J. Underwood.

Pump.

No. 85,548. Patented Jan. 5, 1869.

Fig: 1.

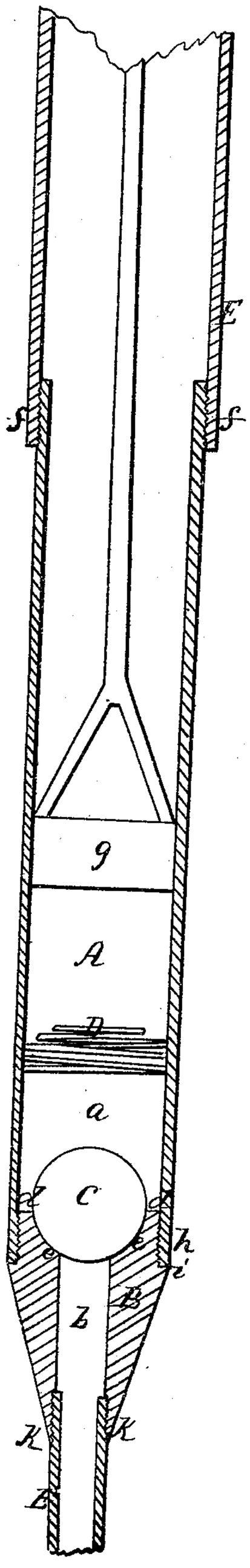
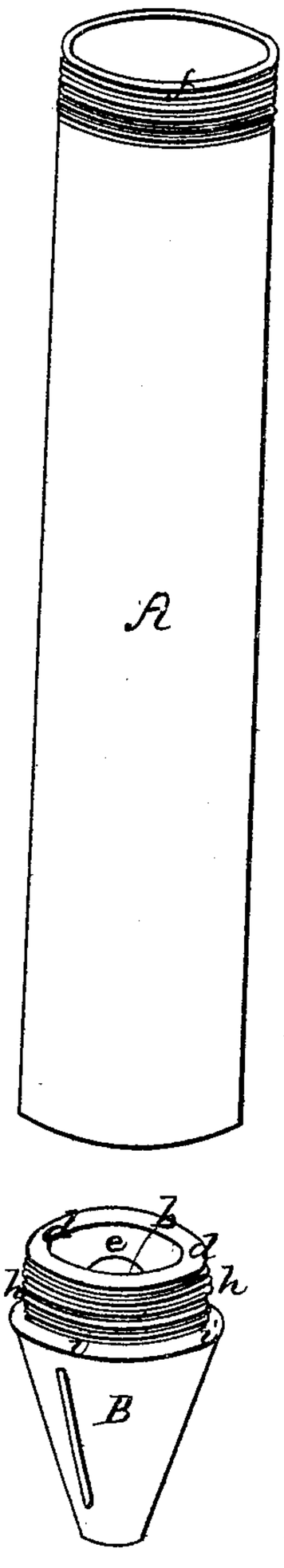


Fig: 2.



Witnesses;
W. T. Ryan
J. W. Cochran

Inventor;
James Underwood

United States Patent Office.

JAMES UNDERWOOD, OF MASON COUNTY, ILLINOIS.

Letters Patent No. 85,548, *dated January* 5, 1869.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES UNDERWOOD, of the county of Mason, in the State of Illinois, have invented a new and useful 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 drawings, making a part of this specification, in which—

Figure 1 is a vertical section of valve-chamber, piping, and coupling.

Figure 2 is a perspective view of valve-chamber or cylinder.

Figure 3 is a perspective view of coupling.

The cylinder or valve-chamber A is preferably of wrought-iron, of from three-sixteenths to one-fourth of an inch in thickness, and from three to four inches in diameter of bore, and from one to two feet in length, and has smooth surfaces throughout.

A thread, *f*, is cut on the outside of the upper end of the cylinder, and occupying a width of about one and one-fourth inch, for the purpose of screwing the cylinder into the upper pipe, E, connected with the pump proper above.

A similar thread is cut on the inside of the lower end of the cylinder A, at *h*, and of the same width, by which to screw the cylinder on to the upper part of the coupling B. An ordinary piston and valve are used in the cylinder.

The coupling B is also preferably of malleable iron, in shape a truncated cone, having a perforation through its axis, of the diameter of one and one-half inch, more or less, (as may be requisite for the flow of the water.)

The coupling is screwed into the base of the cylinder until the end of the cylinder comes tight against the shoulder *i* of the coupling, the outer surfaces coming flush.

Cut in the lower end of the bore of the coupling is a thread, *k*, for the purpose of screwing the coupling on to the gas-pipe F.

The upper end of the bore *b* in the coupling is widened or reamed out into a funnel or hemispherical hollow, *e e*, of about two and one-fourth inches in diameter, to receive the rubber or gutta-percha ball-valve, C, of a similar diameter.

I sink a flute into the surface of the coupling, running parallel with the axis of the coupling, for the convenience of affording a hold for the tongs in screwing the coupling on to the cylinder or piping.

To prevent the undue play of the ball-valve, a wire helix, D, is placed above it, (in the cylinder,) about two and a half inches above the ball C.

The pipe F, running (with connections) to the water or bottom of the well or bore, is an ordinary iron gas-pipe, with a bore of from one and one-fourth inch to a larger size, according to requirements, and the upper end of the same is cut with thread and screws into the orifice *b* of the coupling B.

For a dug or bored well, lead water-piping may be more economically used, as in that case the pipe does not need to be driven.

The upper piping, E, above the cylinder, is made of a larger calibre than that of the cylinder, so much only as to screw, with a thread, on to the outer side of the cylinder, at *f*, so that the piston and valve and ball-valve may be readily drawn to the surface of the ground for repairs, if needed, even when the cylinder may be situated many feet under ground, as in the case of a very deep drive or bore.

This pump, which may be readily adapted for suction or for lifting water, is calculated for wells of any depth, successive lengths of pipe being screwed on as the pipes go beneath the ground.

Having thus fully described my invention,

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

The combination of the pump A, truncated cone B, rubber-ball valve C, and spiral spring D, substantially in the manner and for the purpose as herein shown and described.

Witnesses: JAMES UNDERWOOD.

JOHN C. BENNETT,

F. G. COX.