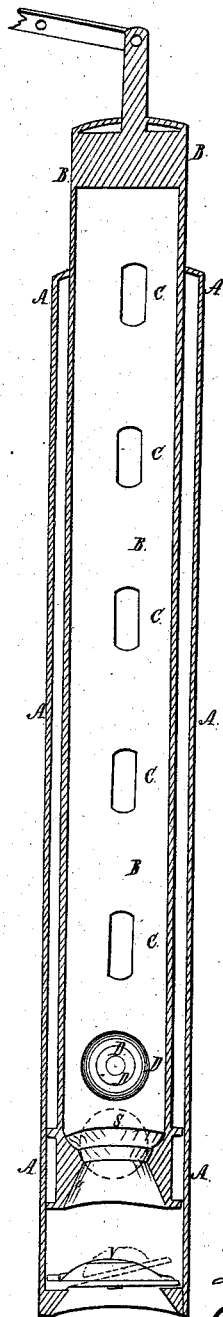


H. Goddard

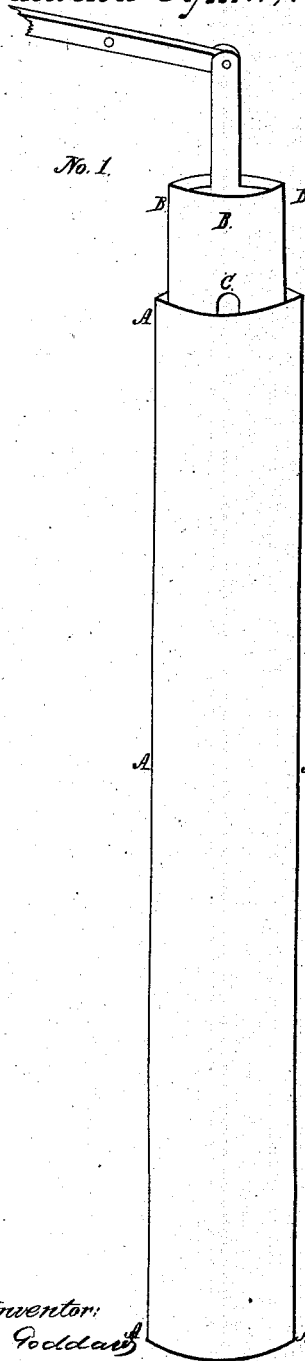
Oil-Pump Piston

Patented Apr. 11, 1865.

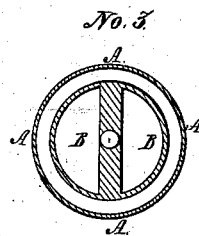
No. 17,200.



No. 2.



No. 1.



No. 3.

Witnesses:

L. W. Ziegler.

Inventor:

Geo. S. Thomas *Hampton Goddard*

UNITED STATES PATENT OFFICE.

KINGSTON GODDARD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 47,200, dated April 11, 1865.

To all whom it may concern:

Be it known that I, KINGSTON GODDARD, of the city and county of Philadelphia, and State of Pennsylvania, 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 perspective view, Fig. 2 is a longitudinal elevation, and Fig. 3 is a transverse section, thereof.

In said drawings, A is the pump-tube, with its valve V, as ordinarily constructed. B is the piston-rod, to which is attached the piston whose seat S is occupied during its upward stroke by the gravitating ball-valve D, the said valve being raised, as shown in Fig. 2, when the piston is descending. The piston-rod is a hollow tube, and has in it perforations C C C, &c., which may be of any desired size and number. By means of these perforations the fluid which is being lifted flows freely from the inside of the tubular piston-rod to the space included between the said rod and the pump-stock A, while the requisite rigidity of the rod is secured by its form and proportions, the extent of perforation being such as to unite the requisite strength inherent in the tubular form with sufficient lightness. The fluid raised is received from the upper orifice or head of the pump-stock by means of a spout or its overflow, and the

manner of the discharge, not being an essential feature of the invention, has not been shown in the drawings. The same remark applies as to the mode of raising the piston, which is a matter that will be determined by the duty to be performed, the purpose, capacity, &c.

I have shown a sketch of a handle with an orifice for a fulcrum-rod and the handle pivoted to a post which is attached to the bridge on the upper end of the tubular piston-rod. It is not desired to obtain the discharge from the upper end of the piston-rod, which is a common feature in pumps; but the object of the invention is to obtain the practical mechanical advantages of the tubular form in the economical use of material in combining strength with lightness, the latter quality being further developed by the perforations, while the direct effect of the said openings in causing a free flow of the fluid is not a mere attendant circumstance, but a point I desire to secure.

Having thus described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The construction and arrangement of the tubular and perforated piston-rod, substantially as described.

KINGSTON GODDARD.

Witnesses:

J. W. QUIGGLE,
GEO. G. THOMAS.