W. PAINTER.

Oscillating-Pumps.

No. 133,048. Patented Nov. 12, 1872.

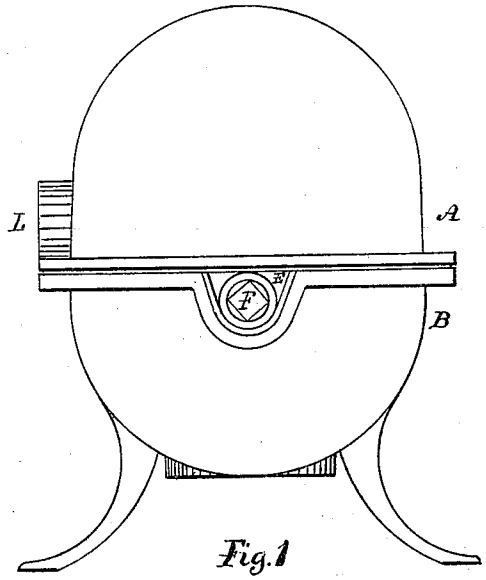

Fig. 1

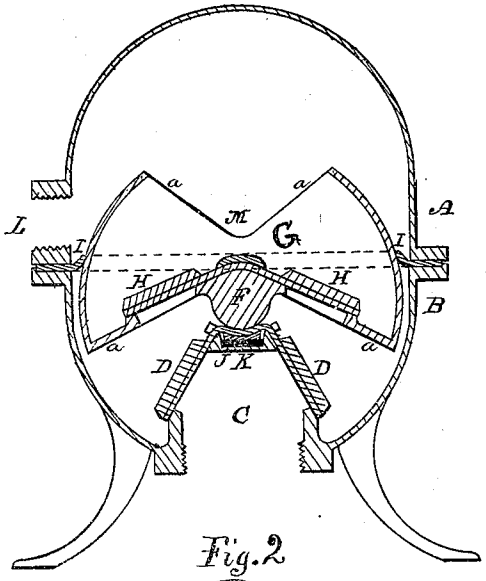

Fig. 2

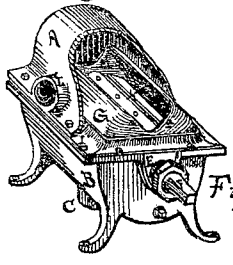

Fig. 3.

Witnesses:
Louis R. Keizer
H. Pond

Inventor:
William Painter

UNITED STATES PATENT OFFICE.

WILLIAM PAINTER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO LEWIS R. KEIZER, OF SAME PLACE.

IMPROVEMENT IN OSCILLATING PUMPS.

Specification forming part of Letters Patent No. 133,048, dated November 12, 1872.

To all whom it may concern:

Be it known that I, WILLIAM PAINTER, of Baltimore, Maryland, have invented certain Improvements in Oscillating Pumps, of which the following is a specification:

The object of my invention is to so improve the construction of double-acting oscillating pumps as to increase their efficiency and convenience, and cheapen their manufacture. The novelty consists in the use of a section of a hollow cylinder, oscillating on its longitudinal axis, in connection with a stationary packing and suitably-arranged valves.

In the annexed drawing, Figure 1 is an elevation, and Fig. 2 a vertical transverse section, showing clearly the construction of pump and the nature of my improvements. Fig. 3 is a perspective view of my pump, a portion of the upper shell being broken away to exhibit the oscillating cylindrical section.

Prior to my invention pumps of this class have been constructed with an outside case or cylinder, closed by heads, and bored out to receive a flat piston, usually packed with leather, carrying valves, and oscillating on a central shaft or axis.

The points of difference and the nature of my improvements will be clearly understood by reference to the drawing, in which A B, Figs. 1 and 2, are two sections of the shell or outer casing of the pump, each of which is provided with a flange, and when the two are bolted together they form an oblong cylinder with closed ends. The lower section B contains the induction-chamber C and valves D D, opening upward. At each end is a depression for the reception of bearings E, through which pass the ends of the shaft F. The joints between these bearings and the case are packed with strips of leather or rubber, and they are furnished with stuffing-boxes in the usual manner. Attached to the shaft F is the sectional hollow cylinder G, Fig. 2, the outline of its closed ends being clearly shown at *a a a a*. Its lower edges are connected to the central shaft by plates, through which are ports, closed by valves H H. The two sections A B are bolted firmly together, and the joint between their flanges packed with leather, the inner edges of which are turned up, as shown at I I, and rest against the periphery and ends of cylinder G, thereby answering the double purpose of packing the joint between the two sections, and also between the cylinder G and the case. The leather forming the lower valves is in one piece, and passes over the abutment J, thereby packing the joint between it and shaft F. Within a groove in the abutment, and beneath the leather packing, is a plate, K, supported on springs, which have the effect of holding the leather packing in contact with shaft F. The outer ends of shaft are squared for the reception of a handle, by which the cylinder is caused to oscillate in its bearings in contact with the packing I I. The upper section of case A forms the air-chamber, and is provided with a discharge-opening, L.

By the oscillation of cylinder G with its valves H H, water is drawn into its interior, passes out through opening M into air-chamber, and thence through the discharge.

By this construction I am enabled to dispense with the usual boring out, and much of the necessary fitting incident to pumps of this class. The two sections of case being cast separately, each in a single piece, little is required except attaching the lower valves and bolting the flanges together. The cylinder G is turned off with the greatest facility, and the aggregate of labor required materially lessened.

By removing the top section the entire working parts—oscillating cylinder and both sets of valves—are exposed for examination or repair.

I am aware that oscillating pumps are well known, and that in the ordinary reciprocating piston and cylinder pump it is common to turn off the piston or plunger, and work it through a stationary packing or stuffing box in lieu of boring out the cylinder. I therefore make no claim to these features as usually employed; but—

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with the shells A B and the oscillating cylindrical section G, the stationary packing I, made from a single piece of leather, substantially as and for the purpose set forth.

2. The shell of the pump, constructed in two

parts, A B, with the joint parallel with the axis of the shaft F, and with the abutment K in the lower part to receive the valves D, combined with the stationary packing I and the cylindrical section G, whereby an oscillating pump may be constructed without boring or turning its inner surface, as set forth.

3. The pump-shell, made in two parts, A B, with horizontal joint, and the part A, constructed with the outlet L at the side, so as to form an air-chamber in said part A, as set forth.

4. The leather of valves D D, in one piece, passing over abutment K, combined with spring J to pack the shaft F, as set forth.

5. The arrangement, in relation to each other, of the pump-shell A B, constructed with the joint parallel with the axis of the shaft F; the abutment K in the part B; the cylindrical section G, constructed with the longitudinal opening M and the valves H H located within said section, and the bearings E fitted in the ends of part B, whereby removal of the top part A renders all of the working parts of the apparatus directly accessible.

WILLIAM PAINTER.

Witnesses:

LEWIS R. KEIZER,

H. BOND.