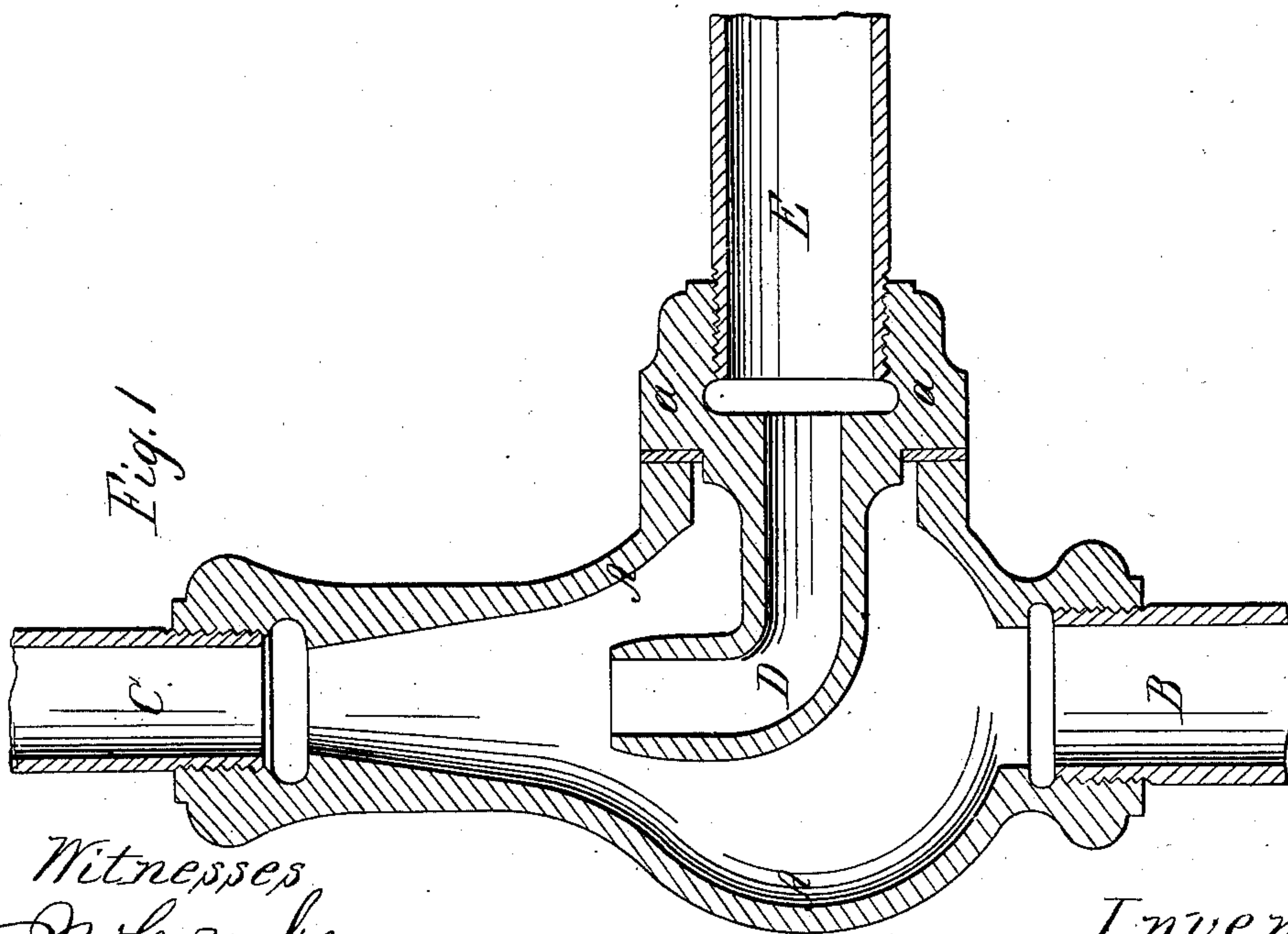
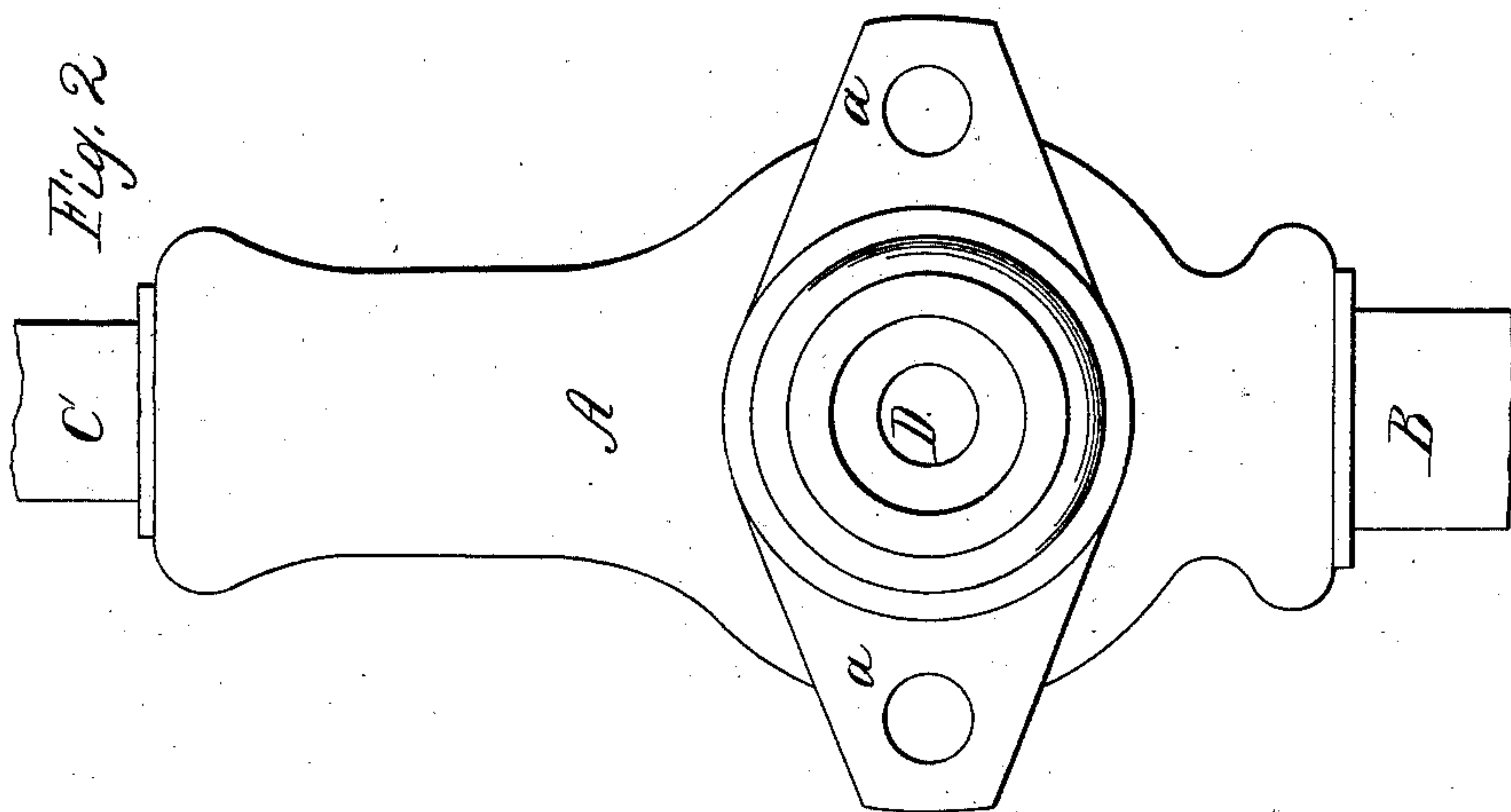


A. Brear,
Ejecting Pump,
No. 44,782, Patented Oct 25, 1864.



Witnesses
J. W. Combs
S. C. Cohen

Inventor
A. B. Brear

UNITED STATES PATENT OFFICE.

ABEL BREAR, OF SAUGATUCK, CONNECTICUT.

IMPROVEMENT IN APPARATUS FOR RAISING WATER, &c.

Specification forming part of Letters Patent No. 44,782, dated October 25, 1864.

To all whom it may concern:

Be it known that I, ABEL BREAR, of Saugatuck, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Apparatus for Raising and Forcing Water and other Liquids; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of an apparatus constructed according to my invention. Fig. 2 is an elevation of the same at right angles to Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to apparatus for raising and forcing water and other liquids by the injection of a jet of steam or other aeriform fluid at a suitable pressure into a chamber which connects a suction with a delivery pipe.

It consists in a novel construction and arrangement of the suction and delivery inlet and outlet and the steam-nozzle, whereby the apparatus is rendered capable of raising and delivering a larger volume of liquid by means of a given quantity of steam or other aeriform fluid, and of operating with a less pressure of such fluid.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the chamber which forms the connection between the suction and delivery pipes B and C, and into which the nozzle D, with which the steam-pipe E is connected, enters. This chamber is represented as formed of a casting of a bulb or inverted-pear shape, but may be of such other form as to provide for the connection of the suction-pipe B at its bottom and the delivery-pipe C at its top, and to leave sufficient room within it for the free passage of water around the steam-nozzle D. The suction and delivery pipes are screwed into or otherwise secured in the inlet and outlet openings provided in the casting, the said openings being directly opposite to and in line with each other,

and the portions connected with the chamber occupy upright positions. The steam-nozzle D is made of elbow shape, and inserted through an opening in one side of the chamber, and is secured in place by being provided with a flange, *a*, which is bolted or otherwise secured to the exterior of the chamber. The mouth of this nozzle is turned upward, and is in the center of the chamber A, and in line with the suction and delivery inlet and outlet. The steam-pipe E is screwed into or otherwise secured to its flanged portion.

The apparatus may be arranged with its suction-pipe B simply dipping into the water or other liquid in the place from which it is to be raised, or may be submerged, so that a portion or the whole of the chamber is submerged, provided that the submerged portion of the steam-pipe be protected by an outer pipe or jacket to prevent condensation of the steam. When steam is admitted through the pipe E and nozzle D, it jets directly upward into the delivery-pipe and produces a vacuum in the lower part of the chamber A, into which the water or other liquid is forced by atmospheric pressure, and as fast as the liquid rises in the chamber it is forced up through the delivery-pipe by the jet of steam from the nozzle, which is discharged upward directly in line with the delivery-pipe. It will be seen that the suction and delivery pipes and the mouth of the nozzle are all in line with each other, and hence the steam acts with the greatest possible effect.

Compressed air or other aeriform fluid under pressure may be used instead of steam to produce the same effect.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of the inlet and outlet openings of the chamber A and the mouth of the elbow-shaped nozzle D all in line with each other and in upright positions, substantially as herein specified.

ABEL BREAR.

Witnesses:

H. M. STREVER,
J. W. COOMBS.