J. W. RIDER.

PUMP.

No. 187,416. Patented Feb. 13, 1877.

Fig. 1.

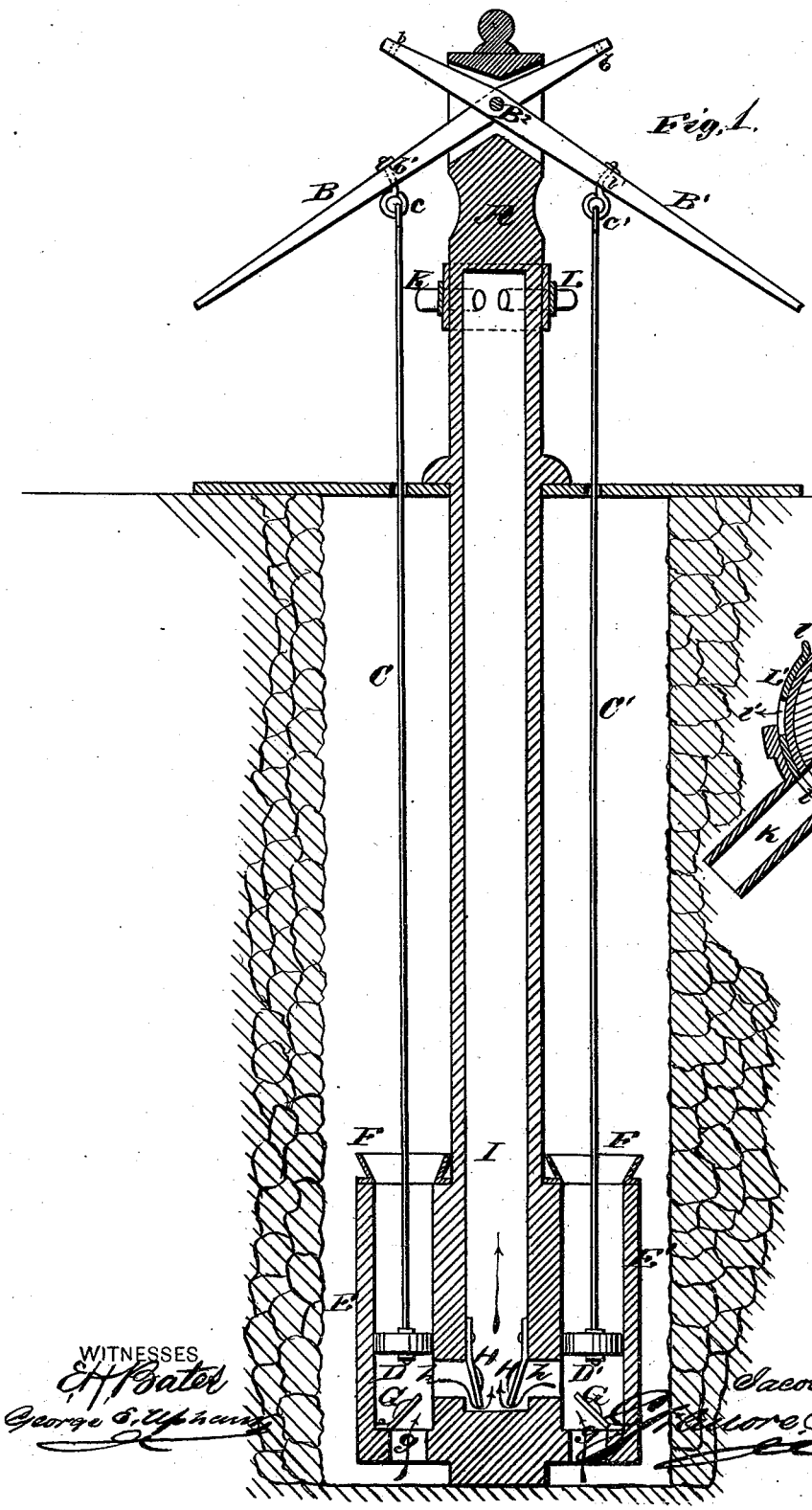
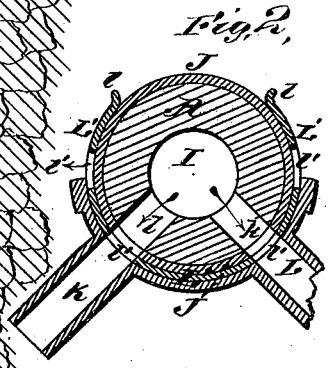


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JACOB W. RIDER, OF ALTOONA, PENNSYLVANIA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **187,416**, dated February 13, 1877; application filed January 27, 1877.

To all whom it may concern:

Be it known that I, JACOB W. RIDER, of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and valuable 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, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a central vertical section of my pump, and Fig. 2 is a transverse sectional view thereof.

This invention relates to force-pumps, and consists in the construction, combination, and arrangement of the devices hereinafter set forth.

In the accompanying drawings, A designates a pump-post, vertically slotted near its upper end, to allow the vibration of pump-handles or operating-levers, B B^1, which are pivoted on a cross-rod, B^2, and the long arms of which extend in opposite directions. Each one of said handles or levers is provided with a vertical perforation, *b*, near the end of its short arm, and with a similar perforation, *b'*, in its long arm, about equally distant from its pivot. C C' designate two piston-rods, which are respectively attached to said pump-handles or operating-levers, B and B^1, by means of small eyebolts, *c c'*. To the lower ends of said piston-rods are attached pistons, D D', operating respectively in pump-cylinders or casings, E and E'. Said pistons are preferably made of thick leather or other soft material, and are detachably connected to said rods, so that new ones may be substituted for those which have become worn. The entrance of said pistons into said cylinders or casings is facilitated by flaring funnel-shaped guide-pieces, F, one of which is secured upon the rim of the open top of each pump-cylinder or casing. Each one of said cylinders is provided at its bottom with an induction-orifice, *g*, covered by an inwardly-opening valve, G, and also with a discharge-orifice, *h*, covered by an outwardly-opening valve, H. Through said discharge-orifices *h h* said pump-cylinders E E' communicate with pump-tube I, which extends downward from pump-post A, and which may be made in one piece therewith. Thus, whenever one of the pistons D or D' is made to descend, a current of water (previously admitted into the cylinder below said piston) is expelled through said tube I. The descent of said pistons depends upon their attachment to the pump-handles hereinbefore described. If such attachment is made by inserting the shanks of eyebolts *c c'* into perforations *b' b'* of the long arms of said levers or pump-handles, (as shown,) each descent of said handles will force down the said pistons. The two pistons and cylinders will then operate independently of each other, and two separate streams may be ejected from the same pump, as hereinafter more fully described. Both piston-rods C C' may, however, be attached to the same pump-handle, the one at *b*, the other at *b'*, when the elevation of the long arm of said handle will operate one piston, and the depression of said arm of said handle will operate the other. Again, said piston-rods may be attached to the short arms of the operating levers or pump-handles at *b b*, but, in that case, it is necessary, in order to work the pump advantageously, to adapt its pistons, cylinders, eduction-orifices, valves, &c., to lifting instead of forcing. J is a curved guide-casing or flanged plate, which is bent around pump-post A, and secured thereto. Said casing is provided with two diverging discharge-tubes, K L, which communicate through perforations or outlets, *k l*, (as shown in Fig. 2,) with the upper end of tube I. In said guide-casing J, or in the space between the same and said pump-post A, works a similarly-curved slide, L', which is provided with small handles or catch-pieces, *l*, at each end, and also with several perforations, *l'*. The arrangement of said perforations is such that the flow of water can be cut off from either discharge-tube, or both of said tubes, or neither, at the will of an operator, at either end of said slide. When both of said discharge-tubes are left open, two independent streams of water will be ejected in different directions. This will be found especially useful when the pump is located on the dividing line between two premises, so that two neighbors can draw water simultaneously from the same pump without interference. In case of

fire, or whenever for any other reason it is desirable to throw a stream far into the air, one of said discharge-tubes, K L, is closed, and the pistons D D′ are operated alternately, so as to force a continuous stream of water rapidly through the remaining outlet. This may be effected by using both pump-handles B B^1, or only one of them, both the piston-rods C C′ being attached thereto, as already described. This latter arrangement will be found useful in case only one person is on the ground.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the pump-handles B B^1, both pivoted to the same cross-rod, B^2, and each perforated at *b* and *b′*, on opposite sides of said cross-rod, the piston-rods C C′, pistons D D′, pump-cylinders E E′, and tube I, substantially as described and for the purpose set forth.

2. The combination of two pump-handles, two piston-rods and pistons, two pump-cylinders, a vertical tube I, and two discharge-tubes connected therewith, whereby two persons can operate the same pump simultaneously, and draw water therefrom separately, substantially as set forth.

3. The combination of guide-plate or casing J, discharge-tubes K L, and a perforated slide L′, adapted to be operated from either end and to close either, both, or neither of the said discharge-tubes, substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JACOB W. RIDER.

Witnesses:

J. FRED. ACKER, JR.,

C. H. MCEWEN.