

No. 879,692.

PATENTED FEB. 18, 1908.

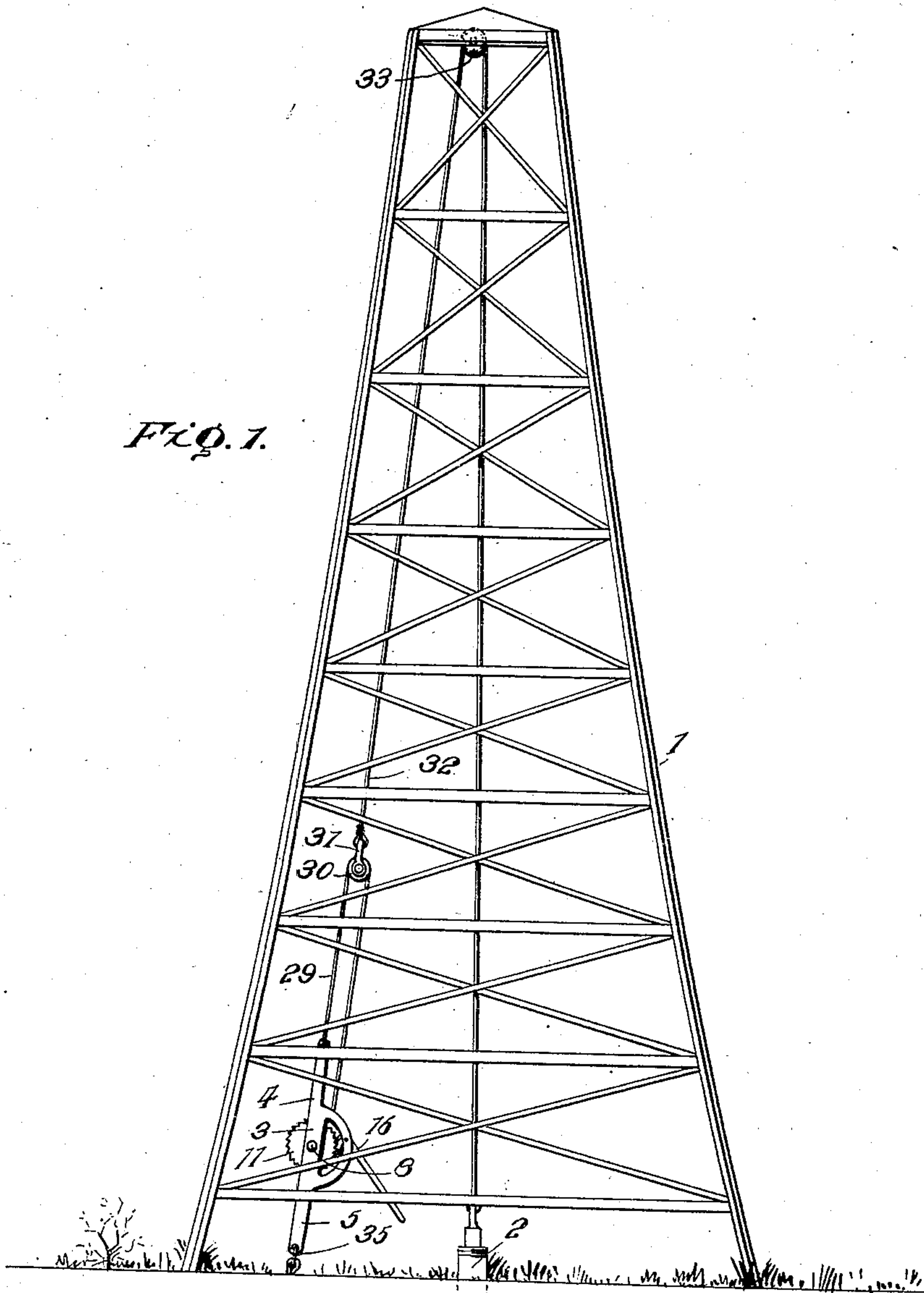
E. B. TARR.

DRAW JACK.

APPLICATION FILED APR. 2, 1906.

2 SHEETS—SHEET 1.

FIG. 1.



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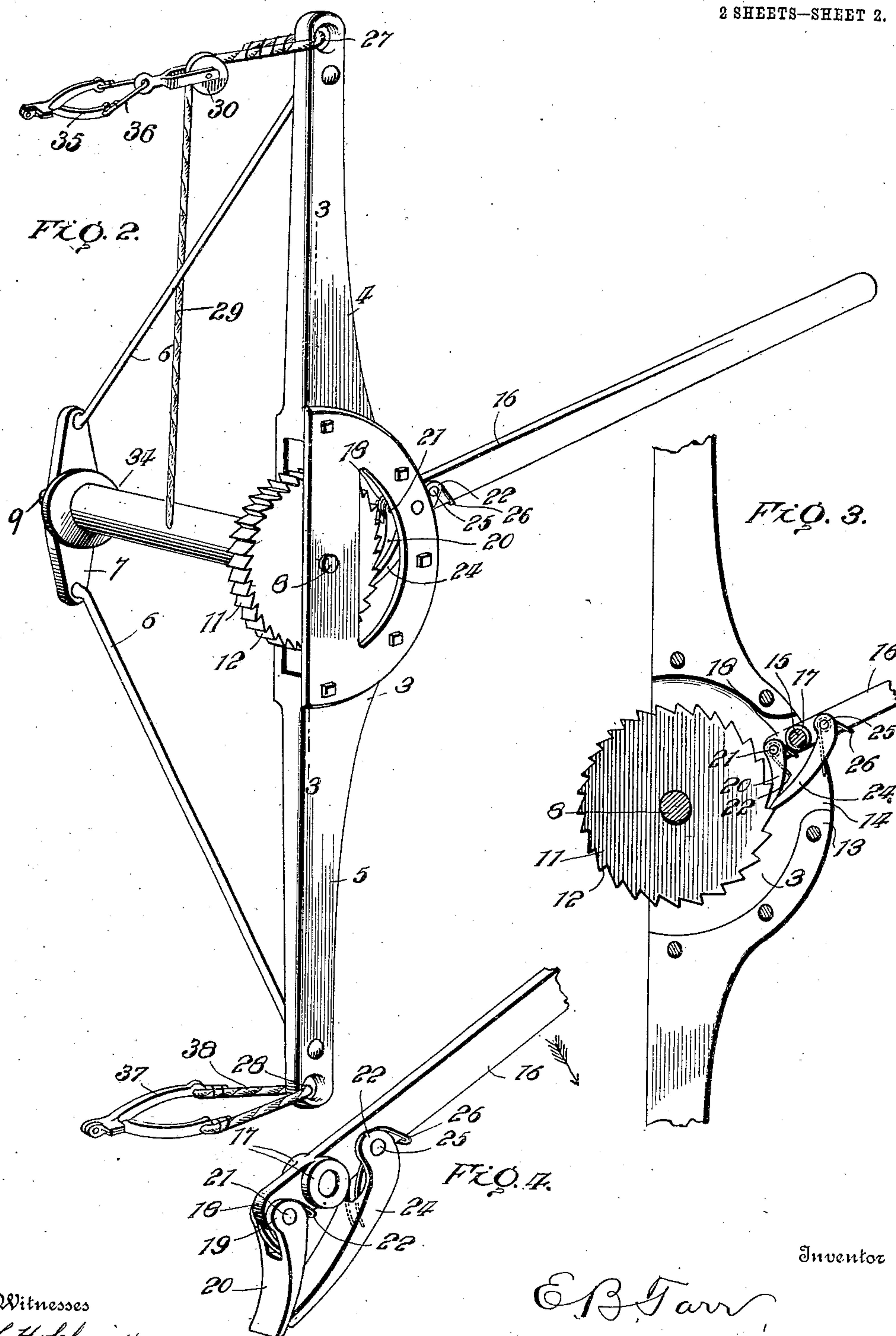
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

ELI B. TARR, OF DERRICK CITY, PENNSYLVANIA.

## DRAW-JACK.

No. 879,692.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed April 2, 1906. Serial No. 309,520.

*To all whom it may concern:*

Be it known that I, ELI B. TARR, a citizen of the United States, residing at Derrick City, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Draw-Jacks, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in draw jacks.

The object of my invention is to provide a jack of this character, which is adapted to be applied to pumping wells for raising and lowering the working valve from and into the working barrel of an oil well, or for raising the tubing for the purpose of packing the casing head.

Another object of my invention is to provide a more simple, cheap and effective device to be readily applied to derricks used in pumping wells, or as aptly used for stretching surface wires, fence wires, or telegraph or telephone wires.

In the accompanying drawings, Figure 1, is a side elevation of a pumping derrick used in oil pumps, and showing my device applied for raising the working valve or working barrel from the well. Fig. 2, is an enlarged perspective view of my improved jack. Fig. 3, is a longitudinal sectional view of Fig. 2. Fig. 4, is an enlarged perspective view of the operating lever showing the pawls attached thereto.

Referring now to the drawings, 1 represents a derrick arranged above the well 2 in the usual manner, and is of any well known form, as this forms no part of my invention, but is merely for the purpose of showing the preferred form of applying the same. It will be understood that my device can be readily used for stretching surface wires or for drawing the two ends of a wire together for repairing a broken wire, or for many other purposes.

My device consists of a housing 3 which can either be made of several parts secured together, or may be cast as desired. The said housing, at each end, is provided with the outwardly extending arms 4 and 5 which have secured thereto when the housing is made in sections, the inwardly-extending bars 6 which are provided at the center opposite the housing with a plate 7 forming a bearing for the shaft of the drum, as will be

hereinafter more fully described. When the housing is cast, all of this is cast as part thereof, and thus forms a rigid frame.

The housing, as shown, is of a semi-circular form, and extending through the lower end thereof is a shaft 8 which has its outer end 9 mounted in a bearing carried by the plate 7 carried by the bars 6, and thus the outer end of the shaft is rotatably supported in the plate while the inner end is supported by the housing. Carried by the shaft within the housing, is a ratchet disk 11 which is provided on its outer periphery with the ratchet teeth 12 by means of which the same is rotated, as will be described. One side of said ratchet disk extends considerably beyond the housing, while the opposite side extends well within the housing adjacent its upper end.

The upper edge 13 of the housing is provided with an elongated slot 14 communicating with the interior thereof adjacent the periphery of the ratchet disk. Pivotaly mounted in said recess by a pivot 15 is the operating lever 16. The said lever, as shown, is of a thickness less than the slot 14, and said lever around the pivot is provided on each side with a bushing 17 to hold the lever centrally within the said slot. The lever below the pivot 15 has an extended end 18 which lever I will now proceed to describe. The lever, as shown, is pivoted within the slot at one side of a vertical line of the pivot of the ratchet disk, and its lower end 18 passes within the bifurcated upper end 19 of a pawl 20, and a pivot 21 passes therethrough for pivotaly connecting the pawl to the lower end of the lever beyond its pivotal connection with the housing. The said pawl is normally held in a downward position in engagement with the ratchet disk by means of a spring 22.

The lever 16 above the pivot 15 has the bifurcated end 23 of the pawl 24 straddling the same, and pivotaly connected thereto by a pivot 25, and said pawl 24 is of a length greater than the pawl 20, so that it will engage the ratchet teeth of the ratchet disk. The said pawl 24 is also normally held downward in engagement with the disk by a spring 26, and thus the two pawls are at all times engaging the disk. As shown, one pawl is below and the other above the pivotal connection of the lever with the housing, and one is longer than the other, so that they



are both always held in engagement with the ratchet disk. It will also be seen that the movement of the lever in the direction indicated in the arrow, shown in Fig. 4, that the lower or short pawl is in engagement with the ratchet teeth and rotating disk, while the longer pawl 24 is moving over the teeth to take a hold on the teeth. The backward movement of the lever causes said pawl 24 to engage the teeth and rotate the disk while the pawl 20 is riding over the teeth to its position to again rotate the disk upon the changing of the direction of the movement of the lever. Thus it will be seen that the movement of the lever in both directions causes the disk to be rotated, and allows the same to be more rapidly rotated than if a single pawl was used, and yet at the same time absolutely preventing any backward movement of the ratchet disk.

The arm 5 at its outer end is provided with an opening 28 through which passes a securing means 35 by means of which the jack is secured to the ground when used in connection with an oil well pump. The arm 4 at its outer end is provided with an opening 27 through and by which a cable 29 is fastened to the arm. The shaft 8 intermediate the housing and the brace rods has keyed thereon a spool 34. The said cable passes around a block 30 and extends downwardly and has its end secured to the spool 34, and upon which the cable is wound. The eye 31 carried by the block 30 carries means by which it is secured to the cable 32 which passes upwardly over the block 33 and enters the well, and to which the working valve or casing heads are attached, and thus by the movement of the lever 16 the same can be raised.

When using my device as a midwire take-up, the block 30 has a cable 36 passing through the eye carried thereby and having the ends connected to the ends of the levers of the clamp 35 and tension upon the cable 36 caused the clamp 35 to tighten grip over end of the wire and the rotation of the reel 34 draws the end of the wire inwardly. The eye 28 has the cable 38 passing therethrough, and has its ends connected to the ends of the levers of the clamp 37, and the action of the clamp brings the same as the clamp 35. The other end of the wire is clamped by the clamp 37. These clamps, as will be understood are attached to the broken wire some distance from the ends and the rotation of the wire draws the clamps towards each other so that the ends of the wire may be brought together, and spliced in any desired manner, by tools designed for the purpose.

While I have shown and described but two places of application of the apparatus, it will be understood that there are various other places where the device is adapted to be used.

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

1. A device of the character described, comprising a housing, a shaft mounted within the housing and extending beyond one face thereof, brace rods carried by the housing a plate carried by the brace rods and in which the outer end of said shaft is mounted, a ratchet disk mounted on the shaft within the housing and double pawls carried by a lever for rotating said ratchet disk.

2. A device of the character described, comprising a housing, a shaft mounted within the housing and extending beyond one face thereof, brace rods carried by the housing a plate carried by the brace rods and in which the outer end of said shaft is mounted, a ratchet disk carried by the shaft within the housing, a lever pivoted within the housing and having double pawls operating the ratchet disk, a cable attached to the shaft between the brace rods and the housing, and passing around a block and secured to the one end of the housing, a clamp carried by the block and means carried by the opposite end of the housing for attaching it at the desired point.

3. A device of the character described, comprising a housing a shaft mounted therein and extending through one wall of the housing, arms carried by the housing a plate supported by the arms and in which is rotatably mounted the outer end of said shaft, a ratchet disk carried by said shaft within the housing, the upper end of the housing having a slot therein, a lever pivoted within said slot intermediate its end, and a spring-pressed pawl carried by the lever on each side of its pivotal connection and engaging said ratchet disk, whereby the ratchet disk is rotated on both the forward and backward movement of the lever.

4. A device of the character described, comprising a housing, a shaft mounted therein and extending through one wall of the housing, arms carried by the housing a plate supported by the arms and in which is rotatably mounted the outer end of the shaft, a ratchet disk carried by the shaft within the housing, the upper end of the housing having a slot therein, a lever pivoted within said slot and of a thickness less than the width of the slot, a bushing carried by the lever for holding it in the center of the slot, pawls having bifurcated ends and straddling the lever above and below the pivotal connection with the housing, pivots securing the pawls to the lever, and springs carried by the levers for normally holding the pawls in engagement with the ratchet disk.

5. A device of the character described, comprising a housing, a shaft mounted therein and extending through one side of the housing, arms carried by the end of the hous-



ing, brace rods carried by the ends of the arms and extending to the end of the shaft a plate carried by the brace rods and in which the shaft is rotatably mounted, a ratchet disk carried by the shaft within the housing, and a lever carrying pawls engaging the disk for rotating the same.

6. A device of the character described, comprising a housing, a shaft mounted therein and extending through one side of the housing, arms rigid with the ends of the housing, a plate loosely mounted upon the end of the shaft, brace rods connected to said plate and the ends of the arm, a ratchet disk carried by the shaft within the housing, a lever carrying pawls for rotating said disk, a clamp carried by the outer end of one of said arms, a cable attached to the opposite arm, and passing through a block and having the other end secured to the shaft between the brace rods and the housing.

7. A device of the character described, comprising a housing, a shaft mounted there-

in, and extending through one wall of the housing, arms carried by the housing, a plate supported by the arms and in which is rotatably mounted the outer end of the shaft, a ratchet disk carried by the shaft within the housing, the upper end of the housing having a slot therein, a lever pivoted within said slot and of a thickness less than the width of the slot, a bushing carried by the lever for holding it in the center of said slot, pawls having bifurcated ends and straddling the lever on each side of the pivotal connection with the housing, and looped springs straddling the lever and passing through the bifurcated ends of the pawls and normally holding them in engagement with the ratchet disk.

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

ELI B. TARR.

Witnesses:

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E. D. LUDWIG.