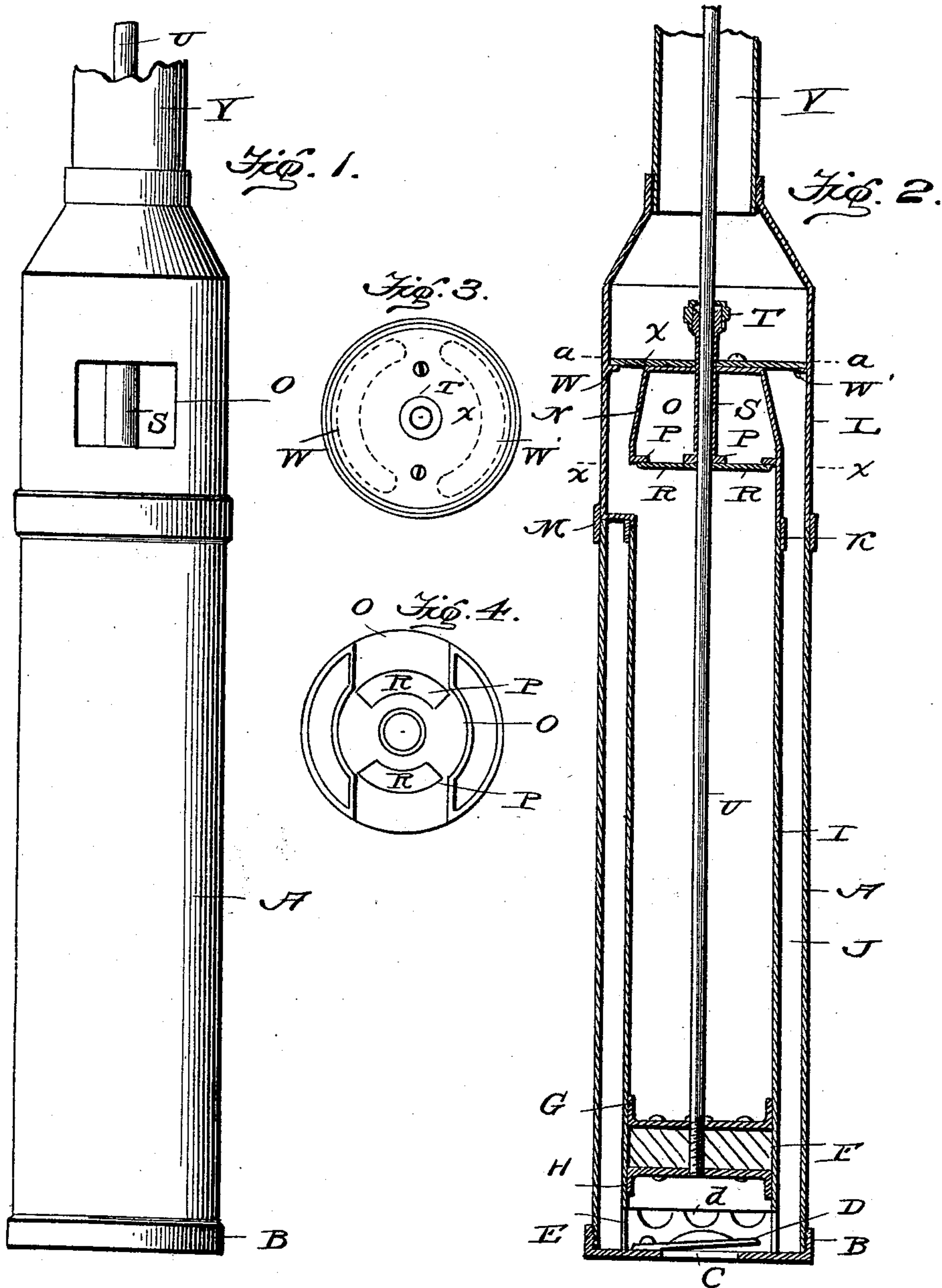


(No Model.)

D. LIPPY.  
PUMP FOR DRILLED WELLS.

No. 521,720.

Patented June 19, 1894.



Witnesses:

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Att'y.



# UNITED STATES PATENT OFFICE.

DAVID LIPPY, OF MANSFIELD, OHIO.

## PUMP FOR DRILLED WELLS.

SPECIFICATION forming part of Letters Patent No. 521,720, dated June 19, 1894.

Application filed March 14, 1893. Serial No. 465,894. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID LIPPY, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Pumps for Drilled Wells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in pumps and the objects of my invention are, first, to construct a double acting force-pump, to be used in drilled-wells and for other purposes, the said pump to take water at the downward stroke of the piston as well as at the upward stroke of the same, and supply a steady and continuous stream of water from the discharge-pipe; second, to make a novel, cheap, durable, and efficient means for the purpose stated.

In the accompanying drawings Figure 1 is a side elevation of my improved pump showing the barrel intact, the discharge-pipe and connecting-rod broken away. Fig. 2 is a longitudinal sectional view of same, showing the interior construction of the same. Fig. 3 is a transverse sectional view taken in line  $a-a$  Fig. 2 showing the construction of the upper valves and ports, the ports shown in dotted lines. Fig. 4 is also a transverse sectional view taken in line  $x-x$  Fig. 2 showing the construction of the induction ports and valves.

Similar letters refer to similar parts throughout the several views.

In the accompanying drawings A indicates a pump barrel which may be constructed of gas-pipe or any metal tubing.

B indicates a cap which is attached to the lower end of the pump-barrel by screw threads. The said cap is provided with the center opening C. The said opening is provided with the tongue valve D, the said valve being of common construction.

E indicates a perforated ring or flange forming part of the cap B.

F indicates a plunger which is composed of

a solid metal head and provided upon the upper and lower ends, with leather cup-shaped suckers G and H.

I indicates an inner pump barrel which is smooth upon the inside and in which operates the pump-plunger F. The said inner tube is much smaller than the outer tube allowing a water space J around the outer periphery of the inner tube. The lower end of the said tube rests upon the edge of the perforated hinge E. The upper end is secured within a socket K, forming part of the upper casting L. The lower end of the upper casting is provided with the threaded coupling M which connects the upper portion I and the lower portion A together, clamping the inner tube I rigid in the position shown.

N indicates a hollow tubular partition which forms part of the upper casting L. The said partition is of the same diameter as the tube I. It is so constructed as to form a hollow chamber O and in the bottom is formed the upper induction ports P. P. The said ports are provided with tongue valves R placed upon the under side. These valves are for the purpose of supplying the pump-barrel with water when the plunger is in its downward motion. A tubular stem S extends from the center upward from the center of the lower partition, to the top of the induction opening O, and is provided upon the upper end with the stuffing-box T. This forms a guide for the connecting rod U. The upper partition V is provided with discharge-ports W and W'. A circular tongue valve X is secured upon the top of the said ports. The said casting L is reduced at the top and provided with female threads and in which is secured the discharge pipe Y.

It will be readily seen that the operation is simple and efficient. It will be presumed, that the pump-barrel is full of water, the water having passed into the barrel through the opening C and through the inlet-ports R—R the plunger is at its extreme throw the upward motion of the plunger forces the water through the port Z and valves W into the discharge-pipe V at the same time the lower portion of the barrel is filling with water supplied through the lower valve D the downward motion of the plunger forces the water through

the perforations *d* upward into the space J and through the valve W' into the discharge pipe.

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

A submerged double acting pump consisting of an outer shell which communicates at its upper end with a discharge pipe and has its lower end closed by a cap provided with a central valve and an upwardly extending perforated flange surrounding said valve, a tube arranged within the shell and resting at its lower end upon the perforated flange at the bottom thereof, a tubular partition arranged near the upper end of said tube and forming

a chamber which opens through the outer shell and communicates with the inner tube through suitable valved passages in its lower side, valves arranged above said partition to close the passages between the inner tube and outer shell, and a piston arranged within the inner tube and having its stem extending through a sleeve in the tubular partition, substantially as and for the purpose described.

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

DAVID LIPPY.

Witnesses:

B. J. BALLIRTH,  
D. LESTER ZAHMSER.