J. Bean,

Oscillating Pump,

No. 52,660. Patented Feb. 20, 1866.

Fig: 1.

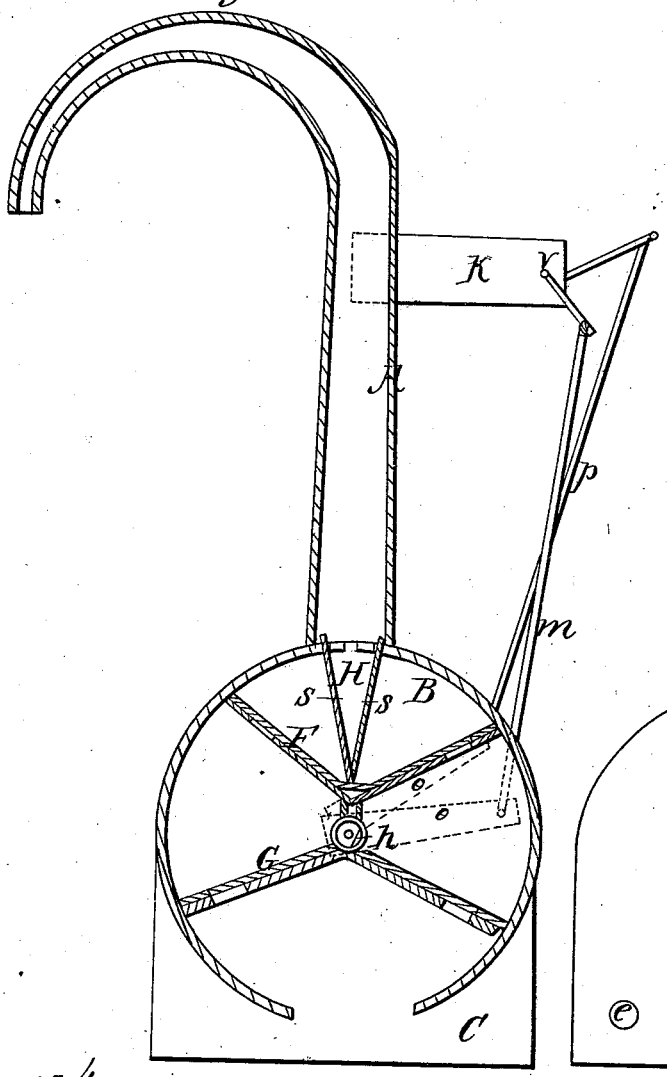


Fig: 2.

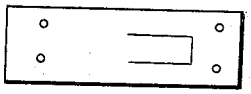


Fig: 3.

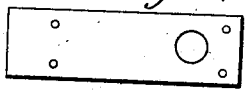
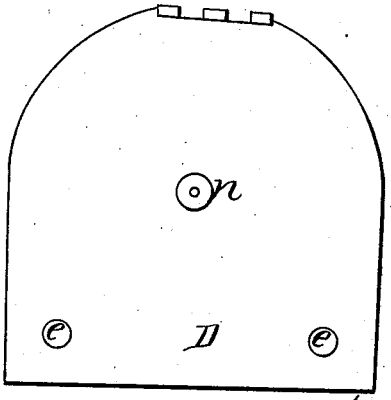


Fig: 5.

Fig: 4.



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UNITED STATES PATENT OFFICE.

JOHN BEAN, OF HUDSON, MICHIGAN.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **52,660**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, JOHN BEAN, of Hudson, in the State of Michigan, have invented certain new and useful Improvements in Pumps; and I hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists of certain mechanical devices in the construction of a pump, by which it is made to throw out a continuous stream of water.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being made to the accompanying drawings.

Figure 1 is a vertical section of my pump. Figs. 2 and 3 exhibit plan views of two sections of the valve-plates. Fig. 4 is a plan view of the chamber in which the valve-plates operate. Fig. 5 is a plan view of the shaft to which the upper valve-plate is soldered.

The letter A, Fig. 1, represents the pump-stock, the bore of which is quadrangular and gradually diminishing in size from its point of junction with the valve-chamber B until it reaches its curved end, from which the water is discharged.

The chamber B describes a circle, and is formed of metal or other suitable material, and rests at one edge on the plate G, and confined in position by the plate D, the two plates being held together near their lower end by screws *e e*.

The plate D is hinged to the base of the pump-stock, so that by removing the screws that confine it to C it can be raised up and the valves repaired.

F represents the upper and G the lower valve-plate, said plates consisting of two wings each, united at an angle of about thirty degrees, and having the valves near the ends of the wings. The two plates are covered with leather on their upper side, which, being cut through on three sides, forms a flap-valve, I, which rises or falls according as the pressure of the water may be either upward or downward. The inner ends of the leather covering on plate G are hinged to the axle *h*, thus enabling the plate G to play freely.

The upper plate, F, is soldered to the shaft *n*, Fig. 5, the shaft *n* having a socket in the end, which receives a pivot, *t*, on the upper end of *h*.

It will be observed that when the two plates F and G are in position the wings of F will be at an ascending and the wings of G at a descending angle.

H represents a wedge-shaped block, the thick end of which penetrates a short distance into the pump-stock, while the lower end descends near to plate F. H is cased on two opposite sides with sheet-irons S, the lower ends of the sheets being at their center long enough to penetrate the leather covering of plate F and there riveted.

It will be seen that the leather coverings on block H extend farther into the bore of the pump than the block H does, so that as H is moved to the right or left, in consequence of the motion imparted to it by plate F, the alternate ends of the projecting leather will press against the interior of the pump, leaving an open space on the opposite side for the water to ascend in the pump-bore when forced by the action of the plate F.

K represents an arm fastened to the pump and extending at right angles from it. There are two of these arms at opposite sides of the pump, which answer as bearings to the rod V, this rod being formed into a crank at each end, placed at right angles to each other. The two cranks give motion to the rods *m* and P, which hook into the bars *o*, respectively, (see dotted lines, Fig. 1,) the bars *o* being fitted one on the projecting end of axle *h* and the other on the end of shaft *n*.

In operating my machine it will be seen that the alternate wings of the plates F and G will, under the action of the rods P and *m*, approach each other and then recede. As they approach each other the compression of the water between the wings will close the valve in G and open the valve in F. As the wing of F rises the water between it and the block H will again be compressed and force its way into the opening between the block H

and the pump. This operation is performed alternately by the wings on the opposite sides of plates F and G, thus producing a continuous stream of water from the spout of the pump.

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

The combination of the valve-plates F and G with the wedge-shaped block H, the rods *m* and *n*, the arms K, and the bars *o*, the whole constructed and arranged as and for the purpose herein set forth.

JOHN BEAN.

Witnesses:
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