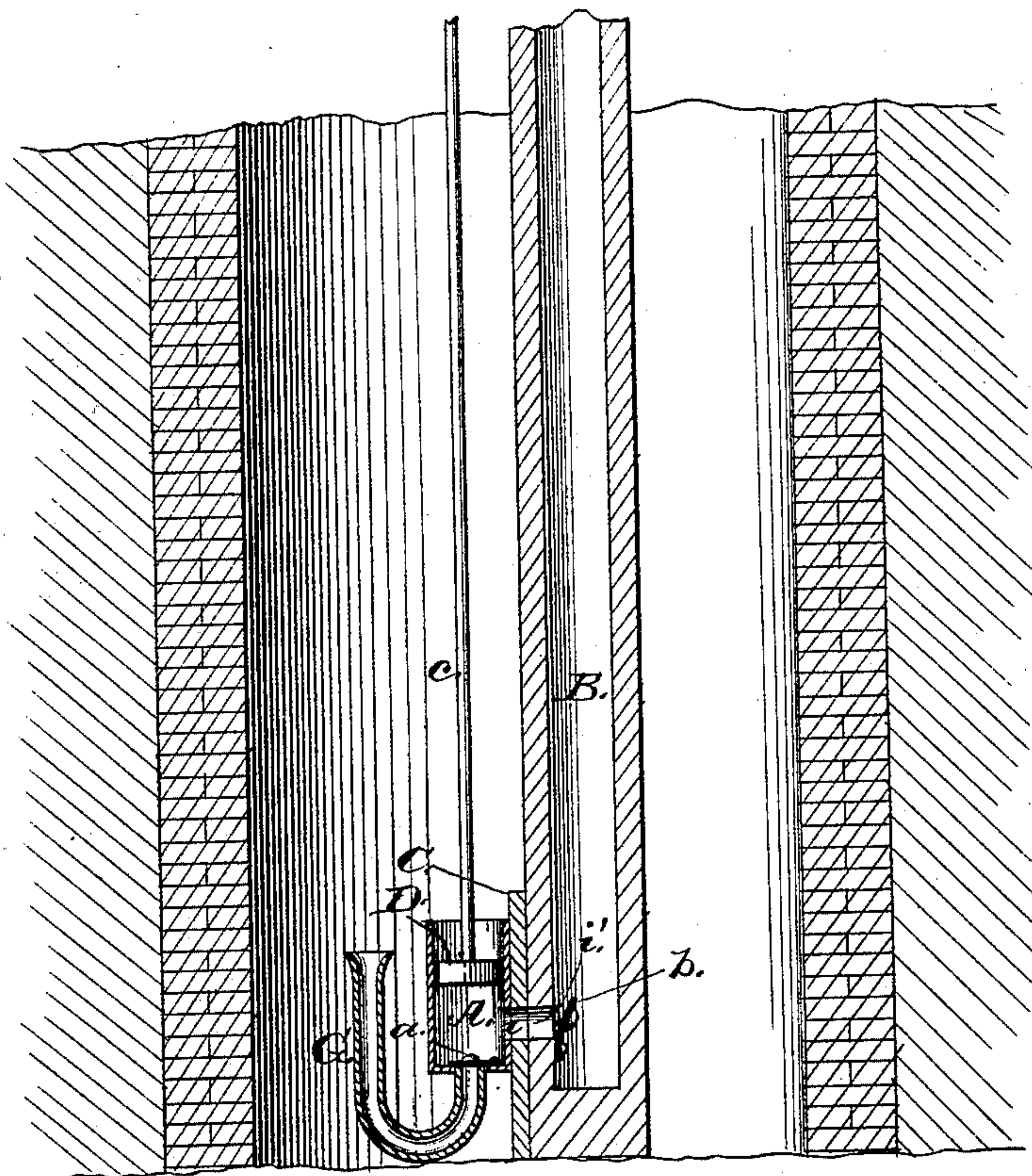


E. S. MACK.  
Pump.

No. 223,366.

Patented Jan. 6, 1880.



WITNESSES

*John A. Ellis.*  
*J. J. Chas.*

INVENTOR

*Elisha S. Mack,*  
*by E. W. Anderson*  
*his* ATTORNEY



# UNITED STATES PATENT OFFICE.

ELISHA S. MACK, OF PAINTED POST, NEW YORK.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 223,366, dated January 6, 1880.

Application filed October 25, 1879.

*To all whom it may concern :*

Be it known that I, ELISHA S. MACK, of Painted Post, in the county of Steuben and State of New York, have invented a new and  
5 valuable Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part  
10 of this specification, and to the letters and figures of reference marked thereon.

The figure is a representation of a vertical central section of my improved pump.

This invention has relation to improvements  
15 in pumps.

The object of the invention is mainly to derive from cisterns, wells, tanks, or other permanent water-reservoirs water which will be free of impurities arising from partial stagnation, organic matter, silt, or other foreign  
20 matter generally found at the bottom of said receptacles in greater or less quantities, and thus render the water innoxious.

The nature of the invention consists in the  
25 construction and novel arrangement of parts, as hereinafter shown and described.

In illustrating my invention I shall show its advantages as applied to a force-pump; but they are, it will be clearly seen, of equal benefit  
30 in connection with lift, chain, and other descriptions of pumps.

In the annexed drawings, the letter A designates the barrel of the pump, usually constructed of sheet metal, though cast-iron may  
35 be used, the edges of which are lapped and riveted and the lower end hermetically closed. The barrel thus formed is covered with an enameling compound placed in the muffle and the compound fused onto the same, neatly  
40 and smoothly finishing it, and closing the crevices hermetically by the running of the enamel into the same. This compound is of the description used for making what is known to the trade as "agate iron," and is insoluble  
45 in water and practically indestructible. At the bottom of the barrel is a valve, *a*, of suitable construction, and that opens upward.

B indicates a wooden eduction-tube, closed

at its lower end, resting on the bottom of the well, and extending upward through the plate  
50 form, closing the upper end thereof. This tube is closed at top, and is provided with a spout for the attachment of a hose-pipe. It is provided near its lower end with a cradle, C, in which the barrel aforesaid is received,  
55 and to which it is secured in any suitable manner. In the side of the barrel is formed an opening, *i*, registering with a corresponding opening, *i'*, in the contiguous face of the cradle and pipe B, in which is a valve, *b*, opening  
60 outward from said openings, and closing the same when the plunger D is in its upward movement. The plunger D is valveless, and is reciprocated through the medium of the  
65 rod *c* by means of suitable mechanisms. It is packed by means of a leather ring secured to its perimeter, which, being in contact with the smooth enameled surface of the barrel, is  
70 but little subject to wear, and consequently is very durable. Hence the packing need be renewed only at long intervals.

G indicates an induct-pipe of any suitable material, but preferably of metal, that is coupled in any workmanlike manner to the under side of the pump-barrel below the valve,  
75 and serves to admit water thereto. This pipe is U-shaped, and may be made in one or more sections. It extends to the bottom of the well, or nearly so, and upward therefrom a distance sufficient to clear the deposit and  
80 open into clear, wholesome water. When the upward stroke of the plunger is given, the valve *a* is opened and valve *b* closed. Water then flows through the induct-pipe into the barrel, completely filling the space below the  
85 plunger. The upward stroke being completed and the downward stroke commenced, valve *a* closes and valve *b* opens, and the water in the barrel is forced into the educt, which being filled, the water flows out of the spout.  
90

It will be observed that the water-supply is had above the sediment, which is consequently not disturbed, and that the water is pure and wholesome and fit for domestic uses.

What I claim as new, and desire to secure  
95 by Letters Patent, is—

The combination, with the educt-tube B, having the cradle C, the enameled pump-barrel A, secured thereto, the openings *i i'* between the barrel and tube, the valve *b*, closing  
5 said openings, the upwardly-opening valve *a* at the bottom of the barrel, the valveless plunger D, and its operative mechanism, of a U-shaped induct-pipe, G, opening into the bar-

rel at its lower end and extending up above the layer of deposit, as shown and described. 10-

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

Witnesses: ELISHA S. MACK.

J. L. PALMER,  
P. A. LEONARD.