S. PERRY.

PUMP.

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916,777.

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Fig. 1.

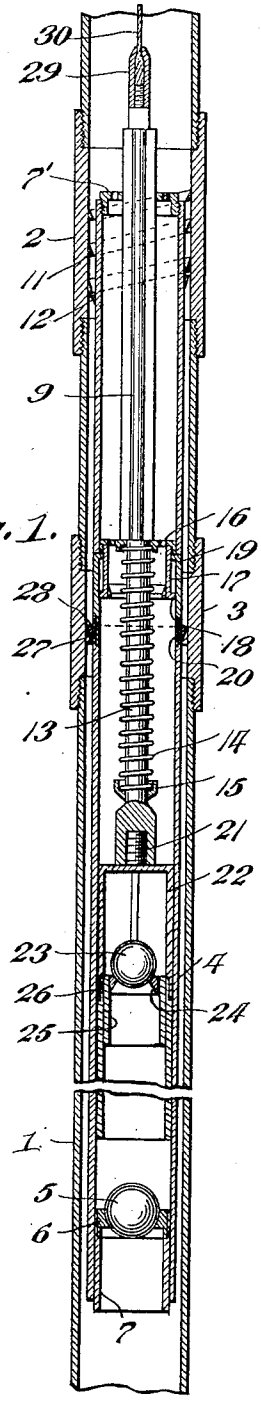


Fig. 2.

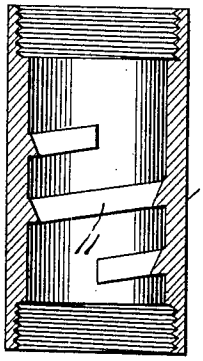


Fig. 3.

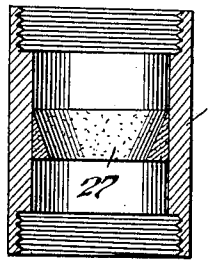
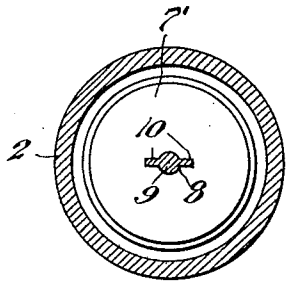


Fig. 4.



Witnesses

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PUMP.

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To all whom it may concern:

Be it known that I, SHERMAN PERRY, a citizen of the United States, residing at Orcutt, in the county of Santa Barbara and State of California, have invented new and useful Improvements in Pumps, of which the following is a specification.

This invention relates to pumping outfits the object of the invention being to provide a pumping outfit in which all of the parts are readily accessible and easy of repair, the parts being so combined as to enable the operative elements to be tripped or disengaged from the well tube and withdrawn therefrom.

A further object of the invention is to construct the pumping outfit in such manner as to adapt the same for high speed work without danger of parting or breaking the rods; also to adapt old and partially worn wire lines to be used in place of employing new iron or wood rods.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a vertical longitudinal section through a portion of a well, showing the pumping outfit therein. Fig. 2 is an enlarged vertical sectional view of the upper union. Fig. 3 is a similar view of the lower union. Fig. 4 is a cross section on an enlarged scale taken above the barrel cap and through the upper union.

Referring to the drawings, 1 designates a well tube which is made up of sections which are shown as connected by an upper union 2 and a lower union 3. Within the well tube 1 is arranged a working barrel 4 which is provided with a foot valve 5 in the form of a ball movable relatively to its seat 6 which is carried by the tubular holder 7 inserted in the lower end of the working barrel as shown in Fig. 1. The upper end of the working barrel is provided with a barrel cap 7′ which is threaded into the upper end of the barrel as shown in Fig. 1 and provided with an irregular opening 8 for the reciprocatory movement of the piston rod shown at 9. The rod preferably consists of a cylindrical body portion to which the reference numeral 9 is applied and oppositely extending wings or rods 10 to prevent said rod from turning in the cap 7′, the specific shape of said rod in cross section being illustrated in Fig. 4 and the opening 8 in the cap 7′ being of corresponding shape.

The upper union 2 is provided upon the inside with a spiral thread 11 adapted to engage a corresponding thread or shoulder or plurality of shoulders 12 on the outer side of the working barrel near the top thereof as shown in Fig. 1 so that by turning the working barrel, said shoulder 12 may be moved into and out of engagement with the spiral thread 11 for the purpose of locking the working barrel and allowing the same to be turned out of the well tube or conversely locking said working barrel in its operative position by reason of the engagement between the shoulder 12 and the spiral thread 11.

The lower portion of the piston rod 9 is reduced to form a cylindrical stem 13 around which is placed a coil spring 14 the lower end of which is received in a spring seat 15 while the upper end bears against an upper spring seat 16 mounted in a limited sliding movement within the working barrel, said seat being provided with a tubular pendent extension 17 having the lower edge thereof outturned to form a circumferential flange 18 which in the upward movement of the valve rod comes in contact with an inturned flange 19 within the working barrel thereby forming a stop for the upward movement. The working barrel may be made up of any desired number of sections one of the joints between the sections being shown at 20.

The lower end of the piston rod is internally threaded to receive a threaded shank 21 on the upper end of the pump piston in the form of a valve cage 22. Within this cage is mounted a plunger valve 23 shown in the form of a ball which rests on a valve seat 24 carried by a tubular holder 25 removably inserted in the lower portion of the valve cage 22 as seen in Fig. 1. The valve cage is shown as jointed at 26 to provide two sections which are removable one from the other to give access to the valve seat and to provide for the removal of the valve 23.

The lower union 3 is provided with an interior barrel seat 27 having an inclined upper surface with which coöperates the corresponding inclined face of a barrel shoulder 28 fast on the working barrel 4. At its upper end the valve rod is provided with a socket extension 29 adapted to receive and hold the lower enlarged end of the operating wire or cable 30.

It will be understood that by twisting or turning the wire 30, the lugs or shoulders 12 on the working barrel may be disconnected from the spiral thread 11 within the upper union 2 so as to admit of the removal of the operative elements of the pump and conversely by turning the wire in the opposite direction, the lugs or shoulders 12 may be re-engaged with the spiral thread 11 thereby locking the operative elements of the pump in their working positions.

I claim:—

1. A well pumping outfit comprising a working barrel, a cap at the upper end thereof, a foot valve at the lower end thereof, a piston comprising a valve and a cage movable up and down within the working barrel, a piston rod passing through the barrel cap and engaging the same so as to turn the cap with it, a projection on the side of the working barrel, and a well tube having an internal spiral thread with which said projection is adapted to engage in the turning movement of the working barrel, substantially as described.

2. The combination with a well tube, of a working barrel mounted therein, a piston rod engaging said working barrel so as to turn therewith, and interlocking means on the well tube and working barrel adapting the working barrel to be engaged with and disengaged from the well tube to permit the withdrawal of the working barrel.

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

SHERMAN PERRY.

Witnesses:
JOSEPH E. MORRIS,
PERCIE JENKINS.