April 16, 1929. C. E. WATTERS 1,709,449

WELL CASING PULLING APPARATUS

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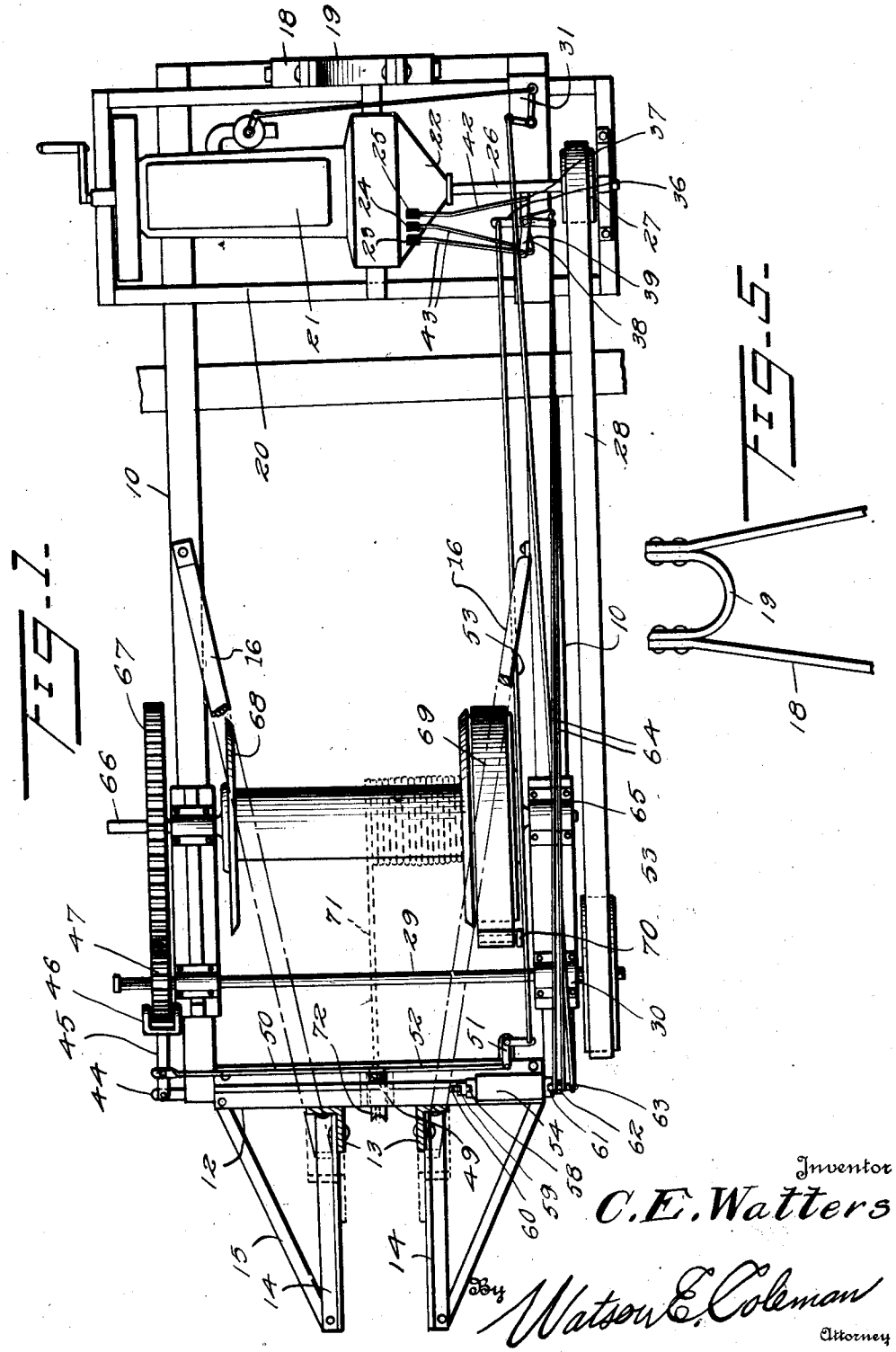


FIG. 7.

FIG. 5.

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Fig. 2.

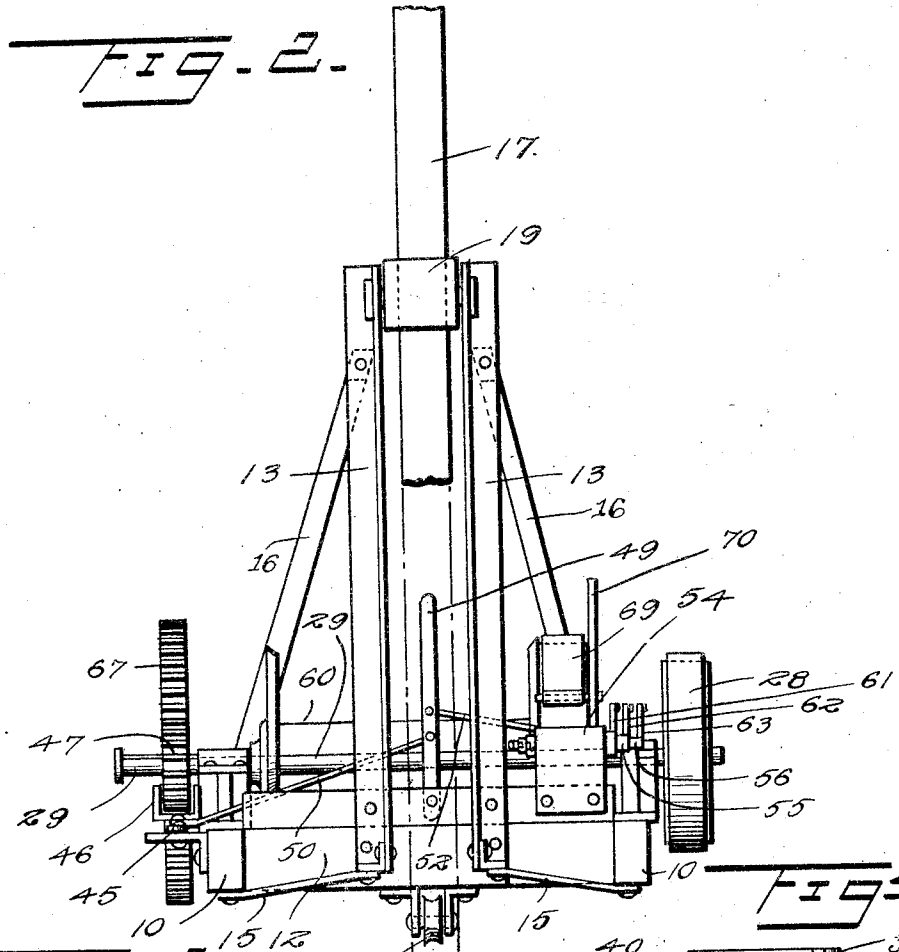


Fig. 3.

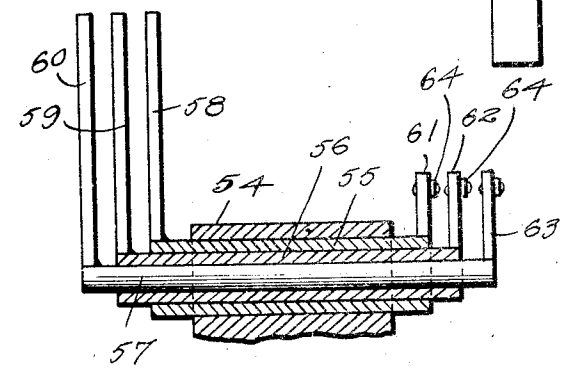
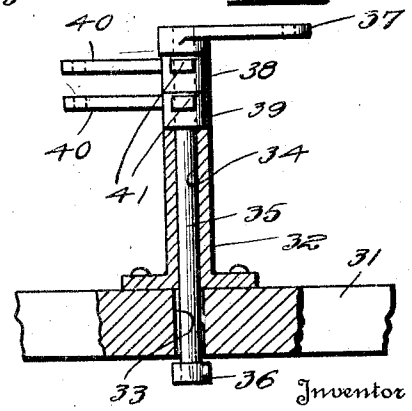


Fig. 4.



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Patented Apr. 16, 1929. 1,709,449

UNITED STATES PATENT OFFICE.

CHALMER E. WATTERS, OF PRAIRIE DEPOT, OHIO, ASSIGNOR OF ONE-THIRD TO FLOYD L. WATTERS, OF BELLEFONTAINE, OHIO, AND ONE-THIRD TO CHALMER J. STAHL, OF PRAIRIE DEPOT, OHIO.

WELL-CASING-PULLING APPARATUS.

Application filed September 25, 1926. Serial No. 137,688.

This invention relates to well casing pulling apparatus and more particularly to a structure of this character which may be manufactured as a unit applicable to the body of a suitable truck, so that it may be readily moved from place to place.

An important object of the invention is to provide a device of this character having the usual winding drum, an operating mechanism therefor consisting of a power plant of well known construction and a control mechanism whereby the winding drum may be disconnected from the power plant and at the same time a brake applied to the drive connecting the power plant and the power shaft to prevent racing of the engine of the power plant.

A further object of the invention is to provide a device of this character so constructed that the controls are all located, so that they are readily accessible to the operator without necessitaing his shifting from place to place and the operator is enabled, while controlling the machine, to remain in a position where he can closely observe progress of the work.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a plan view of well casing pulling apparatus constructed in accordance with my invention;

Figure 2 is a rear elevation thereof;

Figure 3 is a detail sectional view through the control handles;

Figure 4 is a vertical sectional view through the control connection to the pedals of the transmission;

Figure 5 is a fragmentary elevation of the mass supporting element at the front end of the frame.

Referring now more particularly to the drawings, the numeral 10 generally designates the side members of a main frame supported from transversely extending bolsters adapted to seat upon the chassis frame of an automobile truck. At their rear ends, the side members 10 are connected by a rigid cross member 12 to which are secured the lower ends of spaced angle iron standards 13. Each angle iron standard has one flange thereof secured to the end member and the remaining flange thereof directed rearwardly and at its lower end providing a means for attaching a rearwardly extending guide 14, the rear ends of these guides being connected with the ends of the adjacent side members by braces 15. The upper ends of these standards are connected to forwardly and downwardly extending braces 16. These braces diverge from one another and have their forward lower ends secured to the side members of the frame 10. Pivoted between the upper ends of the standards at a point intermediate its ends is a guy pole 17, the lower end of which is adapted to extend between the guides 14 when the pole is in vertical position.

At the forward end of the frame, the side members 10 are engaged by the lower ends of upwardly converging braces 18, the upper ends of which are secured to the arms of a U-shaped supporting bracket 19 which is adapted to receive what is the upper end of the guy pole 17 when the guy pole is in horizontal position and support the same. At the forward end of the side members, a transversely extending power plant frame 20 is secured. This frame provides a mounting for a power plant 21, such as is employed in a yell known type of light automobile and includes a transmission 22 controlled by three pedals 23, 24 and 25, hereinafter referred to as the high and low speed pedal, reverse pedal and brake pedal. The drive shaft of this power plant, indicated at 26, has secured thereto a pulley 27 which is belt-connected, as at 28, with a transversely extending shaft 29 arranged at the rear end of the machine and mounted in bearings 30 carried by the side members 10. Supported above the frame 20 and confronting the control levers of the transmission is a horizontal support 31 to which is secured a vertically extending tubular standard 32. The support 31 has an opening 33 aligning with the bore 34 of the standard and through the bore 34 and opening 33 extends a vertically directed shaft 36 which, beneath the support 31, has an arm 36 extending transversely of the main frame and above and in spaced relation to the upper end of the standard 32 is an arm 37 extending longitudinally of the main frame. Upon the shaft intermediate the arm 37 and the upper end of the standard 32 are mounted bell crank levers 38 and 39, each including an arm 40 extending longitudinally of the main frame and an arm 41 extending transversely thereof. The arm

37 is connected with the brake lever 25 by a link 42 and the arms 40 of the bell crank levers 38 and 39 are link-connected by links 43 with the high and low speed lever 23 and the reverse lever 24 respectively.

At the rear end of the main frame and at the left hand side thereof a support 44 is provided to which is pivoted a shifting fork 45, the arms 46 of which extend upon opposite sides of a pinion 47 splined to the shaft 29. A lever 49 is pivoted upon the rear cross member 12 of the frame and is operatively connected by means of a link 50 with the shifting fork 45. At the opposite side of the machine and in substantial longitudinal alignment with the support 31 is a horizontally disposed bell crank lever 51, one arm of which is link-connected at 52 with the lever 49 and the other arm of which is link-connected at 53 with the arm 36 of the shaft 35. It will be obvious that as the lever 49 is shifted to shift the pinion 47, the brake pedal 25 is operated to release or apply the brake of the transmission.

Adjacent the lever 49 is a horizontally disposed bearing 54 which is directed transversely of the main frame. Directed through this bearing are a pair of sleeves 55 and 56, the sleeve 55 rotatably fitting within the bearing and the sleeve 56 rotatably fitting within the sleeve 55. Through the sleeve 56 is directed a shaft 57, the sleeves 55, 56 and shaft 57 being stepped in length and the sleeve 55 being the shorter. To each of the sleeves 55, 56 and shaft 57 at one end of the bearing 54 are secured control handles 58, 59 and 60, while at the opposite ends thereof are secured arms 61, 62 and 63. The arms 61 and 62 are link-connected by links 64 with the arms 40 of the bell crank levers 38 and 39. The arms 63 is suitably connected with the throttle of the engine of the power plant.

Paralleling the shaft 29 and mounted in bearings 65 carried by the side members 10 is a shaft 66 having a gear 67 with which the pinion 47 meshes when the lever 49 is in such position that the brake of the power plant is released, and from which the pinion is disengaged when the brake of the power plant is applied. Secured to the shaft 66 between the side members 10 is a drum 68 having a brake 69 associated therewith, the band of this brake being controlled by a lever 70. A cable 71 wound upon this drum may be trained over a sheave carried by the upper end of the guy pole 17 or may be passed about the lower face of a pulley 72 carried by the rear cross member 12 and engaged with the lower end of the pole. When engaged in the last mentioned manner, the power plant may be utilized to hoist the pole to its operative or vertical position.

It will be obvious that by a structure of this character, the operation of removing casings or the like from oil wells is materially facilitated and the operator is enabled to closely inspect the work while it is in progress and at the same time have complete control of the machine.

It will also be obvious that the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention and I accordingly do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. In combination, a frame adapted to be applied to the body of a vehicle, a power plant secured to one end of said frame and including an engine and a transmission, the transmission including a brake, parallel shafts carried by the frame at the opposite end thereof, a winding drum and a gear carried by one of said shafts, a pinion splined to the other of said shafts and adapted to mesh with said gear in one position thereof and a single lever for simultaneously shifting said pinion to disengage the same from the gear and for applying the brake of the transmission.

2. In combination, a frame adapted to be applied to the body of a vehicle, a power plant secured to one end of said frame and including an engine and a transmission, the transmission including a brake, parallel shafts carried by the frame at the opposite end thereof, a winding drum and a gear carried by one of said shafts, a pinion splined to the other of said shafts and adapted to mesh with said gear in one position thereof, means for simultaneously shifting said pinion to disengage the same from the gear and for applying the brake of the transmission including a shifting fork engaged with the gear, a pivoted lever link-connected with the shifting fork, an operating lever for the transmission brake and a link and lever connection between the first named lever and the operating lever of the transmission brake.

3. In combination, a frame adapted to be applied to the body of a vehicle, a power plant secured to one end of said frame and including an engine and a transmission, the transmission including a brake, a winding drum carried by the opposite end of the frame and operatively connected with the power plant to be driven thereby, a single lever for simultaneously disconnecting the power plant from the winding drum and applying the brake of the engine and controls for the engine and transmission at the last named end of the frame.

In testimony whereof I hereunto affix my signature.

CHALMER E. WATTERS.