

L. J. McKINNEY.  
 DEVICE FOR PULLING OIL WELLS.  
 APPLICATION FILED JUNE 13, 1908.

920,615.

Patented May 4, 1909.

4 SHEETS—SHEET 1.

Fig. 1.

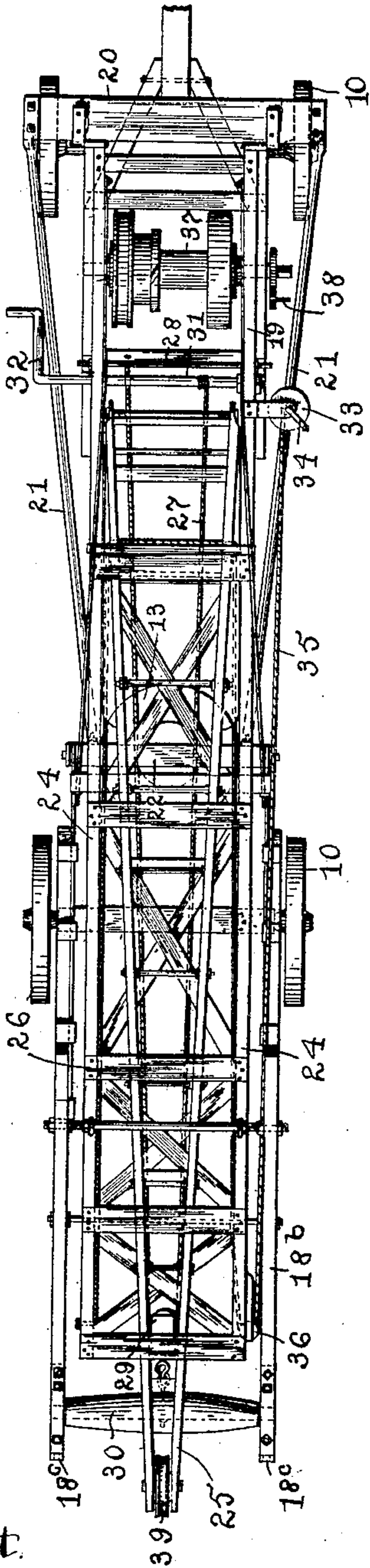
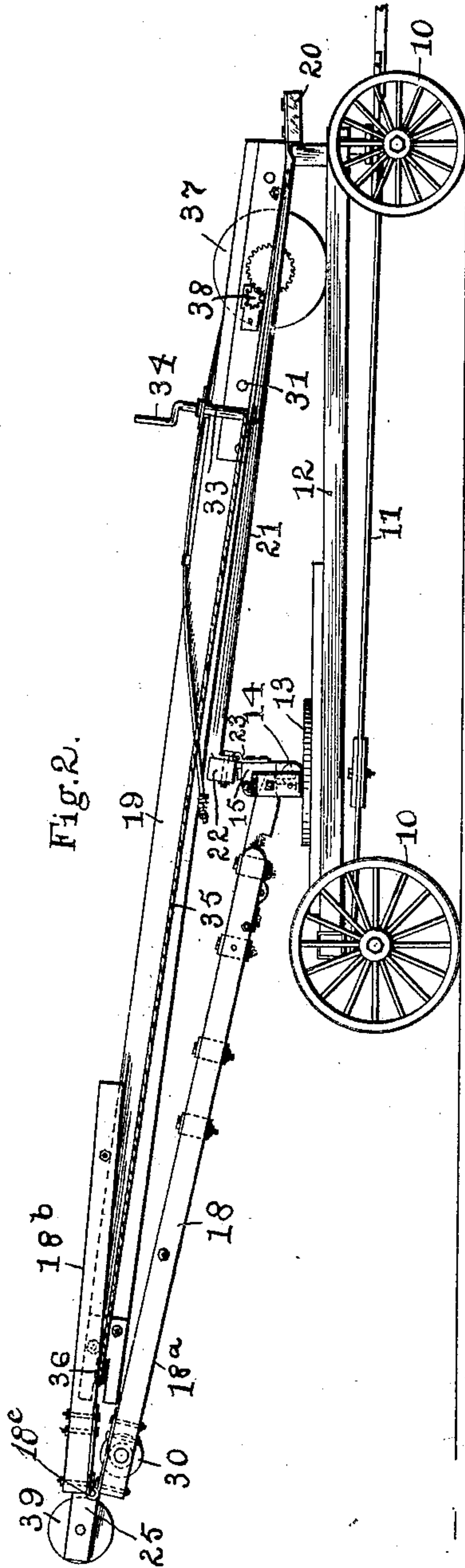


Fig. 2.



Attest.

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By Spear Middleton Donaldson & Spear

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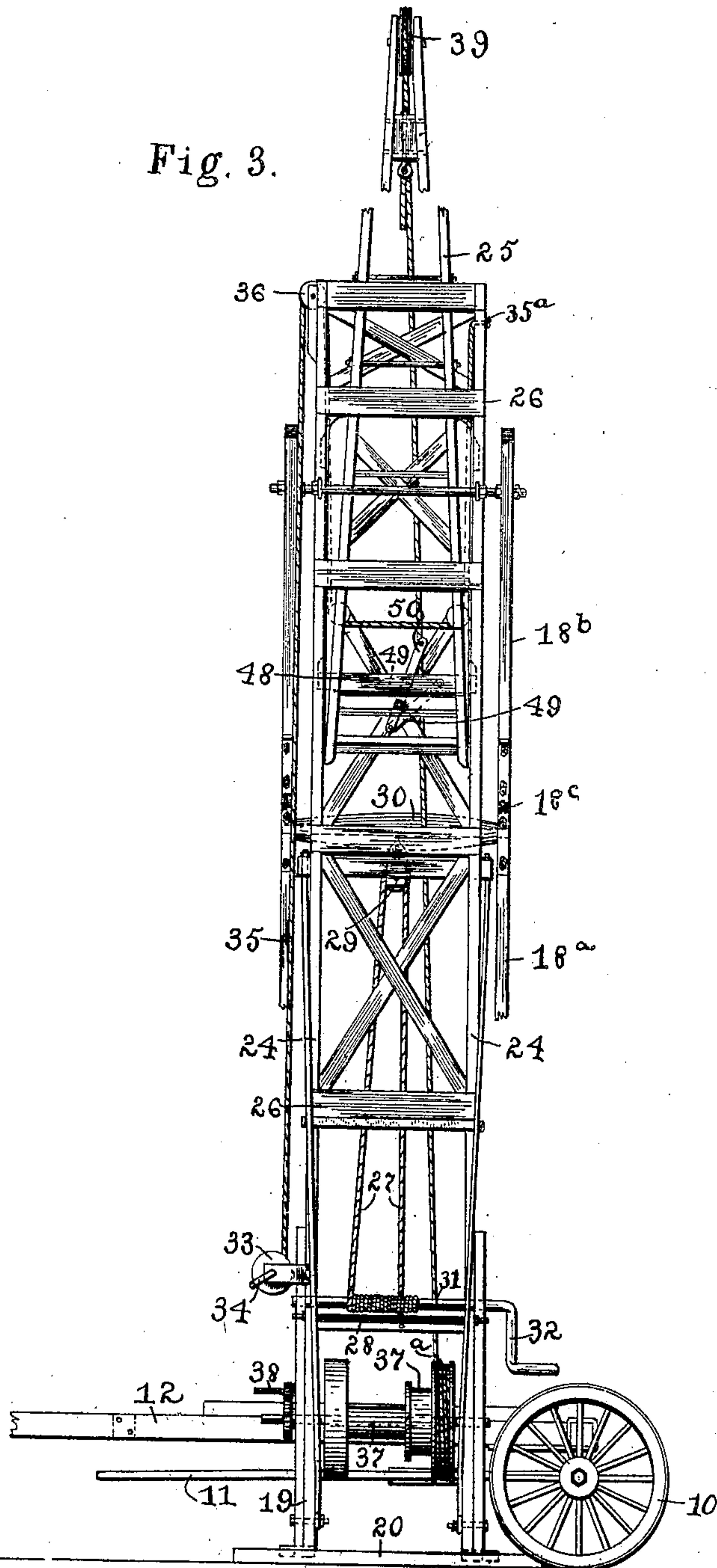
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Fig. 3.



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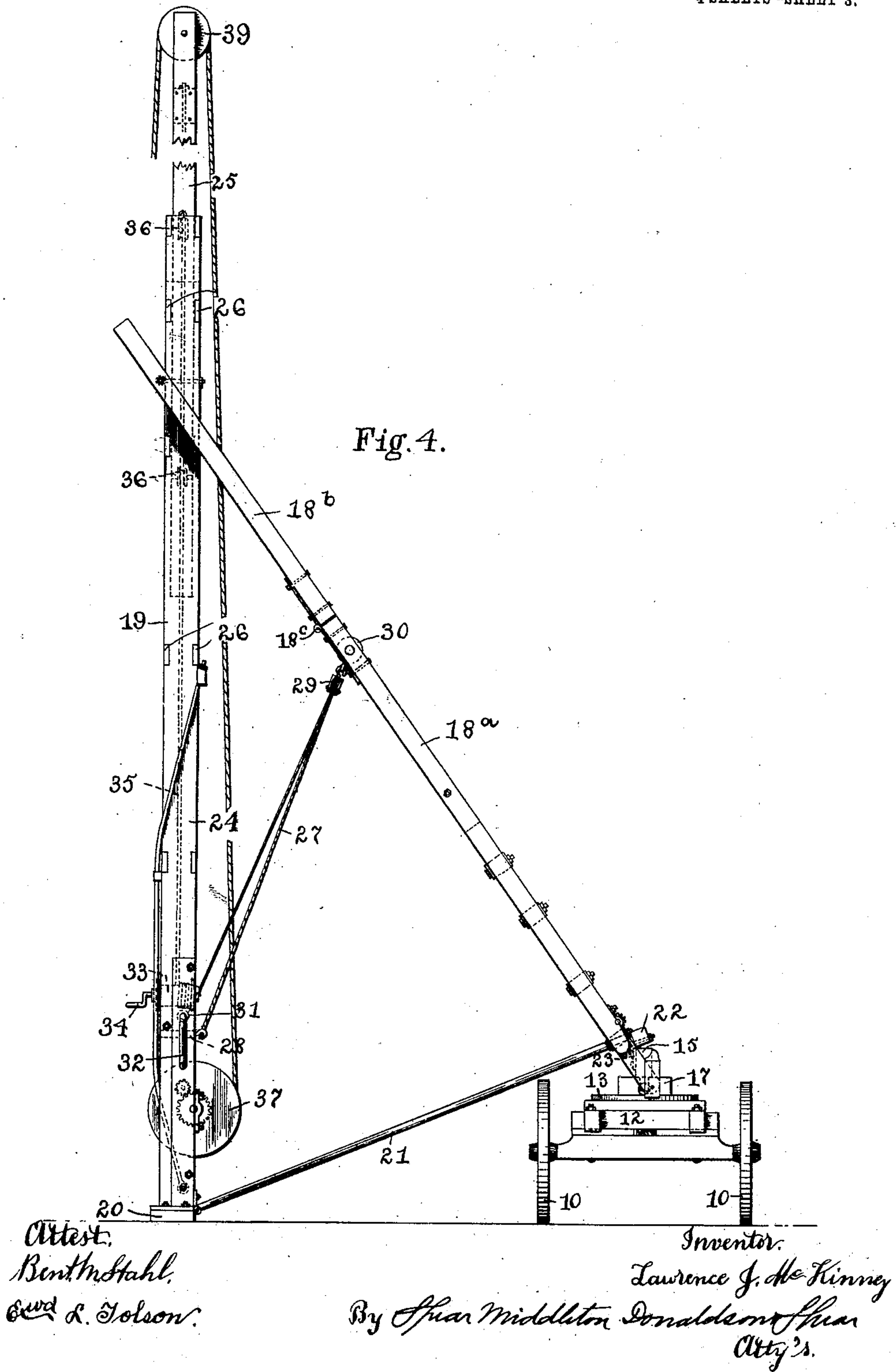
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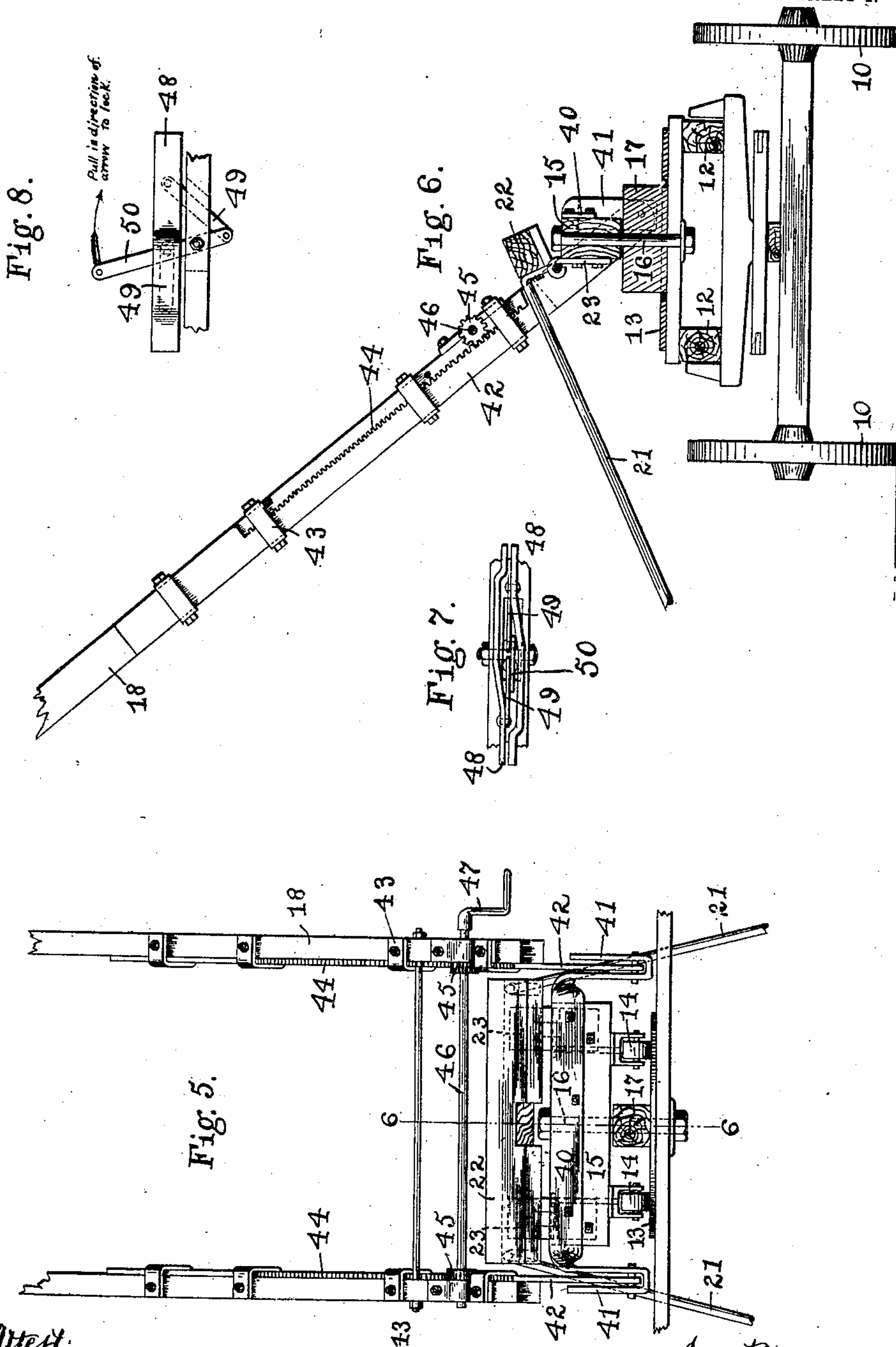


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4 SHEETS—SHEET 4.



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Inventor:  
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# UNITED STATES PATENT OFFICE.

LAWRENCE JEFFERSON McKINNEY, OF PRAIRIE DEPOT, OHIO.

## DEVICE FOR PULLING OIL-WELLS.

No. 920,615.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed June 13, 1908. Serial No. 438,442.

*To all whom it may concern:*

Be it known that I, LAWRENCE J. McKINNEY, a citizen of the United States, residing at Prairie Depot, Ohio, have invented certain new and useful Improvements in Devices for Pulling Oil-Wells, of which the following is a specification.

My said invention relates to improvements in a device for pulling the tubing rods and casing from oil wells.

Among the objects of the invention are to provide an apparatus which may be readily transferred from well to well, and which, when in proximity to the well may be readily raised into operating position and adjusted to bring the pulling parts in exact relation to the well to enable the tubes and other parts to be withdrawn easily and with a minimum strain upon the various parts of the apparatus.

I have also aimed to improve the device in various minor features with a view to simplicity, economy and efficiency.

With these various objects in view, the invention comprises the construction and arrangement of parts hereinafter described and particularly set forth in the appended claims.

An embodiment of the invention is illustrated in the accompanying drawings, in which,—

Figure 1 is a plan view of my improved device. Fig. 2 is a side elevation, both of these figures showing the apparatus folded, or with the parts in the position assumed when it is being moved from one well to another. Fig. 3 is an elevation showing the parts in the position assumed when set in proximity to an oil well in readiness for pulling the same, a part at the upper end being broken away. Fig. 4 is a similar view at right angles to Fig. 3. Fig. 5 is an enlarged view showing the turn table and the parts in proximity thereto. Fig. 6 is a section on line 6—6 of Fig. 5. Figs. 7 and 8 are detailed views of a locking mechanism for locking the telescoping part of the derrick in its elevated position.

Referring by reference characters to these various figures, the numerals 10 designate the wheels of a suitable transporting truck having the ordinary, or any desired running gear or connections 11 and supporting frame 12. Upon the rear portion of this supporting frame is mounted a turn table or plate

13, upon which travel rollers 14 which are connected to and bear the weight of a cross bar or member 15, to which the lower end of what is known as the gin pole is secured, in the manner hereinafter described. The block or member 15 is pivotally connected to the truck by a king bolt 16, which passes through a supporting block 17 and the platform of the truck, as shown more clearly in Figs. 5 and 6. The gin pole is indicated at 18 and the derrick at 19, and the latter is hinged at its lower end to a cross bar 20. This cross bar is connected by side connecting or brace rods 21 with a cross bar 22, which is connected by means of hinges 23 with the cross bar or member 15 upon which the gin pole is mounted, so that the lower ends of the gin pole and derrick are connected directly with each other so as to be held always the same distance apart. The derrick comprises two telescoping sections, each of which is preferably composed of side bars connected by cross or bracing members. In the lower or main portion of the derrick, the side bars 24 are parallel and are constructed and adapted to serve as guides for the upper telescoping section 25, so as to permit the upper section to be slid longitudinally of the lower, while at the same time it is held firmly in alignment therewith. I prefer to secure this guiding action by connecting the side bars 24 by means of parallel bars 26 with a space between them in which the telescoping section slides. The gin pole is likewise composed of two parts 18<sup>a</sup> and 18<sup>b</sup>, each of which is composed of side bars suitably connected and braced by cross members, the two parts being connected by hinges 18<sup>c</sup>. The lower extremity of the part 18<sup>a</sup> being pivotally supported upon the turn table, as hereinbefore indicated, and the upper extremity of the upper part being pivotally connected to the upper end of the main portion of the derrick, it will be seen that the gin pole serves both the purpose of raising the derrick to the proper position and of holding and bracing it in this position during the pulling operation. This action is effected by means of a rope or cable 27, one end of which is made fast to the cross bar 28 near the lower end of the derrick from which point the cable passes around a pulley 29 connected to a cross bar 30 near the upper end of the lower portion of the gin pole, from which point the cable passes back to and around a shaft or drum 31, which is



provided with a suitable operating handle 32. Supposing the parts to be in the position shown in Figs. 1 and 2, it will be readily seen that by turning the handle 32 and winding  
 5 the cable 27 upon the shaft 31, the lower section of the gin pole will be raised, thereby lifting the derrick into an elevated position.

It will be understood that before raising the derrick the truck with the parts in the  
 10 position shown in Figs. 1 and 2 will have been driven into proximity to the oil well from which the tube or other parts are to be pulled and the cross bar 20 will have been raised and swung around into a position at  
 15 an angle to the truck, depending upon the position of the oil wagon with relation to the oil well and the character of the ground, such an angular position being shown for example in Fig. 4 in which the bar 20 is shown  
 20 as resting upon the surface of the ground. Thereafter, the shaft 31 is operated to draw upon the cable 27 and elevate the derrick into either an inclined or vertical position, according to the circumstances of the case.  
 25 Then by the rotation of a drum 33 provided with a crank handle 34, a cable 35 is wound up on said drum, and as this cable passes up over a pulley 36 and downward around idle pulleys on the lower end of the telescoping  
 30 section of the derrick and then upward to the upper end of the lower section where it is connected as shown at 35<sup>a</sup>, it will be seen that the telescoping section of the derrick may be extended to any desired degree. In order to  
 35 accomplish the pulling of the tube, casings, etc. from the well, a large drum 37 is provided journaled between the side bars of the main portion of the derrick near the lower end thereof which is preferably operated  
 40 through a reducing gear from a shaft 38, the extremity of which is squared for the reception of a removable handle. From this drum the pulling rope passes upward and over a pulley 39 at the extremity of the telescoping  
 45 section of the derrick from whence it passes downward for connection with the tubing or casing and in the manner well understood by those familiar with the art. If desired, the drum 37 may have portions of different di-  
 50 ameter upon which the cable may be wound according to the amount of power or speed of raising of the casings desired and as circumstances may require such different sized portions being clearly shown at 37<sup>a</sup>, in Fig. 3.  
 55 It is extremely desirable in a device of this character to have as large a range of adjustment as possible, so that after the derrick has been raised and the pulling rope attached to the tubing or casing of the well,  
 60 the pulley at the upper end of the derrick may be brought into a position directly vertical above the oil well in order to avoid binding of the rope or casing and unnecessary strain upon the parts. This is rendered  
 65 doubly possible by reason of the ability to

swing the bar 20 around in relation to the truck by the possibility of changing the inclination of the derrick and the use of the hinged gin pole hereinbefore described. I have provided for a still further adjustment  
 70 by the manner in which I connect the lower portion of the gin pole with the cross bar or member which is rotatably mounted upon the turn table. Referring more in detail  
 75 to this construction, it will be seen that I securely bolt to the cross bar 15 a metallic plate 40 which has its ends bent downwardly and doubled back upon themselves to form recessed or bifurcated portions 41, in which  
 80 are pivotally secured metallic bars 42. These bars pass upward alongside of the bars of the gin pole to which they are slidably connected by clips 43. One edge of each bar is  
 85 formed in the shape of a toothed rack, as clearly shown in Figs. 5 and 6, these racks which are numbered 44 being engaged by  
 90 pinions 45 carried upon a shaft 46 designed to be operated by a crank handle 47. By the use of this rack and gear connection the lower section of the gin pole may be  
 95 raised or lowered upon the bars 42 and the utmost nicety of adjustment secured, as circumstances may require.

I have provided a very simple locking means for locking the upper section of the  
 100 derrick in its elevated position so as to relieve strain upon the cable, this locking means being shown in detail in Figs. 7 and 8. It comprises a pair of sliding locking bolts 48, which are slidably carried by the  
 105 lower part of the upper section and designed to project into recesses in the upper portions of the bars of the lower section. These bolts are connected by links 49 to an operating lever 50, to which may be con-  
 110 nected a suitable operating cord, whereby it may be operated from the ground, if desired.

Having described my invention, what I claim is:

1. In an apparatus of the class described, a suitable supporting truck, a derrick having its lower end adapted to rest on the ground, connecting and bracing means extending between the lower end of the derrick and the truck and a gin pole comprising two hinged sections, one of which sections is pivotally connected to the truck while the other section is pivotally connected to the derrick, substantially as described.

2. In combination, a truck having a turn table, a gin pole comprising two sections pivotally connected together, rotatable means mounted upon the turn table for connecting the lower end of the gin pole with the truck, a derrick supporting bar or member, rods connecting said member with the rotatable means on the turn table, a derrick having a pivotal connection between the



upper sections of the gin pole and the derrick, and means whereby said gin pole may be caused to elevate the derrick.

3. In combination, a truck, a turn table  
5 mounted thereon, a rotatable device carried by the turn table, a gin pole pivotally connected to said rotatable device, a derrick supporting bar or member, rods extending between said bar or member and said ro-  
10 tatable device, a derrick hinged at its lower end to said bar or member, and a pivotal connection between the upper end of the gin pole and the derrick.

4. In combination a suitable support, a  
15 gin pole comprising two parts hinged together, one of said parts being hinged to said support, a hinged derrick, a pivotal connection between the other part of the gin pole and the derrick, and means where-  
20 by the gin pole may be caused to raise the derrick.

5. In combination with a suitable support, having a turn table, a rotatable device car-  
25 ried by the turn table, a gin pole having a lower part composed of telescoping mem-

bers and having a hinged connection with said rotatable device, means for telescoping said members to secure adjustment, a sup-  
30 porting bar or member, rods connected to said supporting bar or member and having a hinged connection with said rotatable de-  
vice, a derrick pivotally mounted upon said supporting bar or member and a pivotal  
35 connection between the upper part of the gin pole and the upper portion of the derrick.

6. In a device of the character described, a derrick having two telescoping members, means for sliding said parts one upon the  
40 other, locking means comprising sliding bolts carried by one part and adapted to engage the bars of the other part, a manipu-  
lating lever and operating links connecting the lever with the bolts.

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

LAWRENCE JEFFERSON MCKINNEY.

Witnesses:

S. G. MORGAN,

HARRY L. WILLIAMSON.