

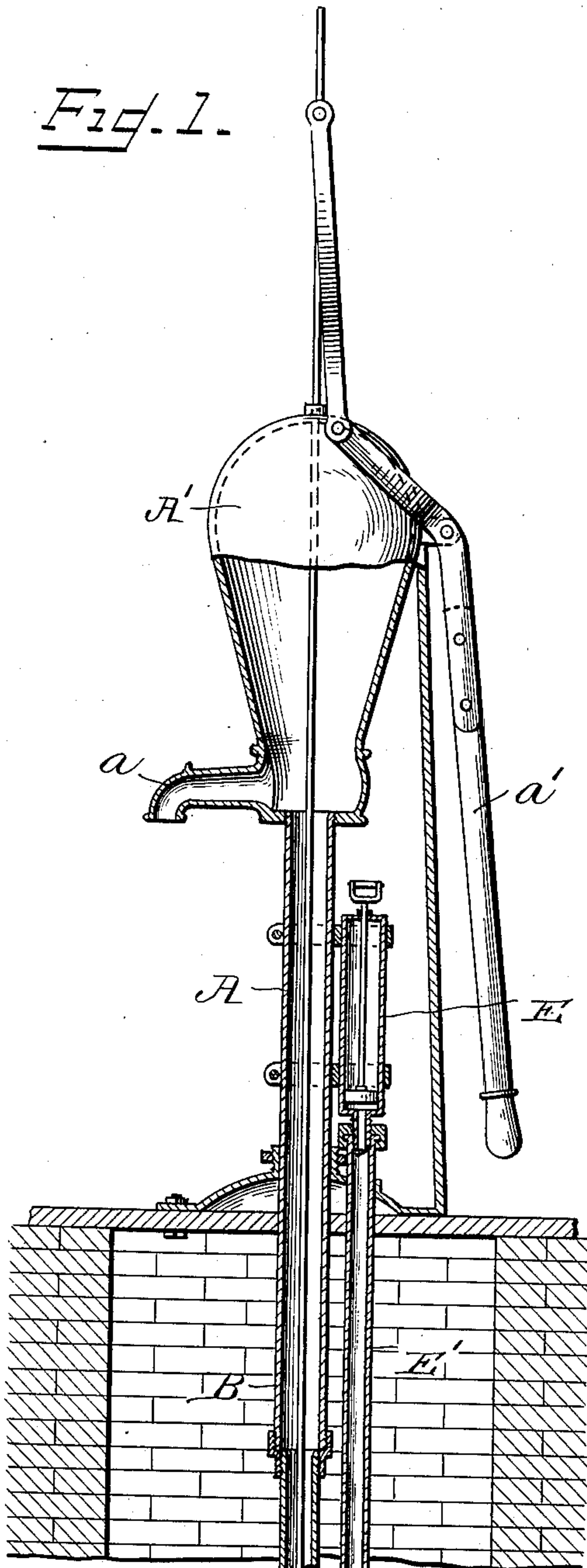
No. 840,064.

PATENTED JAN. 1, 1907.

H. JONES.  
PUMP.

APPLICATION FILED NOV. 21, 1905.

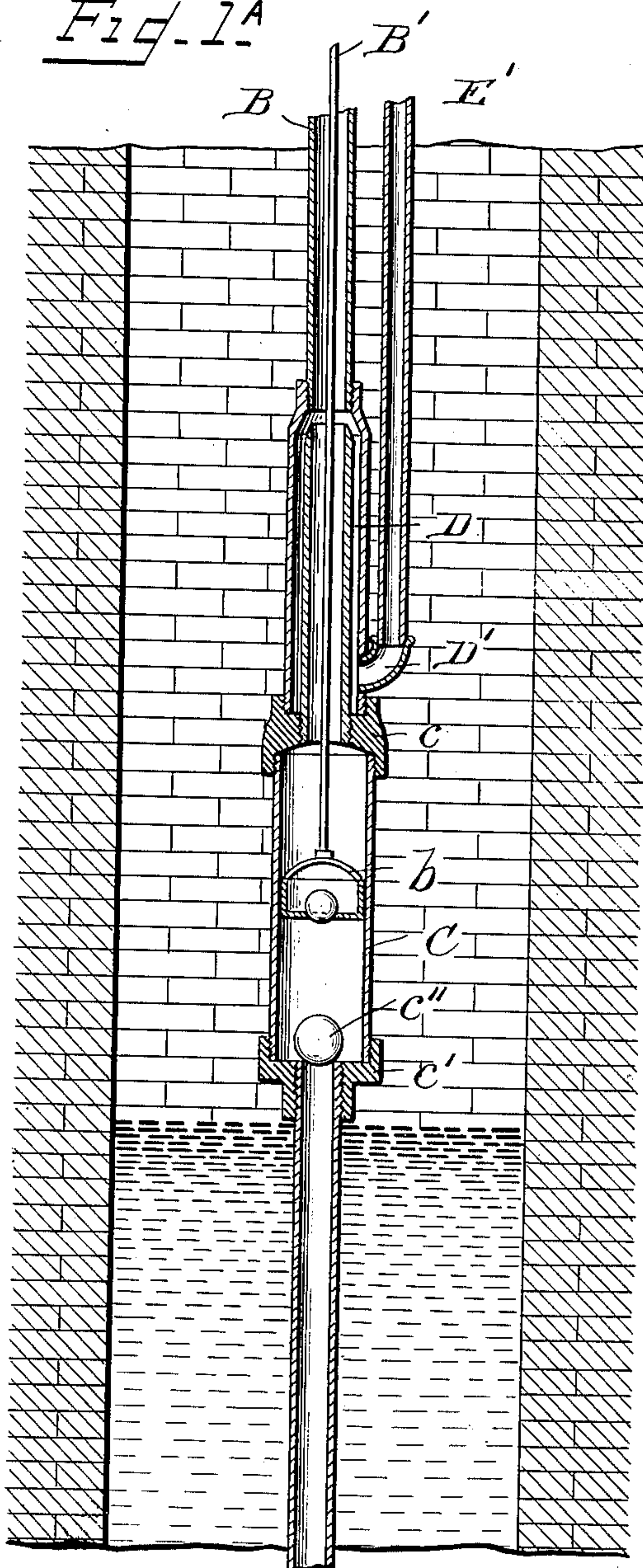
*Fig. 1.*



WITNESSES:

*Harry L. Amer.*  
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*Fig. 1<sup>A</sup>*



INVENTOR

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# UNITED STATES PATENT OFFICE.

HARRY JONES, OF WASHINGTON, DISTRICT OF COLUMBIA.

## PUMP.

No. 840,064.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed November 21, 1905. Serial No. 288,453.

*To all whom it may concern:*

Be it known that I, HARRY JONES, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My invention relates to an improvement in pumps; and it consists in the construction and arrangement of the several parts, which will be described in the specification, illustrated in the drawings, and particularly pointed out in the claims.

The object of my invention is to provide a pump which will produce a constantly-upward movement of a stream of water and delivery thereof from the spout regardless of the depth of the well or the distance of the source of supply from the surface of the earth.

Another object of my invention is to utilize the compression and expansion of air so as to demonstrate its usefulness in raising a column of water to great heights, thus saving some of the cost of the elevation of the same.

A further object of my invention is to so construct a pump that it shall be strong and durable, readily placed in position in a well, and easily understood and managed.

I accomplish these objects by the structure and the several parts thereof shown in the accompanying drawings, forming a part of my application, in which like letters refer to similar parts, and in which—

Figure 1 shows the portion of the pump usually above the earth's surface, and Fig. 1<sup>a</sup> shows the parts of the pump in the well.

Referring to the drawings, A represents the pump, having a superposed air-chamber A', a spout *a*, and a handle *a'*.

B represents the well-pipe descending into the well, and B' the pump-rod. At the lower end of the rod B' is a plunger *b*, moving in a cylinder C, which is screw-threaded and secured at its upper and lower ends to connections *c* and *c'*.

A valve *c''* is provided in the lower end of cylinder C. The well-pipe B descending into the well is secured to the cylinder C, being screw-threaded into connection *c*. An air-chamber D at its lower end is secured to the upper end of cylinder C in connection *c'* and at its upper end is screw-threaded to the well-pipe B.

E represents an air-pump, and E' its connecting-pipe. The pipe E' is connected to the chamber D at D'. The air-chamber D

and the pump E and pipe E' will perform very important functions in the operation of this pump.

Heretofore attempts have been made to utilize air to aid in raising water from wells and other sources of supply, but with indifferent success because of misunderstanding of the nature and character of the element or the necessary mechanism to secure desired and beneficial results. In this application I show and describe means and mechanism which do utilize the compressive and expansive qualities of air and do aid materially in raising the water in connection with the other mechanism shown and described. As heretofore stated, I desire to secure a constantly-upward moving stream of water and to discharge the same from the pump-spout, as described.

With the construction of pump and its auxiliaries shown and illustrated in the drawings and described in the specification the operation of the pump will be as follows: With the downstroke of the handle *a'* and upstroke of the plunger *b* water will be drawn into the well-pipe B and ultimately discharged from the spout *a*. At the same time water will also be forced into the air-chamber D and the pipe E'. On the next downstroke of the plunger the water in the pipe E' will be forced by the expansion and pressure of the air therein down through the opening D' from the pipe E' into the chamber D, and up and out of said chamber, and by the suction created in the pipe B up and out of the cylinder C, thus forcing a continuous stream out of the spout *a'*. Thus the upward stroke of the plunger produces an upward stream of water, and on the downward stroke of said plunger the compressed air in the pipe E' expands and forces the water cushioned thereby up and out of the pump-spout, giving a continuous stream. This result will be obtained as long as the handle of the pump is operated. An air-pump E is shown, and by it, if desired, a stronger pressure of air in the chamber D and pipe E' may be obtained.

Having thus fully described my invention and its operation, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a pump having a discharge-pipe of an air-chamber communicating with said discharge-pipe at or near its connection with the pump through a passage substantially parallel with said discharge-



pipe, which passage terminates at the end remote from the pump-body in an annular opening which surrounds the bore of the discharge-pipe.

5 2. The combination with a pump having a vertical discharge-pipe of an air-chamber communicating with said discharge-pipe at or near its lower end through a vertical passage which terminates at its upper end in an  
10 annular opening which surrounds the bore of the discharge-pipe.

3. The combination with a pump provided with a reciprocating piston, and having a discharge-pipe and an air-chamber communicating with said discharge-pipe at a point  
15 near its connection with the pump-body through a passage substantially parallel with said discharge-pipe, which passage terminates at the end remote from the pump-body  
20 in an annular opening which surrounds the bore of the discharge-pipe.

4. The combination with a pump provided with a reciprocating piston, and having a

vertical discharge-pipe of an air-chamber communicating with said discharge-pipe at 25 or near its lower end through a vertical passage which terminates at its upper end in an annular opening which surrounds the bore of the discharge-pipe.

5. The combination with a pump provided 30 with a conical head having an air-chamber therein, and a concentric discharge-pipe of an air-chamber communicating with said discharge-pipe at a point near its connection with the pump-body through a passage sub- 35 stantially parallel with said discharge-pipe, which passage terminates at the end remote from the pump-body in an annular opening which surrounds the bore of the discharge-pipe. 40

In testimony whereof I affix my signature in presence of two witnesses.

HARRY JONES.

Witnesses:

BLANCHE L. CHADWELL,  
PARKER H. SWEET, Jr.