R. Gilbert,

Rotary Pump.

No. 16,974. Patented Apr. 7, 1857.

Fig. 1.

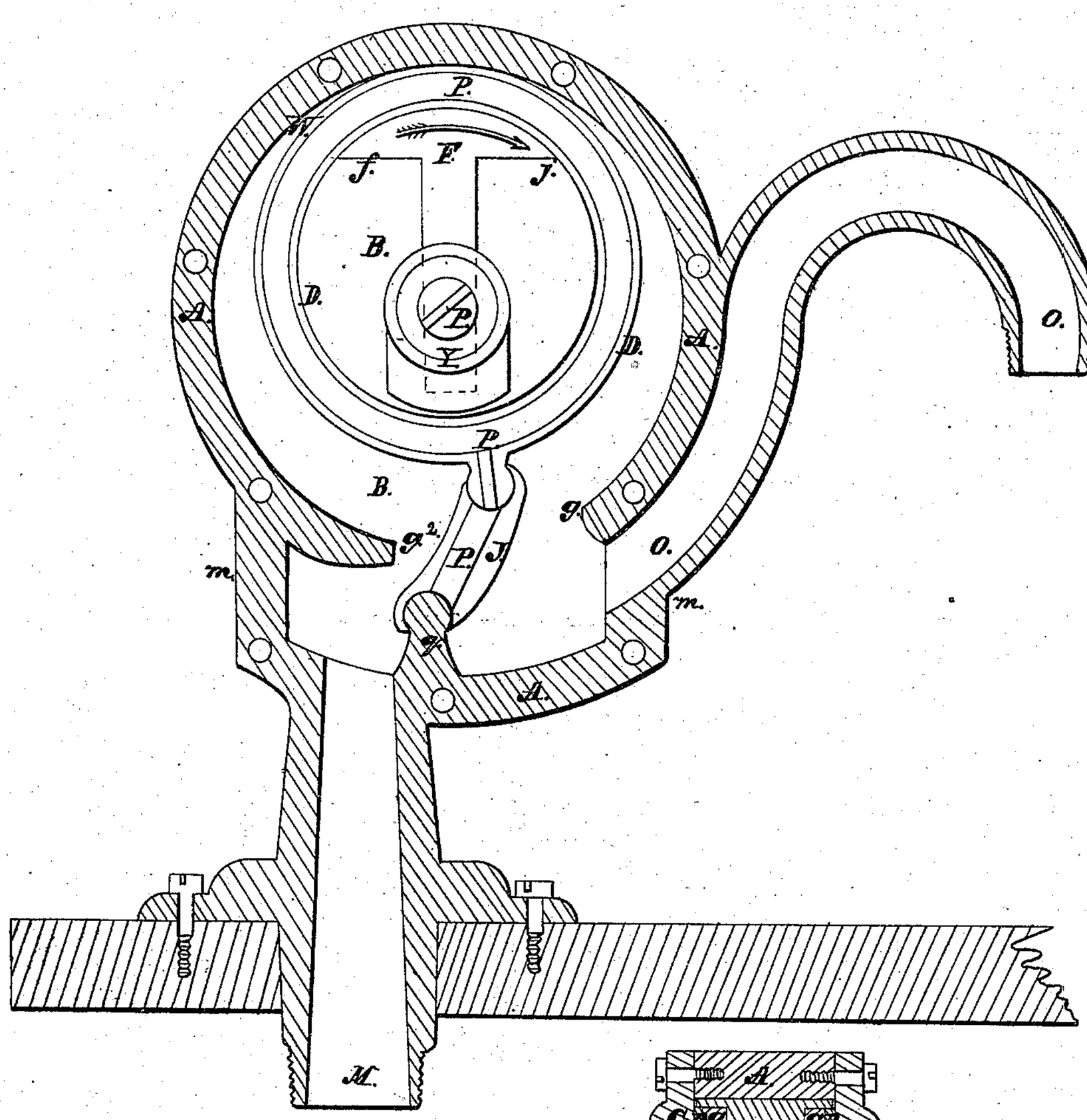
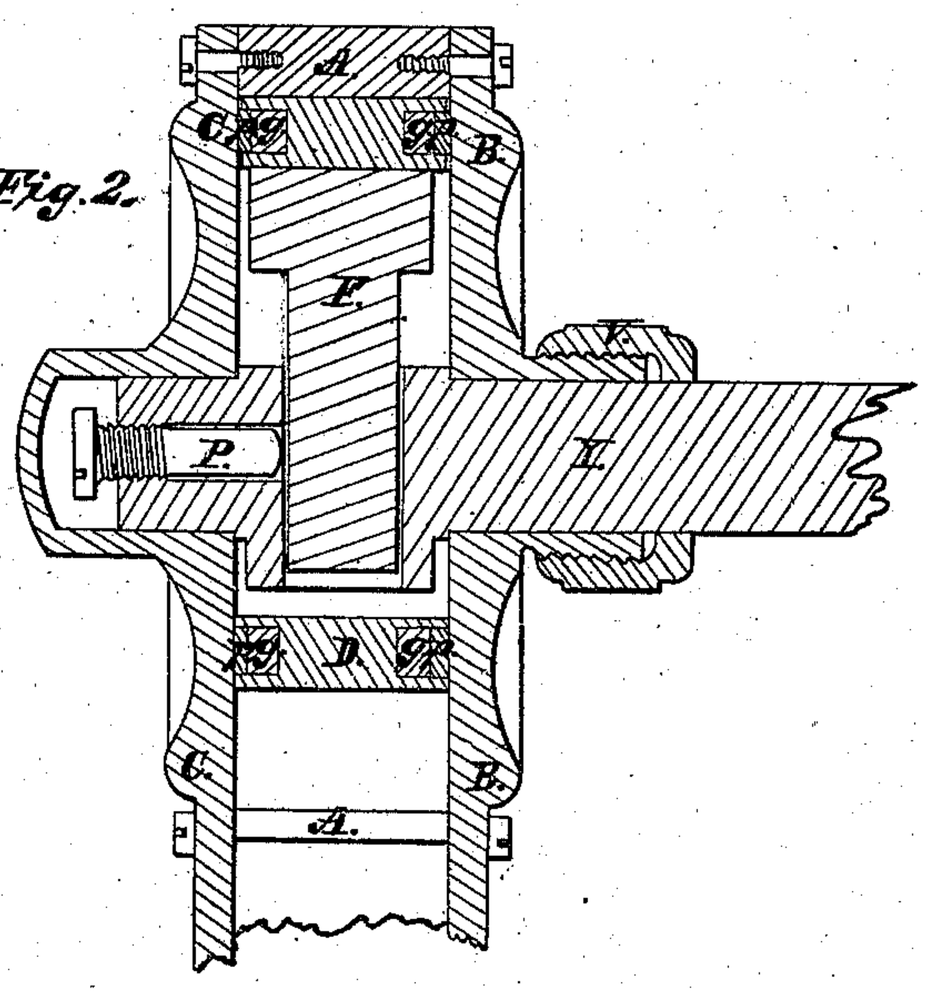


Fig. 2.



UNITED STATES PATENT OFFICE.

RICHARD GILBERT, OF ROCHESTER, NEW YORK.

ROTARY PUMP.

Specification of Letters Patent No. 16,974, dated April 7, 1857.

To all whom it may concern:

Be it known that I, RICHARD GILBERT, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Rotary 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.

The nature of my invention consists in combining with the annular piston of rotary pumps, a vibrating link, which combination is found to work much easier, and much more perfectly than that of the annular piston and radial arm.

Figure 1 is a vertical section in the line of rotation, showing the annular piston D, arm F, hinged link J, the end of the shaft Y, and the set-screw P. Fig. 2, is a transverse section parallel with the axis of the shaft Y, showing the cylinder or shell A, the disks, or heads B, and C, the ring or piston D, the metallic packing *p*, the elastic ring *g*, the arm F, and set screw P, by which it is adjusted, the stuffing-cap V, and the shaft Y.

The pump consists of a cylinder or shell A, with an off-set *m*, as seen in Fig. 1, said cylinder being closed at the ends by heads B and C. The shaft Y, has its axis in the center of the shell A, and the arm F, is made to pass through the shaft, as seen in Fig. 2, and when properly adjusted, is held by the set-screw P, the ring D, has a projection *d*, to which the upper end of the vibrating-link J, is hinged, said projection is a section of a round rod, riveted, or otherwise fastened to the periphery of the ring D, the projection *q*, is made and attached, in the same manner, to the shell A. The vibrating-link J, is made by drilling a hole in each end of a piece of metal, of proper size and length, to fit the projections *d*, and *q*, then cutting off an arc from each hole, of about one third, more or less, as seen in Fig. 1. There is a recess turned in both edges of the ring D, as seen in Fig. 2, of sufficient depth to receive the elastic ring *g*, and metallic ring *p*. The projection *d*, and the link J, may also be grooved and packed, as seen in Fig. 1.

M, is the induction, and O, the eduction pipe.

When the arm F, is perfectly adjusted, the conjugate line of the shell A, and the ring D, will be opposite that of the ring D, and the arm F, but as the parts wear away, this line changes, yet still preserving a perfect bearing between the ring, and shell, which may be seen from the following, viz: Suppose the arm F, to be set in one fourth of an inch, and the shaft is turning as indicated by the arrow, the pressure of the water in the eduction compartment, forces the ring D, to the left, consequently the conjugate line of D, and F, will come toward the point *j*, while that of D, and A, will recede toward *w*. The wear between F, and D, and D and A, is very slight, but as above shown, is compensated for, when the parts shall have worn so as to become too loose, the arm F, may be thrown out.

When the water is to be elevated from any considerable depth, there should be a common check-valve, placed in the induction pipe M, to prevent any reaction of the water, while the ring D, is passing from *g'* to g^2. For a force-pump, to throw a continuous stream, and without an air-chamber, they should be made with a division in the shell, or cylinder A, and offset *m*, and a ring or piston D, with its vibrating link J, in each apartment, the arm F, of one being up when that of the other is down therefore when one piston is producing suction, the other will be forcing, and vice versa.

I do not claim the annular piston, of itself, neither do I claim a radial arm, (which I do not use in any form,) but

I do claim, as my invention, and desire to secure by Letters Patent,—

The vibrating link, (or arm,) J, in combination with the annular piston D, as, described and for the purpose specified.

RICHARD GILBERT.

Witnesses:

CHARLES GILBERT,

DANIEL F. DEMING.