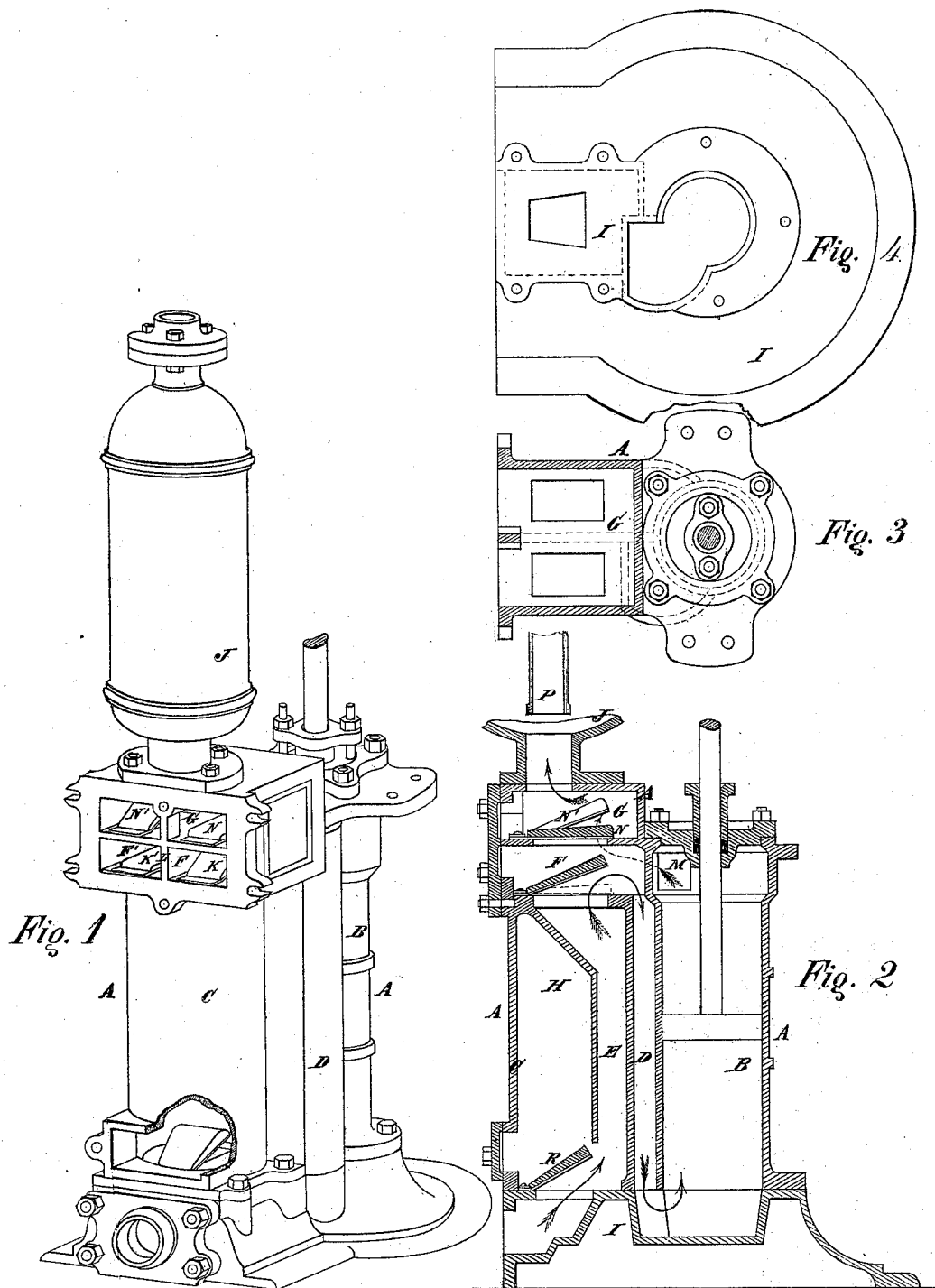


J. H. McGowan,

*Pump.*

No. 111,227.

*Patented Jan. 24. 1871*



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# United States Patent Office.

JOHN H. MCGOWAN, OF CINCINNATI, OHIO.

Letters Patent No. 111,227, dated January 24, 1871.

## IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that I, JOHN H. MCGOWAN, of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Improvement in Double-acting Force-Pumps; and I hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable one skilled in the art to which my invention appertains to make and use it, reference being had to the accompanying drawing making part of this specification.

### *Nature and Objects of Invention.*

My invention consists in the provision of a valve at the base or entrance of the suction-air vessel, independent of the necessary receiving or suction-valves for the pump, the object of this supplemental valve and particular location of the same being for the purpose of retaining all the water passed into this air-vessel, and thus avoiding the necessity of the customary check-valve at the lower end of the suction-pipe, and relieving the suction-pipes of the intermittent ramming action incident to the sudden return of the suction-water, by the reaction of the air in the suction-air vessel, between the strokes of the pump.

### *Description of the Accompanying Drawing.*

Figure 1 is a perspective view of my improved pump, with the valve-chamber caps removed.

Figure 2 is a vertical section.

Figure 3 is a cross or horizontal section through the discharge-valve chamber.

Figure 4 is a plan of the base-plate of the pump.

### *General Description.*

A is the principal casting of the pump, and it embodies in one piece the cylinders B C, the side pipe D, the ascending water-passage E, the valve-chambers F F' G, (for the suction-valves and discharge-valves,) and the suction-air vessel H.

This casting is united to the base-plate I by a single joint, and connects with the discharge air-vessel J at the top, in the manner shown.

All the water received by the pump is carried up the passage E, and this passage communicates with

the chambers F F' of the "suction-valves" K K' separately, the partition L separating the chambers, as shown.

Chamber F connects with the lower end of the pump-barrel B by means of the side-passage D, and chamber F' with the upper end of the pump-barrel by means of passage M.

The chamber G is fitted with the two discharge-valves N N', and the air-vessel J, with which this chamber communicates, contains the discharge-pipe P, which hangs from the top of the air-vessel and reaches to a point near the bottom or neck.

The side pipe D and passage M necessarily serve the double purpose of receiving the water for the pump-barrel and discharging the same.

Upon the base-plate I of the pump, and immediately below the suction-air vessel H, a valve, R, is fitted, which serves the purpose indicated in the preamble of this specification, viz., to retain all the water delivered to the pump, prevent the air in vessel H from driving the water back at the termination of each stroke of the pump under slow motion, and also relieve the joints of the suction-pipes from the sudden ramming of the water by the suction-air vessel between the strokes of the pump.

It will be observed that this valve is not an essential one for governing the supply of water to each end of the pump, and preventing the piston from forcing it back, as the valves K K perform these functions completely.

The valve R performs its part independent of the necessary pump-valves.

### *Claim.*

I claim—

In combination with a pump, the supplemental valve R and suction-air vessel H, arranged and operating substantially as set forth.

In testimony of which invention I hereunto set my hand.

JOHN H. MCGOWAN.

Witnesses:

J. L. WARTMANN,

E. F. LAYMAN.