

S. V. PERRY.
PUMP.

APPLICATION FILED NOV. 7, 1916.

1,260,036.

Patented Mar. 19, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

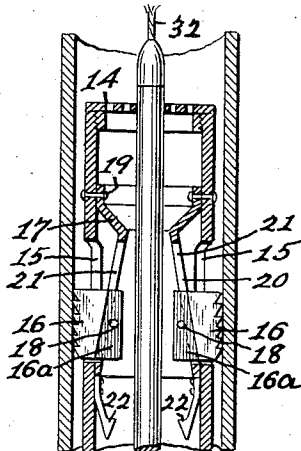


Fig. 6.

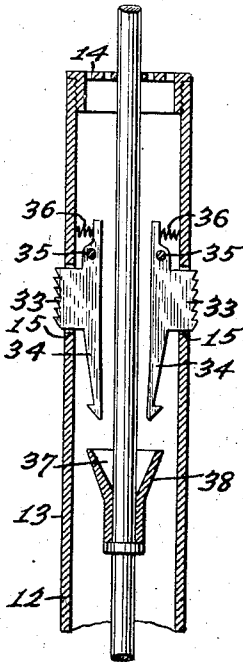


Fig. 4.

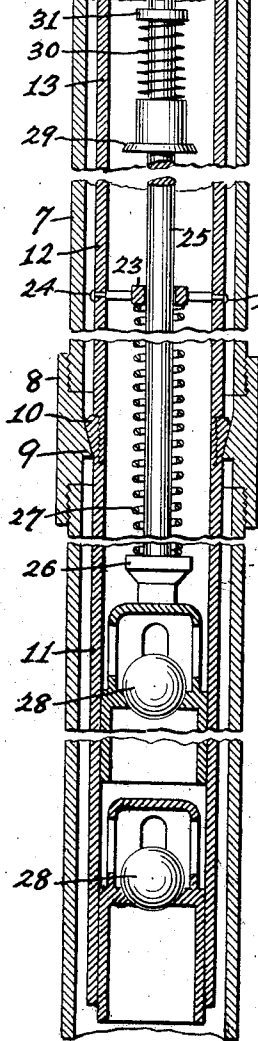
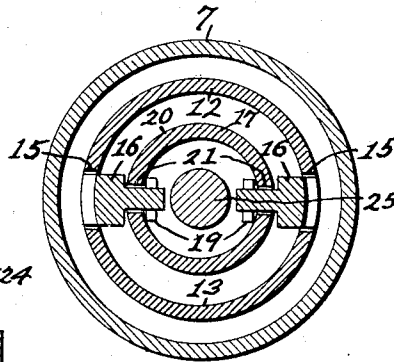
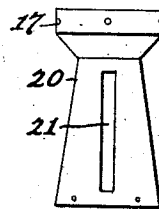


Fig. 5.



WITNESSES
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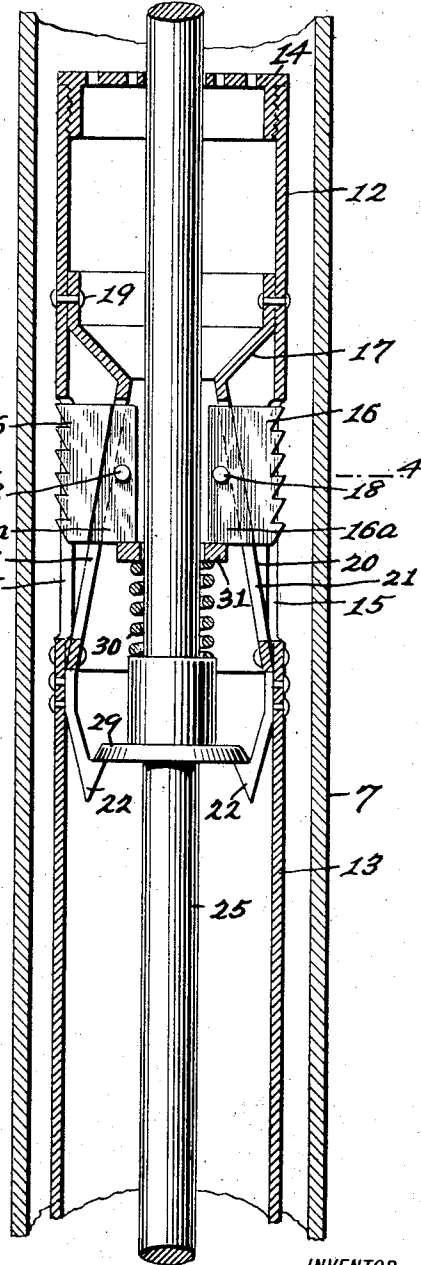
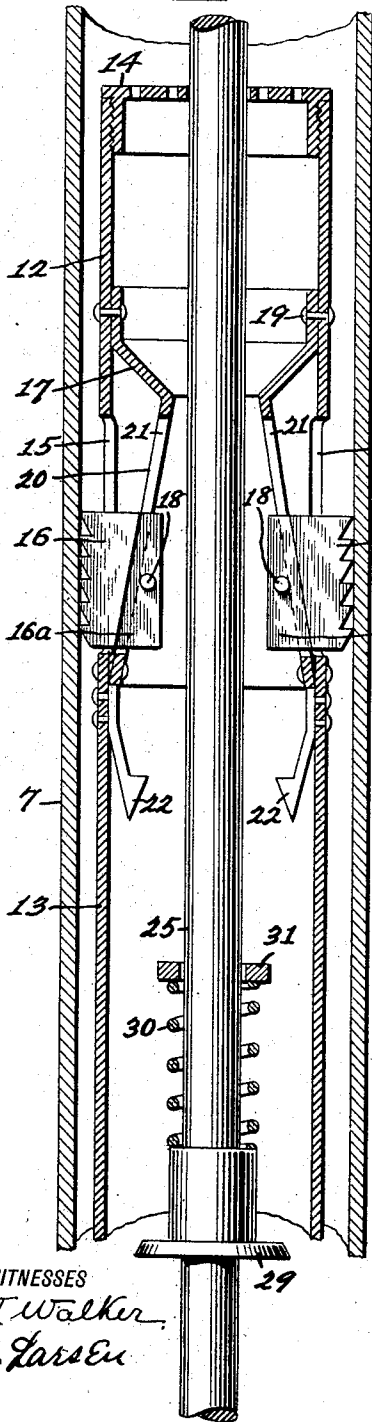
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2 SHEETS—SHEET 2.

Fig. 2.

Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

SHERMAN V. PERRY, OF ELECTRA, TEXAS.

PUMP.

1,260,036.

Specification of Letters Patent.

Patented Mar. 19, 1918.

Application filed November 7, 1916; Serial No. 129,987.

To all whom it may concern:

Be it known that I, SHERMAN V. PERRY, a citizen of the United States; and a resident of Electra, in the county of Wichita and State of Texas, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My invention relates to pumps, being an improvement over the form shown and described in Letters Patent of the United States No. 916,777 issued to me on the 30th day of March, 1909, and one of the main objects thereof is to provide means whereby the pump barrel may be readily disengaged from its normal positive engagement with the well tube for removal from said tube for repairs or for any other reasons by upward strain on the operating cable, rod, or equivalent, thereby overcoming the necessity for rotating the barrel as in my patented form to engage with or to be disengaged from the well tube.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which like characters refer to like parts in each of the views, and in which:—

Figure 1 is a central longitudinal section taken through a pump constructed in accordance with my invention, in normal operative position in a well tube;

Fig. 2 is an enlarged fragmentary section thereof showing the grips in engagement with the well tube;

Fig. 3 is a similar section but showing the grips released from the well tube preparatory to raising the pump barrel out of the well tube;

Fig. 4 is a section taken on the line 4—4 of Fig. 3;

Fig. 5 is a detached view of a grip carrier which I employ; and

Fig. 6 is a fragmentary view of a modification, also in central section.

Referring to the drawings, 7 represents a well tube formed of two sections joined by means of a union 8 having a downwardly and inwardly flared flange 9 therein serving as a seat for an upwardly and outwardly flared flange 10 on the lower section 11 of the pump barrel 12, the upper end of the section 11 being interiorly threaded for engagement with a screw thread on the lower end of the upper barrel section 13.

The barrel section 13 is provided with a perforated cap 14 permitting the upward

passage of the liquid being pumped but preventing the entrance of dirt into said barrel, and said barrel section 13 is vertically slotted at 15, in diametrically opposed positions, through which toothed grips 16 extend and in which said grips are slidable, said grips having inner reduced portions 16^a slidably held in suitable slots in a grip carrier 17 by means of pins 18 or the like.

The carrier 17 is secured with the barrel section 13, as by bolts 19, and is contracted adjacent its upper end to form a downwardly flared member 20 in which the slots 21 are formed, and it will be seen that the raising of the grips from the positions shown in Figs. 1 and 2 moves the same inwardly away from the well tube 7 as clearly shown in Fig. 3, and it will be noted that the teeth on said grips are upwardly directed to resist upward barrel movement in the well tube when said grips are engaged with said well tube.

The barrel section 13 is provided with spring hooks 22 beneath the grip carrier 17 and with a collar 23 held in place by means of screws 24 and serving as a guide for the pump rod 25 which carries a flange 26 upon which rests one end of a coil spring 27 and the other end of which bears upon the under side of the collar 23, the tendency of said spring 27 being to resist upward pump rod movement and return the same to lowermost position if raised therefrom in the operation of the pump.

The lower end of the rod 25 carries a piston which fits the interior of the barrel closely and is equipped with a valve shown as of the ball type at 28, but which may be of any type, and said rod 25 is provided with a fixed flange 29 having a beveled edge and upon which rests a coil spring 30 supporting a ring 31 slidably mounted on the rod 25, the diameter of the said ring being such as to pass between the hooks 22 whereas the beveled flange 29 is of a diameter greater than the normal distance between said hooks.

The rod 25 is connected with a cable 32, or the equivalent, leading upwardly out of the well tube whereby said rod may be raised for pumping, being afterward forced downwardly by means of the relatively strong spring 27, and vertical movement of the barrel is prevented because of the fixed seat 9 in the well tube and of the grips 16 during the pumping operation, and the

stroke of said pump rod is not of sufficient length to carry the ring 31 up to the grips 16.

When, for any reason, it is desired to withdraw the barrel from the well tube, all that is necessary is to draw the pump rod 25 upwardly beyond its normal limit of movement, thereby causing the ring 31 to raise the grips 16 upwardly out of well tube engagement and carrying the beveled flange 29 past the spring hooks 22 which yielded to permit such passage, thereby locking the grips 16 in the positions shown in Fig. 3 and permitting ready raising of the barrel out of the well tube.

When the barrel is returned to operative position the beveled flange 29 is released from the hooks 22 and the grips 16 offer no obstruction to the downward movement of the barrel into the well tube, said grips automatically biting into the well tube to prevent upward barrel movement in the pumping operation, when resumed.

The form shown in Fig. 6 is to all intents similar to that already described, toothed grips 33 engaging with the well tube and being carried by levers 34 pivotally mounted in the barrel at 35 and normally forced into well tube engagement by springs 36, the lower ends of said levers 34 being beveled and adapted to be forced toward each other by the conical recess 37 in an inverted bell 38 secured to the pump rod 25, the grips 33 being spring actuated whereas the grips 16 are gravity actuated, but their functions are identical.

My invention, in either form, is very simple and readily adapted to existing pumping systems, and I reserve the right to make such changes as come within the scope of the appended claims.

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

1. A pump for use in a well tube, comprising a barrel, a valved piston, a piston rod, a toothed locking member normally held in operative position by gravity, and means for moving the locking members into inoperative position and locking the piston rod to the barrel.

2. A pump for use in a well tube, comprising a barrel, a valved piston, a piston rod, sliding toothed grips carried by the barrel, and coacting means on the barrel and piston rod for locking the piston rod to the barrel, and means for moving the grips into inop-

erative position prior to locking the piston rod and barrel together.

3. A pump, for use in a well tube, comprising a barrel, a vertically slotted carrier in said barrel having a downwardly flared portion, toothed grips slidably arranged in said slots and movable into well tube engagement by said flared carrier, to prevent upward barrel movement in the well tube, a valved piston, a rod therefor, and means on said rod for raising said grips out of tube engagement and for withdrawing said barrel from the tube.

4. A pump, for use in a well tube, comprising a barrel, a vertically slotted carrier therein having a downwardly flared portion, toothed grips slidably arranged in said slots and movable into well tube engagement by said flared carrier, to prevent upward barrel movement in the tube, a valved piston, a rod therefor, means on said rod for raising said grips out of tube engagement, and means for locking said rod to said barrel with said grips out of tube engagement to permit withdrawal of said barrel from the tube.

5. The combination with a well tube provided with an internal flange intermediate its length, of a pump comprising a barrel having an external flange resting on said tube flange, toothed grips carried by said barrel, means for forcing the same into tube engagement to prevent upward barrel movement, a valved piston, a rod therefor, means for locking the piston rod to the barrel and means on said rod for releasing said grips from said tube.

6. A pump for use in a well tube, comprising a slotted barrel, a valved piston, a piston rod, sliding gripping members carried by the barrel and working in the slots thereof, each gripping member being provided with a plurality of teeth for engaging the smooth inner face of the well tube, and means on the piston rod for engaging the said gripping members to release them.

7. A pump for use in a well tube, comprising a barrel, a valved piston, a piston rod, toothed gripping members carried by the barrel, hooks on the barrel below the gripping members, a fixed collar on the piston rod for engagement with the said hooks, and a sliding and spring pressed collar on the piston rod above the fixed collar for operating the gripping members to move them into inoperative position.

SHERMAN V. PERRY.