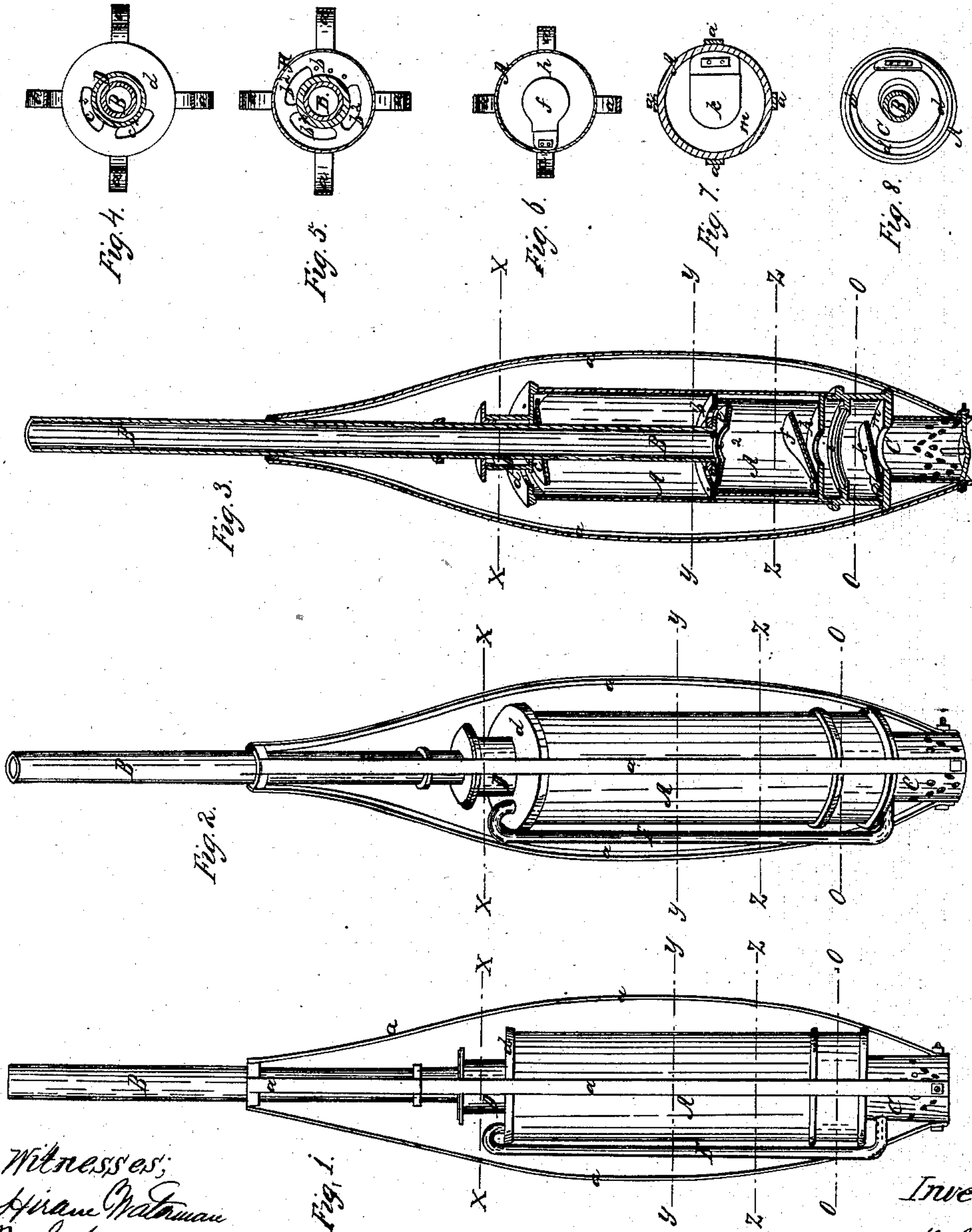


W. Peck,

Pump Lift,

N^o 26,705.

Patented Jan. 3, 1860.



Witnesses;
Hyman Maltman
Rev. L. Anderson

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UNITED STATES PATENT OFFICE.

WALTER PECK, OF ROCKFORD, ILLINOIS.

PUMP.

Specification of Letters Patent No. 26,705, dated January 3, 1860.

To all whom it may concern:

Be it known that I, WALTER PECK, of Rockford, county of Winnebago, 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 and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

10 The nature of my invention consists in an improved construction of double acting force pumps for deep drilled wells as will be hereinafter more fully described.

To enable others skilled to make and use my invention, I will proceed to describe its construction and operation referring by letters to the accompanying drawings forming part of this specification and in which,

Figure 1, represents a side elevation of my improved pump. Fig. 2, represents a perspective elevation of the same. Fig. 3, represents a vertical sectional perspective through the center of the pump. Fig. 4, represents a cross section at line x, x . Fig. 5, represents a cross section at y, y . Fig. 6, represents a cross section the line z, z . Fig. 7, represents a cross section at the line o, o , and Fig. 8, represents a bottom view of upper valve and top plate of the cylinder of the pump.

Similar letters denote the same parts in the different views.

A, represents the barrel or cylinder of the pump the lower end of which is furnished with a perforated receiving or suction pipe, C, and its upper end with a cap plate, d , in which are perforations c^2, c^2 , (see Fig. 4) and on which is formed a stuffing box D, (see Figs. 2 and 3) through which works the hollow piston rod, B, carrying at its lower end the piston, A^2 .

a, a , are the steadying straps (which are fully described in another patent of which they are the subject and need not be here).

45 E, (see Figs. 1 and 2) is a pipe communicating at its upper end with the cylinder, A, through the apertures, c^2 , and at its lower end with the suction pipe, C.

In the bottom plate, m , of the cylinder, A, is formed a valve opening furnished with an ordinary flap valve, k , opening upward:— In the bottom plate, n , of the hollow piston, A^2 , is another valve opening furnished with another and similar valve, f .

55 i , is an annular flange to prevent the bottom of the hollow piston, A^2 , from com-

ing down onto the lower valve, k , and injuring it.

In the upper head, b , of the hollow piston, A^2 , are formed (around the rod B,) a series of openings, b^2 , (see Fig. 5) which are closed at proper times by a valve, e , (see Fig. 3) opening downward and having its central portion, e^2 , cut away to leave always a communication between the pipe, B, and hollow piston, A^2 . The valve, e , which closes at suitable intervals the openings, c^2 , in the top plate, d , has its central portion cut away to accommodate and moves up and down around the hollow pipe, B, as seen at Figs. 3 and 8.

From the foregoing explanation in connection with the drawings, the construction and arrangement together of the several parts of my improved pump will be readily comprehended. I will now describe its operation.

At Fig. 2, the hollow piston is just finishing its downward stroke as the hollow piston rod, B, begins to ascend carrying with it the hollow piston, A^2 , the valves, e , and, f , close and, e , opens whereby all the body of water contained in the cylinder, A, between the top, b , of hollow piston and the top, d , of cylinder is forced up through the small tube or hollow piston rod, B, and out at its upper end; while at the same time the water from below the cylinder rushes in through the valve, k , to fill the vacuum produced by the ascension of the hollow piston, A^2 . When the piston has reached the top of the cylinder and begins to descend, the valve, e , closes up the openings, b^2 , in the top, b , of piston, A^2 ; valve, k , closes and valve, f , opens; whereby all the body of water contained in the cylinder, A, between its bottom, m , and the bottom, n , of the piston is caused to rush up through the small pipe or hollow piston rod, B. Meanwhile the valve, e , being open the water rushes in through the openings, c^2 , to fill the vacuum produced in the cylinder, A, by the descension of the hollow piston; as the piston begins to ascend the operation first described, is repeated and then the second and so on as long as the piston is caused to move up and down in the cylinder.

When there is a sufficiency of water in the bottom of the well to insure the constant immersion of the upper valve holes, c^2 , in the top plate of the cylinder the pipe, E, need not be employed but where there is not then the side pipe, E, is necessary to supply the upper end of the cylinder, A.

It will be understood that my improved pump is particularly adapted to deep drilled wells, and that hence the cylinder, A, is very small, and of just sufficient length to allow the stroke of the piston, while the hollow piston rod, B, may be a hundred and more feet in length.

It will be seen from the description given of my improved pump that by the employment of one simple cylinder in connection with the hollow piston, piston rod, and series of valves arranged all in the cylinder as hereinbefore specified, I produce a double acting force pump as effective as and much more simple than those now employed while it is applicable to drilled wells of any depth.

Having described the construction and operation of my improvements, I do not wish to be understood as laying claim to any new principle of operation in the pump which I have herein described but

What I do claim as my improvement in pumps for drilled wells is—

The construction or arrangements of the valves *c*, *e*, *f*, and *k*, within the cylinder, A, in combination with the hollow piston, A², and hollow piston rod, B, the whole constructed to operate as specified.

WALTER PECK. [L. s.]

Witnesses:

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