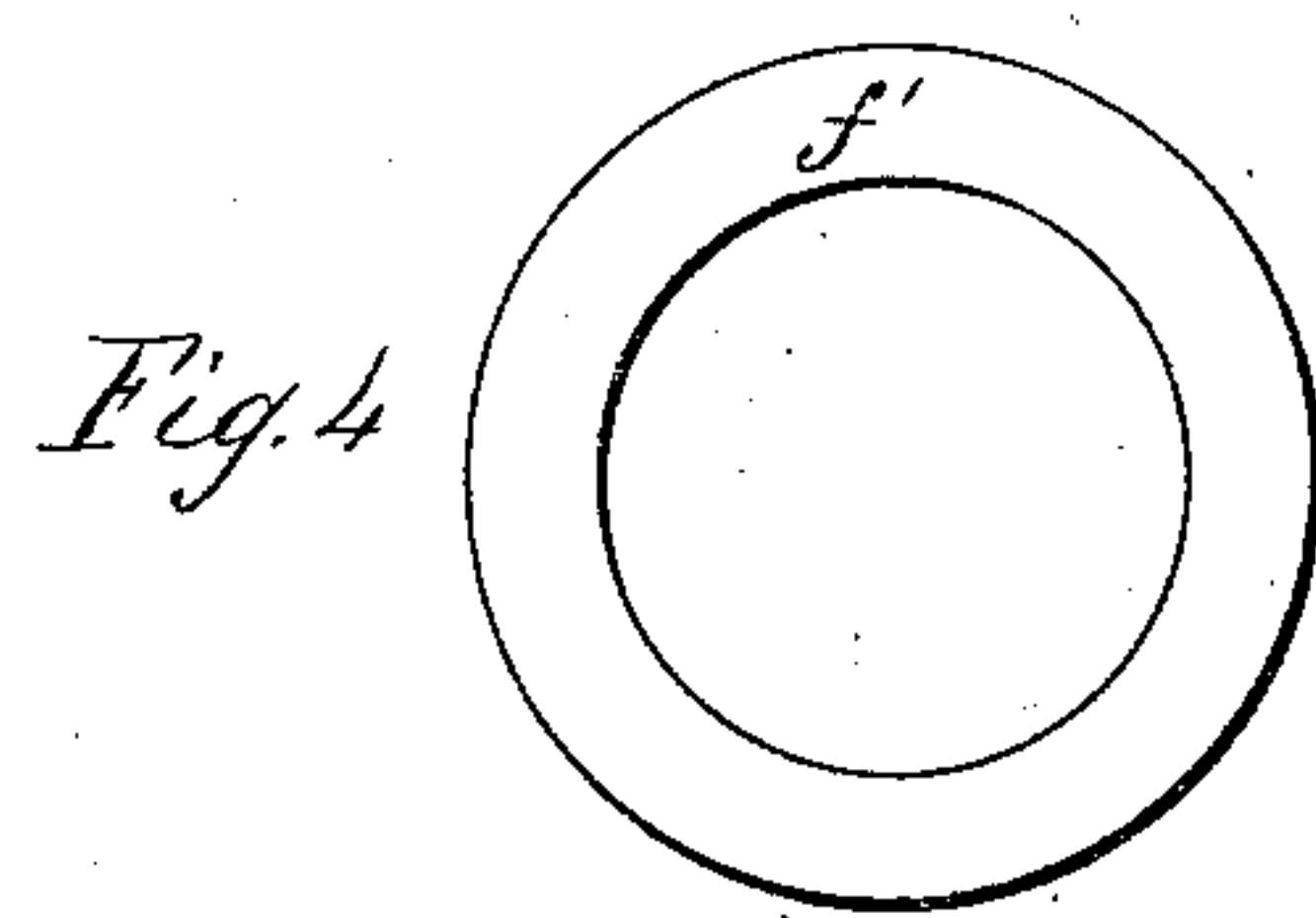
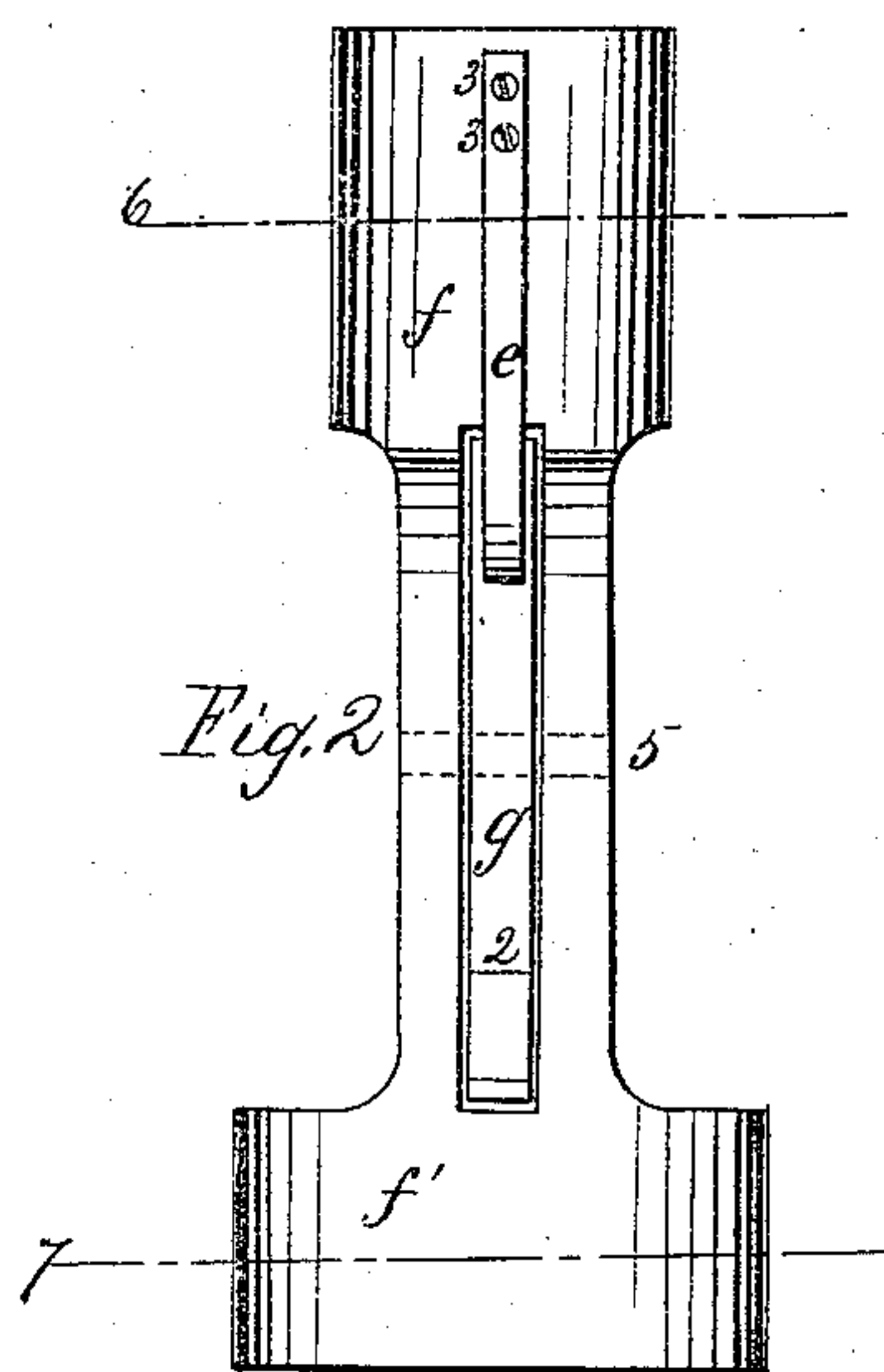
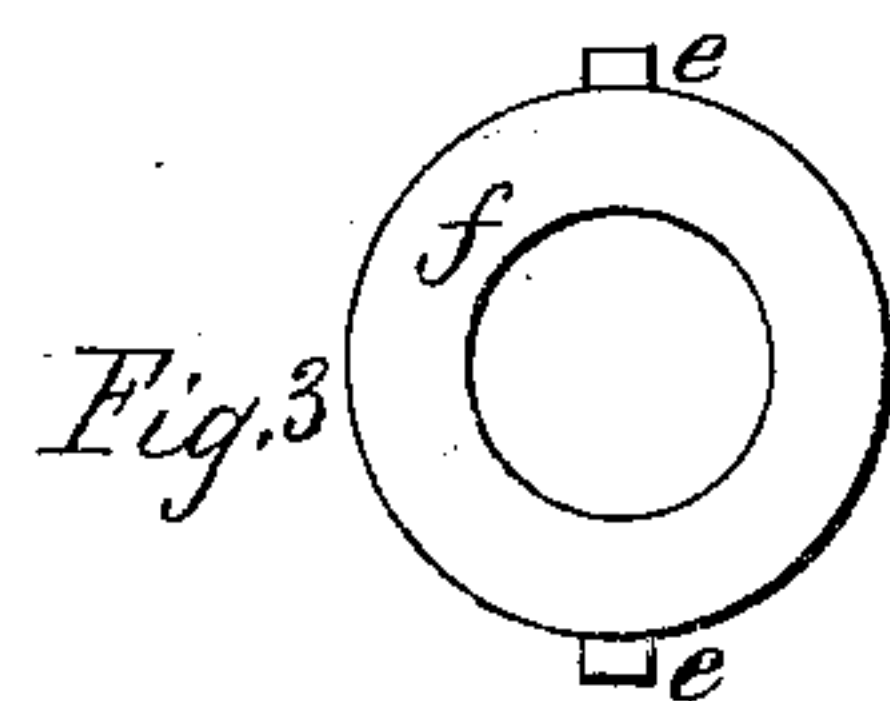
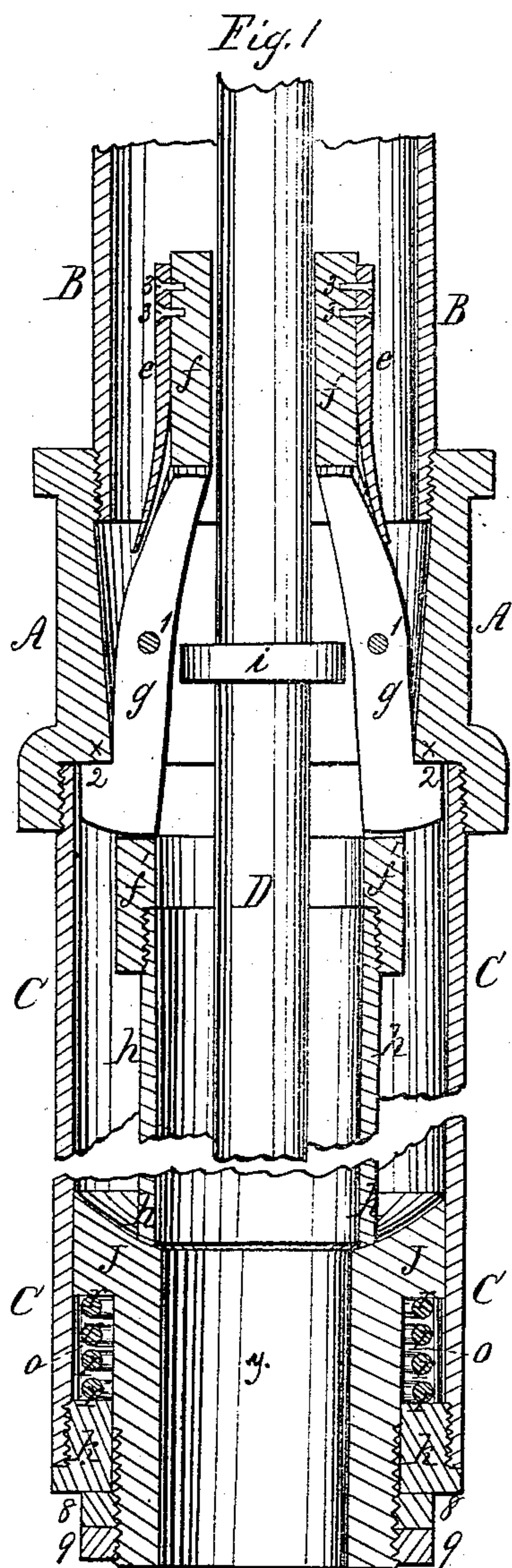


*J. Nicholson,*

*Pump Lift,*

*Nº 61,447.*

*Patented Jan. 22, 1867.*



*Witnesses*  
*James J. Johnston*  
*James McBride,*

*Inventor*  
*John Nicholson*



# United States Patent Office.

JOHN NICHOLSON, OF ALLEGHENY CITY, PENNSYLVANIA.

*Letters Patent No. 61,447, dated January 22, 1867.*

## IMPROVEMENT IN PUMPS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN NICHOLSON, of the city and county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in "Pumps;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing the upper end of the valve-chamber or working-barrel of a pump with a lock; said lock being furnished with catches and springs; said catches taking hold under the shoulder of a coupling, and held there by means of said springs until released from their hold by means of a collar on the pump-rod; said valve-chamber or working-barrel and its lock being combined with a yielding seat-place in the pump case or tubing; the whole being constructed, arranged, and operating in the manner hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, making part of this specification—

Figure 1 represents a longitudinal section of my improvement in pumps.

Figure 2 represents a side elevation of the lock, which is used for securing the valve chamber in its place in the pump case or tube.

Figure 3 represents a transverse section of the lock, cut through at dotted line marked 6.

Figure 4 represents a transverse section of the lock, cut through at the dotted line marked 7. (See fig. 4.)

The pump case or tube consists of pipes B and C, the part marked C being of greater diameter than the part marked B, and is secured to the part marked B by means of an ordinary coupling marked A. In the bottom of the part of the case or tube marked C is placed a seat, marked J, the upper end of which is dished out, so that the valve-chamber *h* will be guided to a central position in the case or tube C. The diameter of the upper end of the seat J is equal to the diameter of the bore of the case or tube C, and the lower part of the seat is furnished with two nuts marked 8 and 9, and its diameter is made equal to the diameter of the opening in the piece marked K on the lower end of the case or tube C. An opening, Y, passes longitudinally through the seat J, for the purpose of allowing the water, oil, or other liquids to flow into the valve-chamber or working-barrel *h* of the pump. When the seat J is placed in the case or tube C, and the piece marked K is secured to the case or tube, a recess, marked O, is formed. In this recess is placed a spiral spring, marked *r*, which is used for two purposes, to wit, to hold the seat J up against the lower end of the valve-chamber or working-barrel *h* of the pump, and for forming a yielding base for said valve-chamber or working-barrel, so that the shoulders 2 of the catches *g* of the lock on the upper end of the valve-chamber will always pass and take hold under the shoulder X of the coupling A. The lock, which is represented by figs. 2, 3, 4, is furnished with two catches *g*, which are pivoted at the point marked 1, and is also furnished with two springs, marked *e*, which are attached to the part marked *f* of the lock by means of screws marked 3. These springs press on the upper part of the catches marked *g*, and thereby hold the lower end of the catches out, so that they will catch under the shoulder X of the coupling A. Through the upper part *f* of the lock is an opening, through which passes the pump-rod D. The lower part, marked *f'*, of the lock, is provided with a large opening, through which passes also the pump-rod. This large opening is used for the purpose of allowing the water, oil, or other liquids to flow up, and through the lock, into the case or tube B of the pump.

As the construction and arrangement of the various parts herein described and represented will readily be understood by the skillful mechanic by reference to the accompanying drawings, I will proceed to describe the operation of my improvement, which is as follows:

The nut 8 on the lower end of the seat J is screwed up until the seat is drawn down sufficient to allow room for the valve-chamber *h*, and so that the shoulders 2 on the catches *g* will catch under the shoulder X of the coupling A. The "jam-nut" 9 is then screwed up against the nut 8, to prevent it from turning. The valve-chamber *h* and the pump-rod D are then lowered down into pump-case B and C, and pressed down until the catches *g* catch under the shoulder X of the coupling A. The pump is then ready for pumping. When I desire to remove the valve-chamber and its valves from case or tube B and C, I draw up the pump-rod D until

the collar *i* presses on the upper part of the catches *g* sufficient to release their hold on the shoulder *X* of the coupling *A*. I then draw the rod and valve-chamber out of the case or tube *C* and *B*. The valve-chamber or working-barrel *h* and its valves are constructed in the ordinary manner, and operate in pumping in the usual way. The seat *J*, by its yielding, will compensate for any sand or dirt which may gather in the lower end of the case or tube *C*, and will, under all ordinary circumstances, allow room for the valve-chamber *h*, so that the catches *g* will catch under the shoulder *X* of the coupling *A*.

Having thus described the nature, construction, and operation of my improvement, what I claim as of my invention, is—

Providing the upper end of the valve-chamber or working-barrel *h* of a pump with a lock *ff'*, furnished with catches *g* and springs *e*; said lock being used in connection with a coupling *A*, case *C*, seat *J*, nuts *K*, 8 and 9, spiral spring *r*, and collar *i* on the pump-rod *D*, the whole being constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

JOHN NICHOLSON.

Witnesses:

JAMES J. JOHNSTON,

JAMES MCBRIDE.