

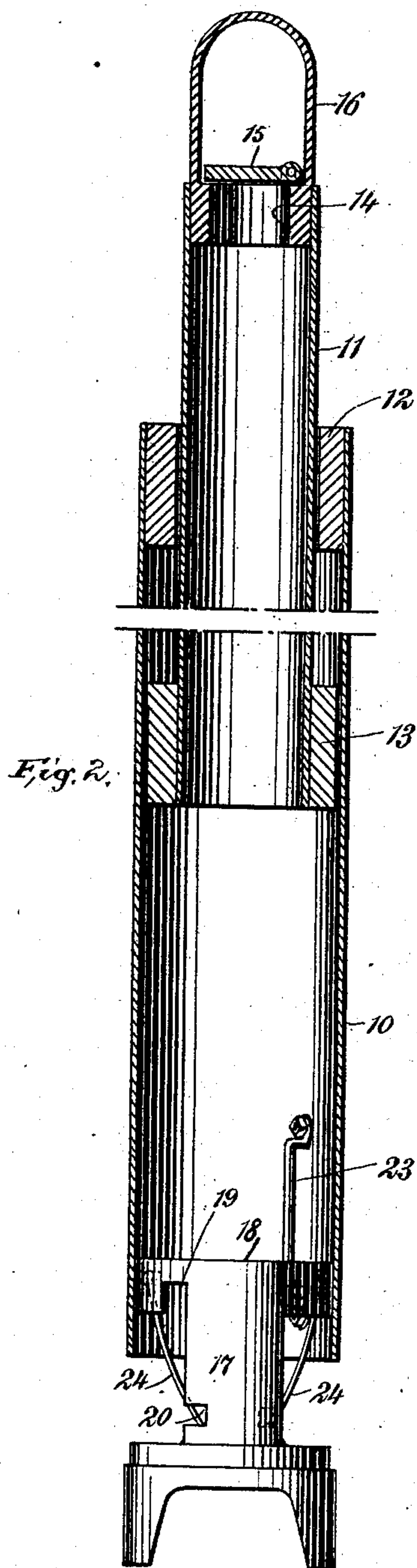
No. 717,252.

W. S. McROBERTS.
PUMP.

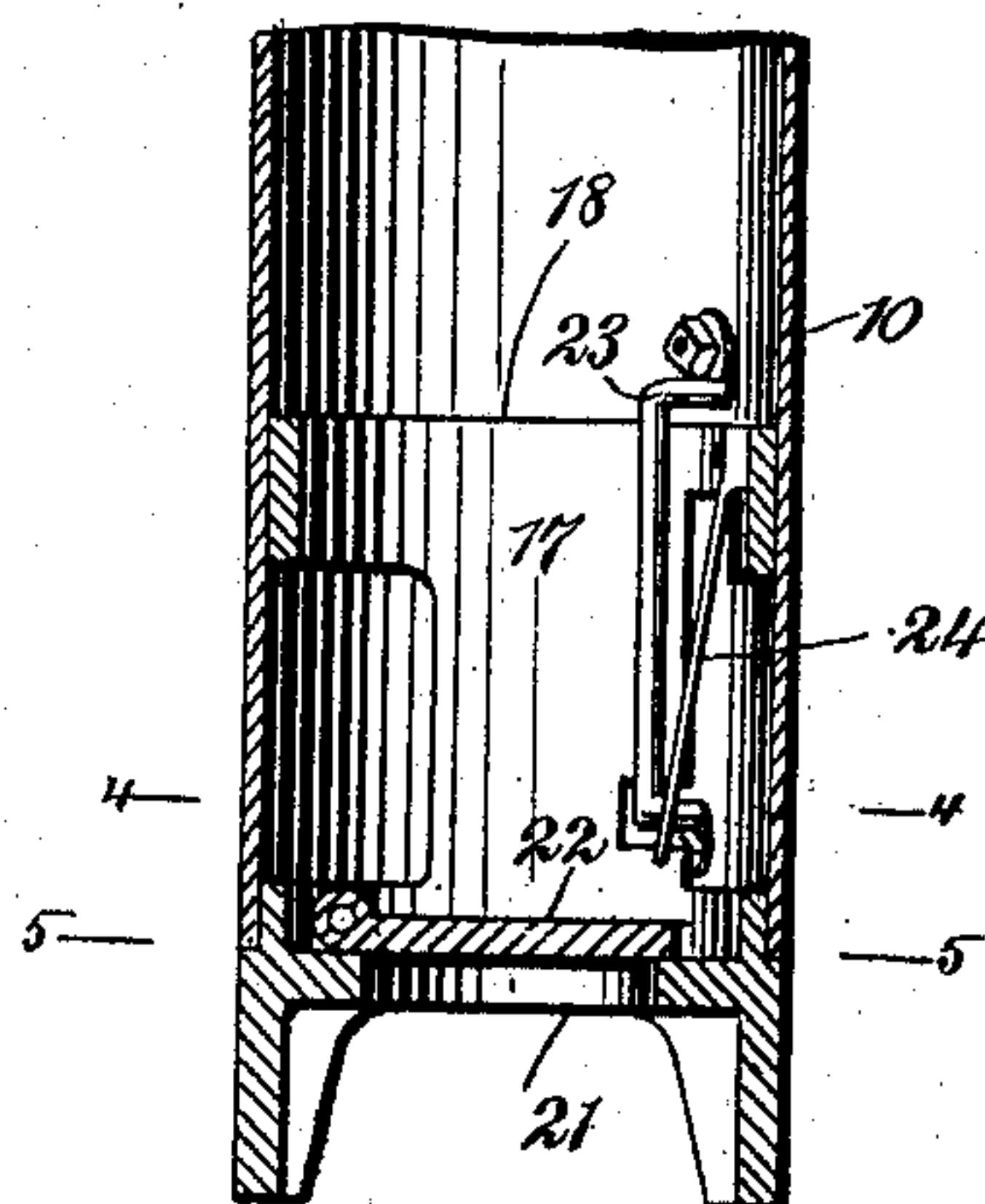
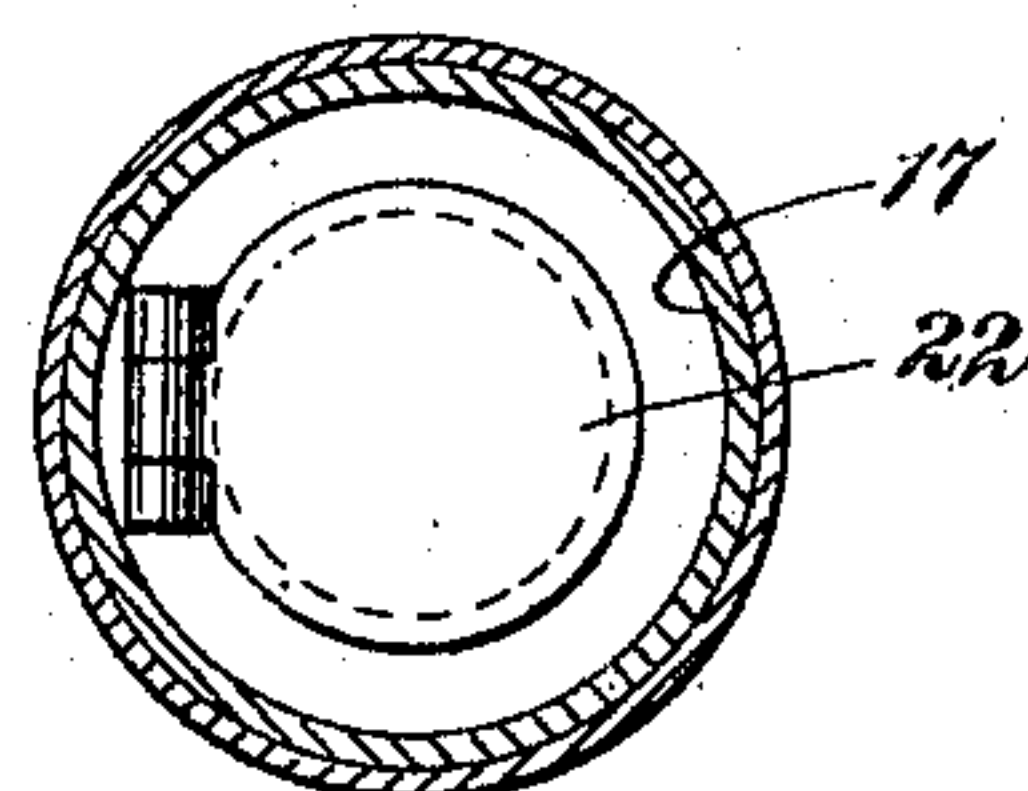
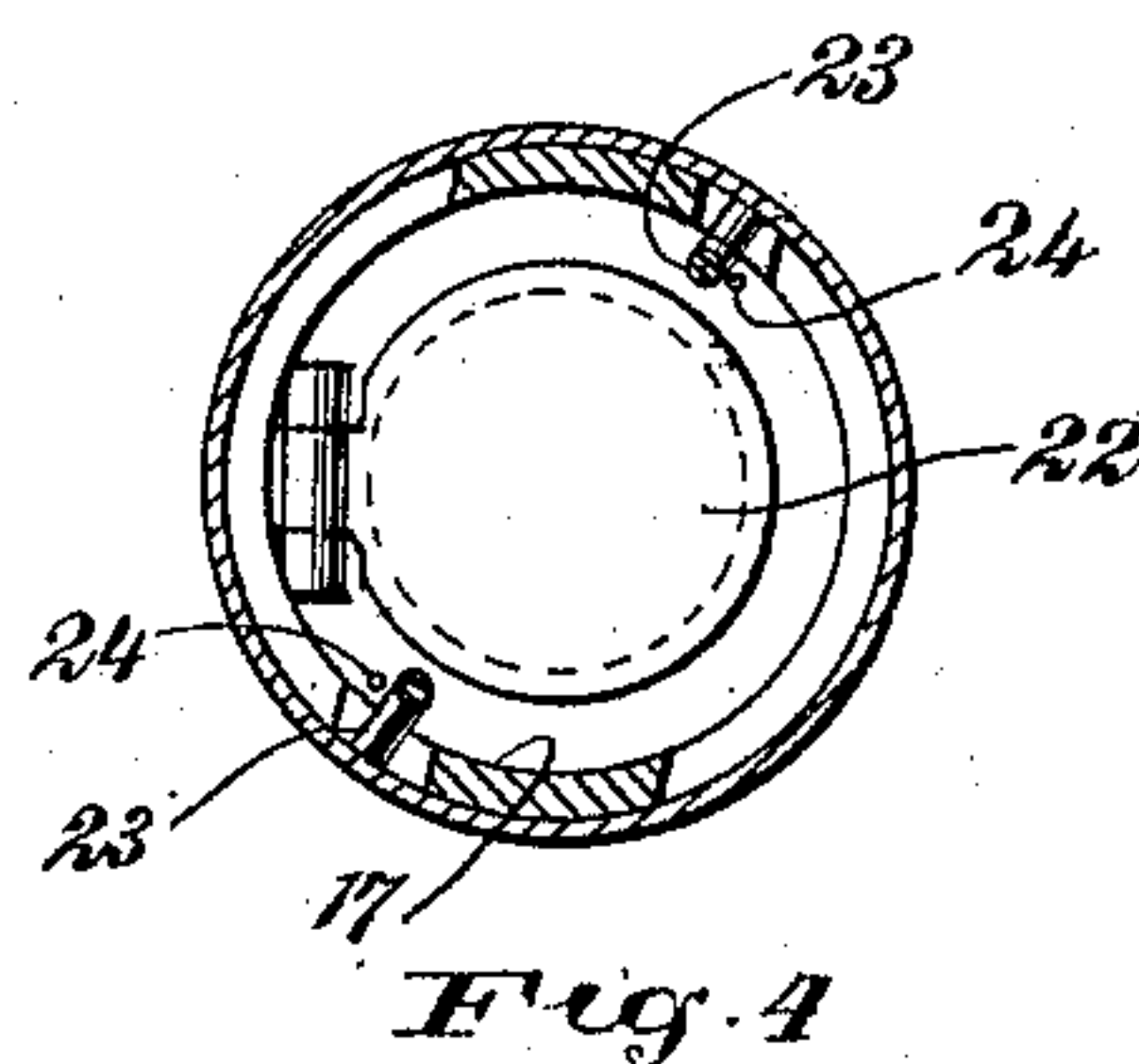
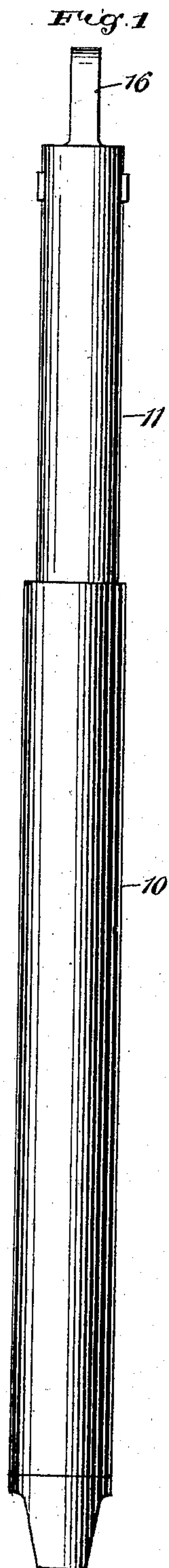
Patented Dec. 30, 1902.

(Application filed Apr. 26, 1902.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM S. McROBERTS, OF FINDLAY, OHIO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 717,252, dated December 30, 1902.

Application filed April 26, 1902. Serial No. 104,775. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. McROBERTS, a citizen of the United States, and a resident of Findlay, in the county of Hancock and State of Ohio, have invented a new and Improved Pump, of which the following is a full, clear, and exact description.

This invention relates particularly to pumps for removing sand from oil-wells, the object being to provide a pump of simple construction that may be readily inserted or removed from a well and that may be emptied or cleaned of sand without inverting it.

I will describe a pump embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation of a pump embodying my invention. Fig. 2 is a longitudinal section thereof on an enlarged scale. Fig. 3 is a sectional view of the lower portion of the pump, showing the valve-casing in place; and Figs. 4 and 5 are sections, respectively, on the lines 4-4 and 5-5 of Fig. 3.

The pump comprises a barrel or pump section 10 and an inner section or plunger 11. Both sections are made tubular and arranged to telescope one into the other. By making both sections tubular a large chamber for receiving sand is provided, which would not be the case with a solid plunger or sucker-rod. Arranged in the upper end of the section 10 is a packing-ring 12, which engages closely against the outer surface of the section 11, and on the inner end of this section 11 is a packing-ring 13, which bears against the inner surface of the section 10. These rings may be made of iron or other suitable material. On the upper end of the inner section 11 is a valve-seat 14 for a hinged valve 15, and also on this upper end is a yoke 16 for engaging with an operating-cable or the like.

Movable in the lower end of the outer section 10 is a valve-casing 17, which has openings at its opposite sides for the discharge of sand, and at its inner end it has a ring-section 18, which engages against the inner surface of the pump-barrel 10, and in this ring-section 18 opposite notches 19 are formed,

while notches 20 are formed at opposite sides or at the edges of the valve-casing strips, as clearly indicated in Fig. 2. The lower end of the casing 17 is provided with a seat 21 for an inwardly-opening valve 22. Guide-straps 23 are secured in the barrel-section 10, and the ring-section 18 of the valve-casing passes through these guide-straps, as clearly shown, and the lower ends of the straps are designed to engage in the notches 20 for locking the valve-casing in position. Spring-fingers 24 are carried by the valve-casing and are designed to engage, when the casing is moved upward, against the lower portions of the guide-straps, so as to cause a rotary movement of the valve-casing within the pump-barrel.

In operation to draw out the valve-casing to permit the discharge of sand the said casing is slightly rotated to move the lower ends of the straps 23 out of the notches 20. Then the valve-casing may be drawn outward. In replacing the valve-casing it is only necessary to push it inward, and the spring-fingers 24 by engaging with the straps, as before mentioned, will move the valve-casing to its locking position. Obviously this is a very essential feature, because should an operator neglect to move the valve-casing to its inner position it would be moved inward when the pump reaches the bottom of the well and of course the locking will take place, as before described.

A pump embodying my invention is very simple in its construction, has no parts liable to get out of order, and as it is practically smooth on its outer surface it may be lowered into a well and through the water very readily. In such lowering the water will pass up through the valves 22 and 15, and during the operation of pumping the upward movements of the inner section 11 will draw sand and a certain amount of water through the valve 22. Then upon a downward movement of the plunger-section the water will open the valve 15 and pass out. When the pump becomes filled with sand, it is to be drawn out of the well and cleaned, as before mentioned.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A pump cylinder or barrel, a valve-cas-

ing movable lengthwise in the cylinder or barrel, a locking device for the casing and means for automatically imparting a rotary motion to said casing to cause it to lock in the cylinder or barrel, substantially as specified.

2. A pump comprising tubular telescoping sections, a valve at the upper end of the inner section, a valve-casing movable in the lower end of the outer section and having opposite openings and notches, guide-straps secured to said outer section and adapted to engage in said notches, and springs carried by the valve-casing and operating to engage the guide-straps to cause a rotary movement of the casing to engage the guides in said notches, substantially as specified.

3. A pump comprising telescoping tubular

sections, a valve on the upper end of the inner section, packing-rings carried by the sections, a valve-casing movable in the lower end of the outer section, a valve arranged in said casing, the said casing having openings for the discharge of sand or the like, guide-straps secured to the inner side of the outer section and passing through said openings, and spring-fingers carried by the casing and adapted to engage with said guides, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM S. McROBERTS.

Witnesses:

JOHN E. BETTS,

WALTER G. KIRKBRIDE.