are swung upon the pivot 4 into parallel relation with the uprights 3. When the sections of braces 6 are in end-to-end alinement, they rigidly hold the uprights 3 and the braces 5 in the relation illustrated in Fig. 1.

Upon the shaft 2, between the uprights 3, is mounted and journaled a drum 7, which is provided with a winch 8. At the top of the uprights is a housing, which secures the upper ends of the two uprights in fixed relation to each other and which forms bearings for a series of sheaves or pulleys 10. A rope leading from the drum 7 passes over the sheaves or pulleys 10 and down through pulley-block 10^a, the block-and-tackle device here described being adapted for either single or double arrangement. Through the forward ends of the side pieces of the frame 1 passes a shaft 11, provided with crank 12, upon which shaft is a drum, which does not appear in the drawings. From this drum leads a guy-rope 13, which is secured to housing 9, as shown.

14 is a head-block resting on the top of the side pieces of the frame, over the front wheels of the truck, and is designed to support the top of the derrick when lowered into folded position. Through this head-block are transverse openings 14^a.

One end of the drum 7 forms a narrow spool 7^a of greater diameter than the drum proper. Around this enlarged portion of the drum passes a line 15, which leads horizontally through one of the openings 14^a, and to the end of which a team may be hitched when heavy bodies are to be hoisted rapidly. The top of the derrick is also provided with suit-

able guys 16, which when properly secured to some fixed object holds the derrick steady at top.

The operation of my device is as follows: When the derrick is folded for transportation, the bottom part of the derrick is supported by the shaft 2, and the upper part of the derrick rests upon and is supported by the head-block 14. The braces 5 rest upon the uprights in horizontal position, with the folded braces 6 interposed between them. In folded position the derrick here described is low enough to pass under the surface rods which run horizontally in every direction in the oil-fields. When it is desired to raise the derrick, the truck is placed with its rear end over the spot where the derrick is to stand. A strong pull backwardly upon a rope secured to the top of the derrick, the guy-rope being paid out, will swing the derrick upon the pivots 2 into vertical position, the braces 5 are pulled outwardly, the jointed braces 6 drop into horizontal position, and the top being suitably guyed the device is ready for use.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a derrick, a truck, a horizontal frame mounted thereon, side pieces for the frame which side pieces project horizontally rearwardly beyond the truck, derrick-masts, pivotal connections between the masts and the rear ends of the side pieces of the frame, the distance of the pivot-points from the bottom of the masts being such that when the masts are swung upon their pivots in a vertical plane into upright position the bottom of the masts will touch the ground, combined with braces pivotally connected with the masts near their upper and lower ends, the arrangement of the masts and braces being such that they may be folded horizontally upon the truck into parallel relation with each other.

2. In a derrick, a truck, a horizontal frame mounted thereon, derrick-masts, pivotal connections between the rear ends of the side pieces of the frame and the masts, braces pivotally secured to the masts near their top, and pieces adapted to fold into parallel relation and which are pivotally connected with said masts and with said braces.

3. In a derrick, a truck, a frame mounted thereon having side pieces which project rearwardly, a shaft journaled in said rearwardly-projecting ends, derrick-masts pivotally mounted on said shaft, and a drum mounted upon said shaft between said masts.

4. In a derrick, a truck, a frame mounted thereon and having rearwardly-projecting side pieces, a shaft mounted and journaled in said projecting ends of the side pieces, derrick-masts pivotally mounted upon said shaft, a drum journaled upon said shaft between said masts, braces pivotally connected with the masts near their top and pieces adapted to fold in parallel relation and which are pivotally connected with said masts and with said braces at bottom.

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

ERVIN E. WEAVER.

Witnesses:
F. M. DOTSON,
L. E. BROWN.