

(No Model.)

A. PALMER.

PUMP.

No. 318,018.

Patented May 19, 1885.

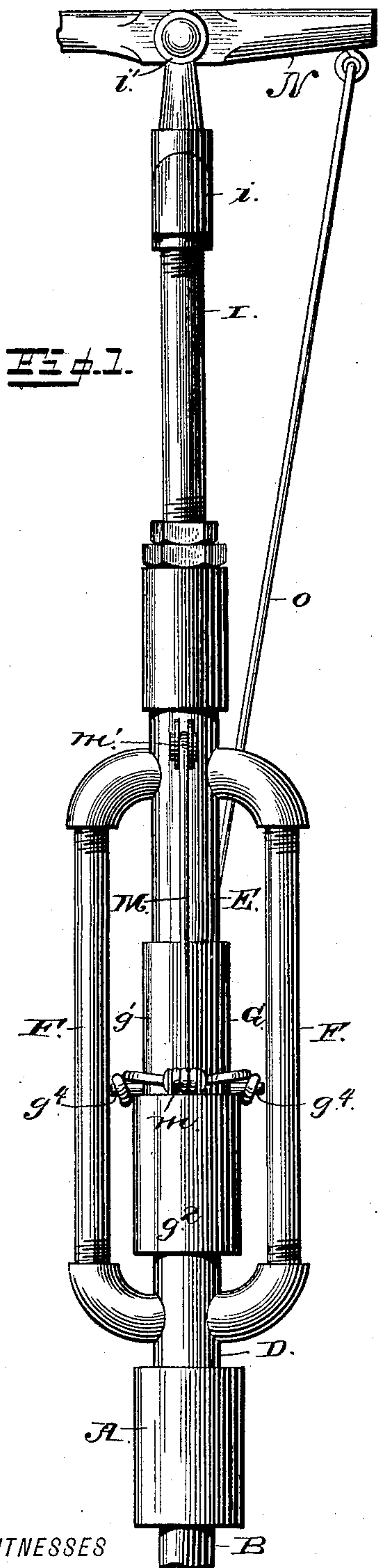


Fig. 1.

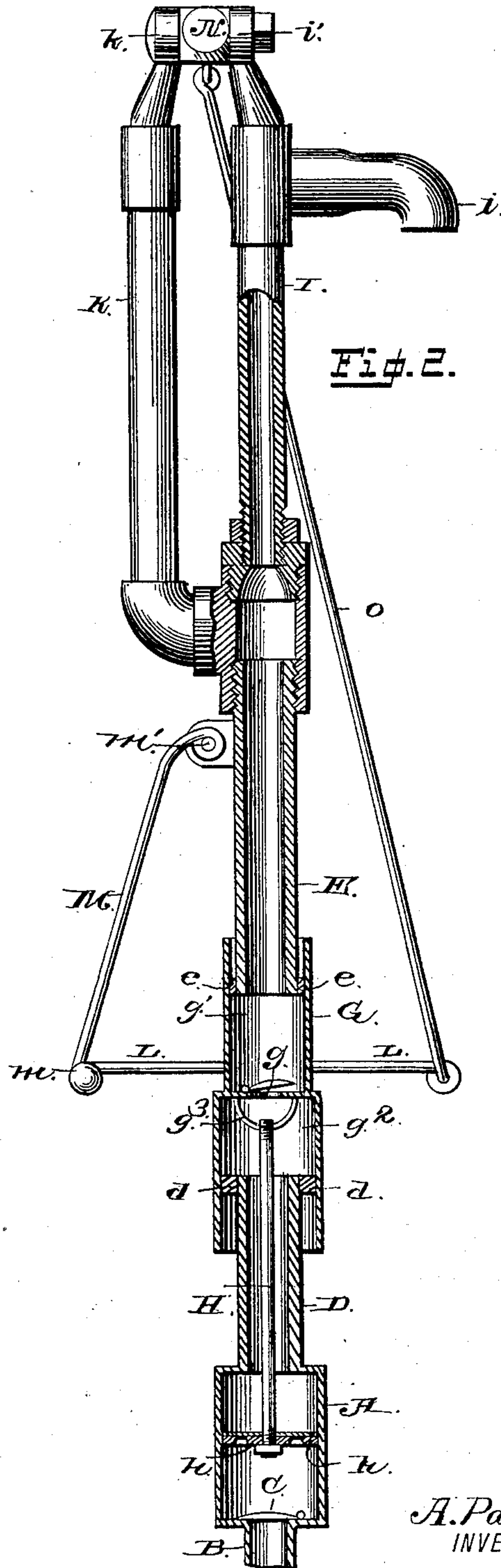


Fig. 2.

WITNESSES
W. E. Fowler.

E. L. Siggers.

A. Palmer.
INVENTOR

by C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

ALONZO PALMER, OF THREE RIVERS, MICHIGAN.

PUMP.

SPECIFICATION forming part of Letters Patent No. 318,018, dated May 19, 1885.

Application filed February 6, 1885. (No model.)

To all whom it may concern:

Be it known that I, ALONZO PALMER, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented a new and useful Improvement in Pumps, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in pumps; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a pump that embodies my invention. Fig. 2 is a vertical sectional view of the same, taken at right angles to Fig. 1.

A represents a cylinder, from the lower end of which depends a suction-pipe, B. An inwardly-opening valve, C, is secured in the bottom of the cylinder A, and from the upper side of said cylinder extends the pipe D. A vertical pipe, E, extends in a line with the pipe D, and the ends of the said pipes are supported at a suitable distance from each other by the yoke F.

G represents a cylinder, which is open at both ends and provided with a valved opening, g , at its center. The upper portion, g' , of this cylinder is of much smaller diameter than the lower portion, g'' . The lower end of the pipe E is provided with packing at e , for working in the upper portion of the cylinder, and the upper end of the pipe D is provided with packing d , for working in the lower portion of the cylinder.

g^b represents a bail, that depends from the central head of the cylinder G, and to this bail is secured the upper end of a rod, H, the lower end of which is provided with an inwardly-opening valved plunger, h , which works in the cylinder A.

To the upper end of the pipe E is secured the lower end of a pipe, I, which has a discharge-spout, i , and which has at its upper end a bearing, i' . A standard, K, is secured to the pipe I at its lower end, extends vertically parallel with the pipe I, and at its upper end is provided with a bearing, k . The cylinder G is adapted to play vertically upon

the pipes D E, and for this purpose is provided with trunnions g^t on opposite sides, which bear in the sides of the divided lever L. One end of the lever L has pivoted to it the lower end of a rod, M, as at m , and the upper end of the rod M is pivoted, as at m' , between ears that project from the pipe E. A handle, N, is fulcrumed between the bearings i' and k , and is connected by a rod, O, with the free end of the lever L.

The operation of my invention is as follows: An upward movement of the cylinder G and plunger h fills the cylinder A and the lower portion of the cylinder G with water, and forces the water contained in the upper portion of the cylinder upward through the discharge pipe and spout. Downward movement of the cylinder G and plunger h closes the valve C, and the water in the lower portion of the cylinder is forced into the upper portion thereof, which being smaller than the lower section, a portion of the water is forced up and discharged through the spout. It will thus be understood that water is discharged by both the upward and downward movement of the cylinder, and a continuous flow of water through the discharge-spout is secured. A pump thus constructed is a combined force and suction pump, and is adapted for use in wells of any depth, and for forcing water through hose, and for other purposes for which a constant and strong flow of water is necessary.

Having thus described my invention, I claim—

1. The movable cylinder composed of sections of unequal diameters, in combination with pipes having packings for fitting in the sections of the cylinder, a stationary cylinder secured to the lower end of one of the pipes, and a valved plunger which operates in the stationary cylinder, and which is connected to the movable cylinder, and is operated thereby, substantially as described.

2. The combination of the cylinder A, having valve C, pipe D, cylinder G, having an upper and a lower section, the lower one of which is of greater diameter than the upper section, packing on the pipe D, for working in the lower section, valve g in the said cylinder, a plunger, h , that operates in the cylinder A,

and is connected to and operated by the cylinder G, pipe E, having a packing at its lower end for working in the upper section of the cylinder G, and a crank handle or lever for
5 operating the cylinder G, substantially as described.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in presence of two witnesses.

ALONZO PALMER.

Witnesses:

A. C. TITUS,

E. M. GEORGE.