

(No Model.)

D. E. AUNKST.
PUMP.

No. 486,016.

Patented Nov. 8, 1892.

Fig. 1

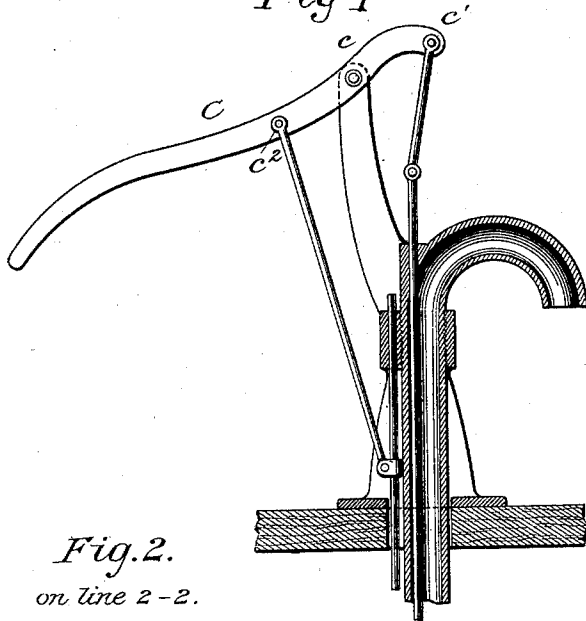


Fig. 3.

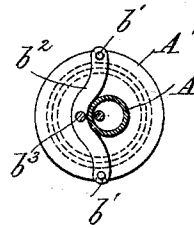


Fig. 2.
on line 2-2.

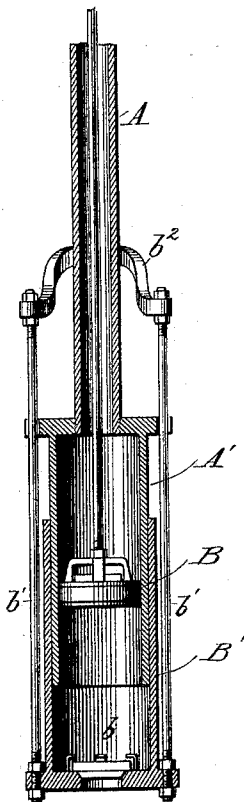
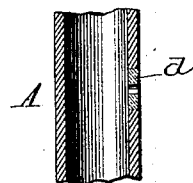


Fig. 4.



Witnesses
Samuel H. Barnes.
J. S. Elmore

Inventor
D. E. Aunkst
By his Attorney *P. T. Lodge*

UNITED STATES PATENT OFFICE.

DANIEL E. AUNKST, OF MILTON, PENNSYLVANIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 486,016, dated November 8, 1892.

Application filed March 22, 1892. Serial No. 425,890. (No model.)

To all whom it may concern:

Be it known that I, DANIEL E. AUNKST, of Milton, county of Northumberland, and State of Pennsylvania, have invented a new and useful Improvement in Pumps, of which the following is a specification.

The object of my invention is to provide for Artesian, driven, and other wells a pump of simple construction and few parts, which will deliver a large amount of water for the amount of power applied. To this end I make use of the apparatus illustrated in the accompanying drawings, which consists, broadly, in a fixed cylinder connected to the delivery-pipe, which is provided with an internal reciprocating valved piston and an external reciprocating valved cylinder moving in an opposite direction to the piston, one of said reciprocating members acting on the downstroke, and the other on the upstroke, to produce a continuous discharge of water.

In the accompanying drawings, Figure 1 is a sectional view of my improved pump. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a plan view of the top of a stationary cylinder, showing the eccentric position of the discharge-pipe. Fig. 4 is a detail illustrating the non-corrosive leak-opening for preventing freezing in cold weather.

Referring to the drawings, A is the pump-stock depending from the upper portion or delivery part of the pump, and carrying at its lower end a fixed stationary cylinder A', which may be provided at its bottom end with a check-valve, although this is not necessary. Inside this fixed cylinder I place a piston B, with a valve mounted in such position as to open with the downward stroke of the piston. The rod operating this piston B is carried upward through the tubular stock A to the pump-handle and pivoted thereto. These parts in themselves would form an operative pump; but in order to increase the efficiency in delivery I place outside the fixed cylinder A' a sector-cylinder B', sliding thereon and provided at its lower end with a second upwardly-lifting valve b. This cylinder is moved up and down by rods b' b', connected to ears on the sides of the cylinder B' and attached at their upper ends to a U-shaped connection b², which is in turn con-

nected to a rod b³, carried upward and pivoted to the pump-handle.

In order to prevent any side motion in the operation of the movable cylinder B', I place the pump-stock A in an eccentric position, as regards the center of the cylinder A', and bring the center of the U-shaped connection over the center of the cylinder, or very nearly so, thus bringing the point at which the force is applied to the movable cylinder, as near the center as possible.

In order to prevent freezing, it is customary to provide all pumps with a drip, and this in metal pumps will, in the course of time, become corroded, thus stopping the drip and causing the pump to freeze. To prevent this, I provide a bushing d, of non-corrosive metal, in the drip-hole, either soldering or screwing the same in position. This bushing may be of bronze, German silver, or any non-corrosive metal.

Other details of construction will occur to those skilled in the art, which do not form a part of my invention and which are not necessary as parts of its construction, my invention consisting, broadly, in furnishing a telescopic cylinder with a piston moving in the opposite direction from the motion of the moving part of the cylinder, so that the speed of delivery of the fluid shall be continuous during each stroke of the parts, and also in delivering the water from the pump through the supporting tube or stock of the pump without surrounding the same by any exterior casing.

Power may be applied to the piston and movable parts of the cylinder by any suitable means. I have shown in the drawings an ordinary hand-lever C, with a fulcrum c. To this hand-lever C the operating-rods of the piston and movable cylinder are connected, the rod at the upper end, as shown at c', and the rod b³ on the opposite side of the fulcrum at c². Any other connection may be used that will serve the same purpose—that is, to cause the piston and movable cylinder to act in opposite directions at the same time.

Having thus described my invention, what I claim is—

1. In a pump, the combination of a fixed cylinder A', open at its lower end and having a discharge or delivery pipe connected with

its upper end, a reciprocating valved piston working within the stationary cylinder, an outer cylinder telescopically fitted upon the stationary cylinder and having a valved lower
5 end, and means for reciprocating the piston and the outer cylinder simultaneously in opposite directions.

2. In a pump, the combination of the fixed cylinder, open at both ends, and the pump-
10 stock or delivery-pipe rising therefrom, the reciprocating valved piston in said cylinder, the piston-rod connected with the piston and extending up through the pump-stock, and an
15 external valved cylinder fitting and adapted to reciprocate on the fixed cylinder, and means for reciprocating the said movable cylinder and the piston simultaneously in opposite directions.

3. In a pump, the combination of the fixed
20 cylinder, open at both ends, the pump-stock

or delivery - pipe rising therefrom eccentrically, the valved reciprocating piston in said cylinder, the piston-rod extending up through the pump-stock, the external cylinder fitted upon the stationary cylinder and adapted to
25 reciprocate thereon, the rods b' b' , attached to the external cylinder, the yoke connecting the upper ends of the said rods, the operating-rod b^3 , connected with the yoke, and the lever-handle connected with the piston-rod
30 and with the rod b^3 to move the piston and the reciprocating cylinder simultaneously in opposite directions.

In testimony whereof I hereunto set my hand, this 24th day of February, 1892, in the
35 presence of two attesting witnesses.

DANIEL E. AUNKST.

Witnesses:

W. R. KENNEDY,
F. S. ELMORE.