J. K. VAN PELT & W. LEE.

DIRECT-ACTING FORCE-PUMPS.

No. 194,503. Patented Aug. 21, 1877.

fig. 1.

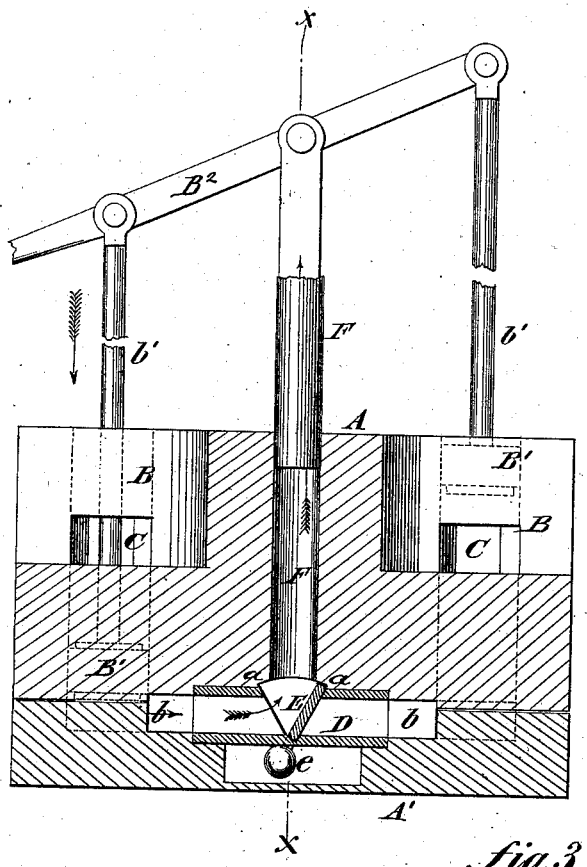


fig. 2.

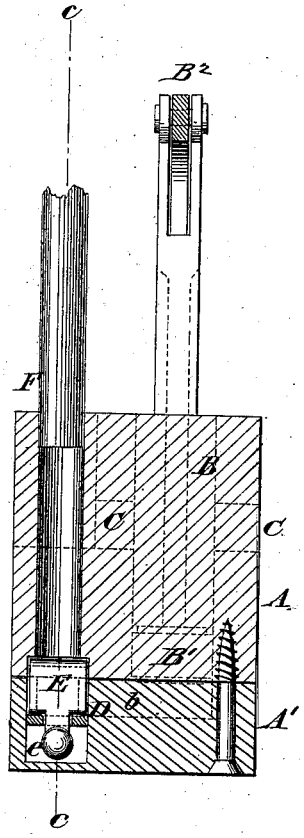
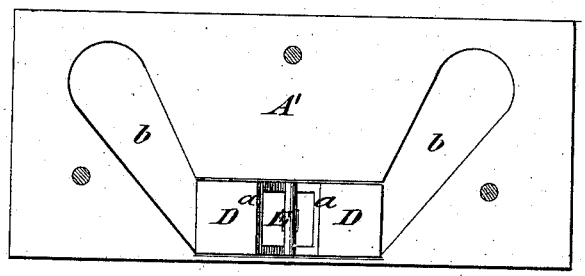


fig. 3.



WITNESSES:

Gustave Dietrich

J. H. Scarborough.

INVENTORS

J. K. Van Pelt

BY W. Lee.

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN K. VAN PELT AND WASHINGTON LEE, OF TEXARKANA, ARKANSAS, ASSIGNORS TO THEMSELVES AND WILLIAM H. ELLIOTT, OF SAME PLACE.

IMPROVEMENT IN DIRECT-ACTING FORCE-PUMPS.

Specification forming part of Letters Patent No. **194,503**, dated August 21, 1877; application filed April 16, 1877.

To all whom it may concern:

Be it known that we, JOHN KING VAN PELT and WASHINGTON LEE, of Texarkana, in the county of Miller and State of Arkansas, have invented a new and Improved Pump, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of our improved pump on line *c c*, Fig. 2; Fig. 2, a vertical transverse section of the same on line *x x*, Fig. 1; and Fig. 3, a bottom view of the base part of the pump with top part detached.

Similar letters of reference indicate corresponding parts.

The invention has reference to an improved direct-acting force-pump of extremely simple and durable construction, that is adapted particularly to mining and other purposes, as no valves are used and no parts are liable to get out of order by sand and grit.

The invention consists of direct-acting plungers that force the water from the cylinders, having supply-holes through bottom channels to a discharge-pipe, having a swinging or sliding cut-off that alternately establishes and interrupts communication with the cylinder and channels.

In the drawing, A represents the top part, and A′ the base part, of our improved pump. The top part is provided with cylinders B and plungers B^1 sliding therein, and being operated by plunger-rods *b′* and a fulcrum-lever, B^2.

The water enters the cylinder B through supply-holes C, at both sides, and is forced by the direct action of the plungers down into the water-channels *b* of base part A′, and into a connecting-chamber, D, with which the discharge-pipe F communicates.

A swinging and balanced cut-off, E, is arranged in connecting-chamber D, at the foot of discharge-pipe F, and carried by the alternating action of the plungers from one side to the other, so as to rest on seats *a* of chamber D.

The cut-off E produces the connection of the cylinders with the discharge-pipe at the descent of the plungers, and forces at each stroke the water through one of the channels into the discharge-pipe.

The pump works in simple and effective manner, without valves or suction, and is readily filled at each upward stroke of the plungers as it is submerged in the water.

When the motion of the plunger is stopped the water falls back into the water-chambers, and remains cool, without being exposed to freezing as in the valved pumps, in which the water is sustained above the plungers.

The pump is not liable to become filled with sand or sediment, so as to get out of order, being thereby of special advantage for pumping gritty and impure water.

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

In a double-acting pump, the combination, with two plungers, B^1 B^1, of side-apertured cylinders B B, channels *b b*, chamber D, cut-off E, and discharge F, arranged as shown and described.

JOHN KING VAN PELT.
WASHINGTON LEE.

Attest:
W. H. ELLIOTT,
A. S. BLYTHE.