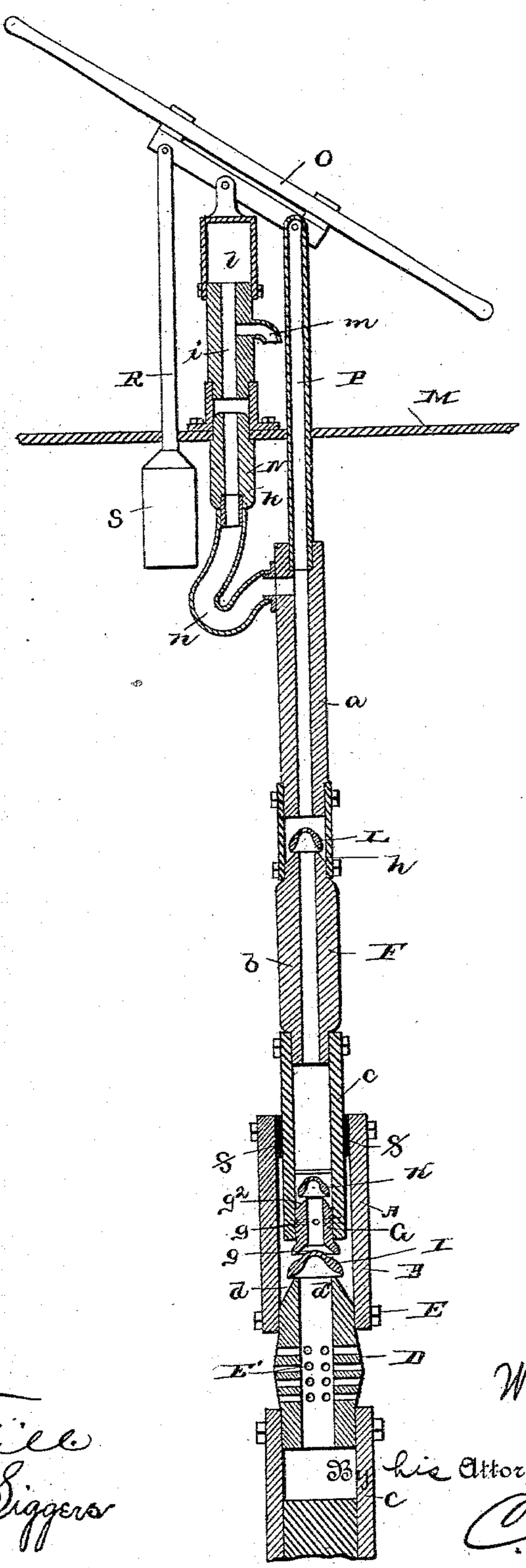
(No Model.)

W. W. CULLY.

PUMP.

No. 356,750. Patented Feb. 1, 1887.



Witnesses

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WILLIAM WALLACE CULLY, OF WEST PLAINS, MISSOURI.

PUMP.

SPECIFICATION forming part of Letters Patent No. 356,750, dated February 1, 1887.

Application filed September 13, 1886. Serial No. 213,428. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALLACE CULLY, a citizen of the United States, residing at West Plains, in the county of Howell and State of Missouri, have invented a new and useful Improvement in Pumps, of which the following is a specification.

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.

The accompanying drawing is an elevation, partly in vertical section, of a pump embodying my improvements.

A represents the pump-cylinder, which is rigidly secured at the bottom of the well or other source of water, and comprises the cylindrical sections B and C and the sleeve D, which connects the said sections together. The sleeve D is tapered from the center toward the ends, and the ends of the said sleeve are inserted in the opposing ends of the sections B and C, and are rigidly secured thereto by means of transverse bolts E. The central portion of the sleeve D, between the ends of the sections B and C, is provided with a series of inlet-openings, E'. The upper end of the sleeve D, which projects in the lower end of the upper section, B, forms the frustum of a cone, as at *d*. The said sleeve is provided with a central bore or opening, *d'*, which extends throughout its entire length, and the sleeve thus communicates with and connects the upper and lower sections of the submerged cylinder.

F represents a tube, which is composed of a suitable number of separable sections *a*, *b*, and *c*. The lower section, *c*, is adapted to reciprocate vertically in the upper section, D, of the cylinder, the latter being provided at its upper end with a packing-head, *f*, to prevent leakage. In the lower end of the tube F is inserted a hollow cylindrical plug, G, which is secured to the said tube F by means of bolts *g*. The said plug has its lower end concave, as at *g'*, and the upper end of the plug forms the frustum of a cone, as at g^2.

I represents a valve, which is concavo-convex in cross-section and is placed upon the upper end of the sleeve D, and is adapted to operate between the said sleeve and the lower end of the tube F.

K represents a similar valve, which is located in the lower end of the tube F, above the upper end of the plug G.

The sections *a*, *b*, and *c* of the tube F are secured together by means of bolts, as shown, and between two of the said sections is located a valve, L, which is also concavo-convex in cross-section, and is seated upon a conical projection, *h*, with which one of the sections is provided at its upper end.

M represents a supporting-platform, to which is secured a vertical pump-stock, N, which is made of separable sections *i*, *k*, and *l*, bolted together, as shown. The said pump-stock is provided with a discharge-spout, *m*, and a flexible tube, *n*, connects the lower end of the pump-stock with the upper end of the piston-tube F.

On the upper end of the pump-stock is fulcrumed an operating-lever, O, which is connected to the upper end of the piston-tube F by means of an iron pipe, P, the lower end of which is open and communicates with the bore of the piston-tube. A rod, R, is connected to the operating-lever O, on the opposite side of the pump-stock from the pipe P, and to the lower end of the said rod is attached a weight, S, which serves to counterbalance the piston-tube, and thus enables the lever O to be easily operated, so as to reciprocate the piston-tube in the submerged cylinder A.

The operation of my invention will be very readily understood. On the downstroke of the piston-tube the valves K and L are raised and the valve *i* is closed, forcing the water in the upper section of the cylinder A upwardly in the piston-tube, and on the upstroke of the latter the valve I is raised and the valves K and L are lowered, thereby causing water to be drawn into the cylinder A. Continued operation of the lever O causes the water to be forced upwardly through the piston-tube and from the latter through the flexible tube *n* into the pump-stock, from whence it escapes through the spout *m*. The pipe P, at the upper end of the piston-tube, forms an air-chamber to compress air in the upper portion of the piston-tube, above the valve L, thus causing a continued stream of water to be

forced through the spout of the pump when the lever O is operated.

By making the pump-cylinder and the piston-tube of separable sections connected together by bolts, the pump may be readily taken apart in order to clean or repair it and in order to pack it in a small space for transportation.

Having thus described my invention, I claim—

1. In combination with the cylinder comprising sections B C and the connecting-sleeve D, the latter perforated to provide inlet-openings for the cylinder, the end of the sleeve within section B being formed frusto-conical to provide a valve-seat, the concavo-convex valve I above the end of the sleeve D, the piston or tube F, having its lower end working within the section B of the cylinder, the plug G at the lower end of the tube, said plug being concaved at its outer end and formed frusto-conical at its inner end, and a valve, K, above the inner end of the plug, as set forth.

2. In combination with the cylinder having the valve I, the vertically-movable hollow piston or tube F, movable within the cylinder and carrying a valve, K, at its lower end, the valve L in the piston or tube some distance above valve K, the pipe P, connected to the upper end of the piston or tube and forming an air-chamber and movable with the piston or tube, the rigid pump-stock, a flexible-tube connection between the pump-stock and the piston or tube, the said flexible tube establishing communication between the piston or tube F and the pump-stock, and operating-levers for the piston or tube connected with the pipe P, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM WALLACE CULLY.

Witnesses:
JAMES A. LOGAN,
SETH BACON.