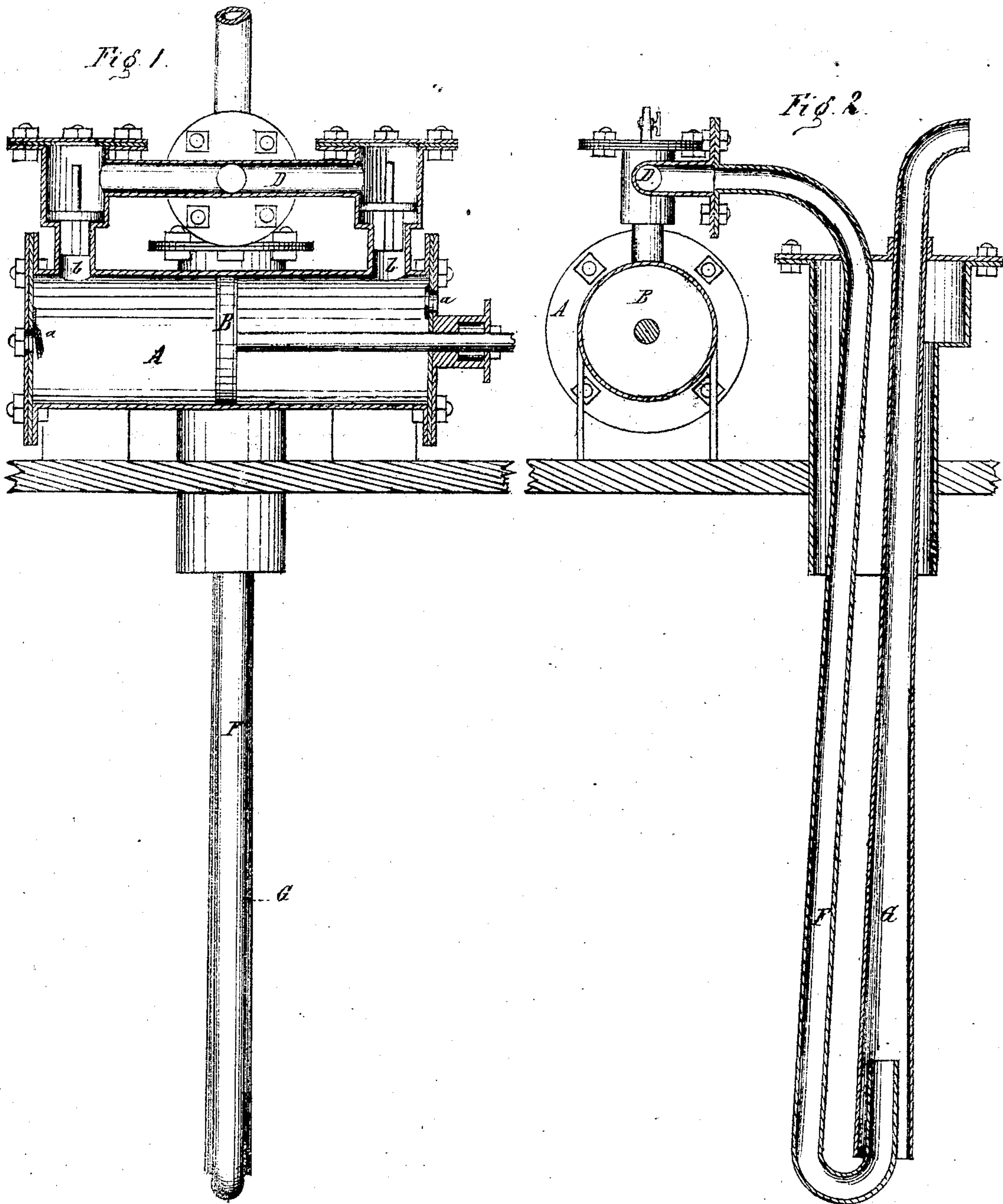


T. W. MALONE.

Improvement in Apparatus for Forcing Fluids.

No. 118,776.

Patented Sep. 5. 1871.



Witnesses:

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PER

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UNITED STATES PATENT OFFICE.

THOMAS W. MALONE, OF MASON CITY, WEST VIRGINIA.

IMPROVEMENT IN APPARATUS FOR FORCING FLUIDS.

Specification forming part of Letters Patent No. 118,776, dated September 5, 1871.

To all whom it may concern:

Be it known that I, THOMAS W. MALONE, of Mason City, in the county of Mason and State of West Virginia, have invented a new and Improved Apparatus for Forcing Fluids; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a longitudinal vertical section. Fig. 2 is a transverse vertical section.

This invention has for its object the production of an upward flow of the contents of wells, whether of salt, oil, artesian, or ordinary species, or of cisterns, or of gas-tanks, or of coal-pits or shafts, by means of a forced current of air, as will be hereinafter explained.

In the drawing is shown a double-acting air-pump, the cylinder A having a valve-covered inlet-port, *a*, at each end, and the piston B forcing the air alternately through the outlet passages *b b* into the connecting-pipe D, which is thus in receipt of a constant current. Thence the air passes through the pipe F down into the receptacle containing the fluid to be elevated. This may be an oil-well six hundred and fifty feet, or more, deep, or a cistern or other reservoir. The lower end of the pipe F turns up and opens into an iron, wooden, or copper tube, G, that runs down to any required distance into the fluid. In an artesian well the pipe F will neces-

sarily be wholly inclosed within the tube G, but in a cistern, coal-pit, or other more enlarged space, the pipe F may be outside of the tube G, as shown, except as to the turned-up lower end of the pipe which opens into the tube. The air-current issuing out of the pipe F into the liquid contained within the tube G displaces the latter, causing that part of it that stands above the lower end of the pipe to flow upward, and the rest to follow in the wake of the upper part. Hence a continuous flow issues out of the top of the tube G through the discharge-pipe H. This apparatus may be applied to a tank containing illuminating-gas for the purpose of causing the same to flow to the various gas-burners.

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

In combination with an air-pump of the within-described construction, the descending pipe F and ascending and discharge-pipe G, when the turned-up end of the former is of the full diameter of the pipe F, and the lower end of the pipe G, which it enters, is enlarged so as to form a long narrow annular channel between the ends of the pipes F and G, as and for the purpose set forth.

THOS. W. MALONE.

Witnesses:

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