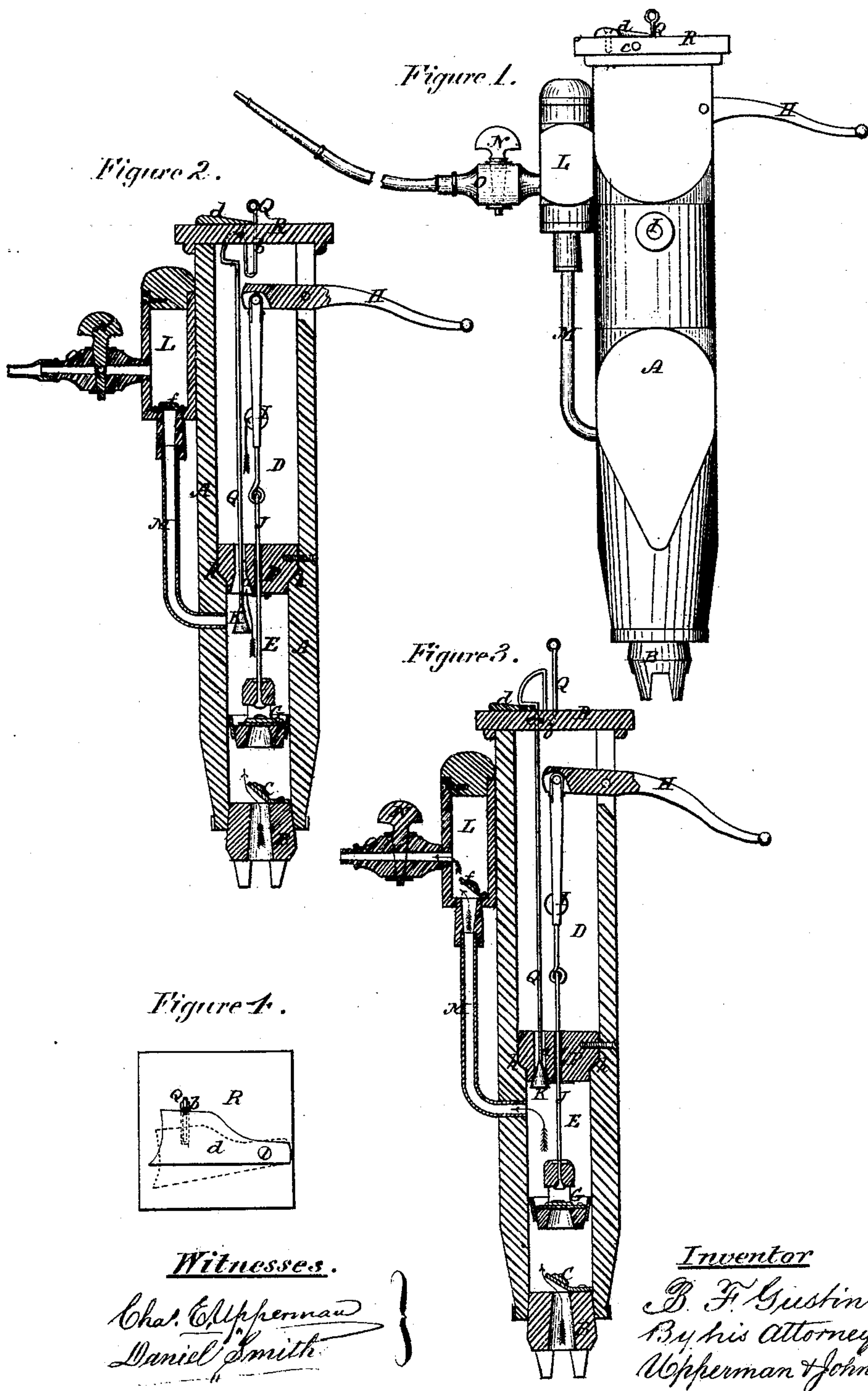


*B. F. Gustin,*

*Force Pump.*

*No. 102,199.*

*Patented Apr. 19. 1870.*





# United States Patent Office.

BENJAMIN F. GUSTIN, OF MIDDLETOWN, INDIANA.

Letters Patent No. 102,199, dated April 19, 1870.

## 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, BENJAMIN F. GUSTIN, of Middletown, in the county of Henry and State of Indiana, have invented a new and useful Improvement in Combined Lifting and Force-Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings of the same which make part of this specification, and in which—

Figure 1 represents an elevation of a pump, embracing my improvements.

Figure 2 represents a vertical section, showing the parts arranged as an ordinary lifting-pump.

Figure 3 represents a similar section, showing the several parts arranged for a force-pump.

Figure 4 represents a top view of the pump.

My invention relates to the construction of an ordinary lifting-pump in such manner that it may be converted into a force-pump at will, and consists in dividing the stock of the pump into an upper and lower chamber by means of a water-tight core, and providing said core with an opening, which unites the two chambers and a suspended valve, which, when closed with the core, separates the two chambers so as to cut off communication with the upper chamber and put the lower one in communication with an auxiliary air-chamber, from which the water is expelled by the force of the air therein against the constant supply of the water from the lifting-pump, so that the latter may be converted a forcing hydrant, and used with a hose in case of a fire, or for other purposes.

In the accompanying drawings—

A represents the pump-stock fitted with a supporting-plug, B, at its lower end, through openings in which the water enters, and is held therein by a valve, C, at its top. It is divided near the middle of its length into an upper and a lower chamber, D and E, and is provided with the usual valved sucker G, handle H, and egress-spout I.

The connecting-rod J, of the valved sucker, passes through a central opening in the division plug P, and is packed in any suitable manner.

The two chambers of the pump thus formed communicate with each other through an opening, *a*, in the division plug P, but may be separated so as to cut off this communication by means of a suspended valve, K, the connecting-rod Q of which passes through the opening *a* in the plug P, and up through an opening, *b* in the cap R, to which it is held from falling too far by a pin, *c*, and locked when raised up to close the opening in the division plug P by a latch, *d*, pivoted to the cap R, as shown in fig. 4.

The suspended valve K is made conical, and its position is sufficiently far below the division plug P to clear the opening, but when drawn up by its rod Q it

is made to fit a correspondingly-shaped mouth of the communicating opening *a*, so as to seal it.

When this valve is open the sucker lifts the water and discharges it through the spout I, but, when closed, the chamber E is put in communication with an auxiliary air-chamber, L, arranged on the outside of the pump-stock A by means of a pipe, M, communicating with the lower end of said air-chamber, and the upper end of the lower pump-chamber E.

This air-chamber is located near the top of the pump-stock, and secured thereto by any suitable means. It is provided with an ingress-valve, *f*, at its lower end, a stop-cock, N, and an egress-nozzle, O, to which a hose may be attached whenever desired.

The water is pumped into this chamber through the connecting-pipe M and valve *f*, so as to compress the air therein, and, when then faucet N is open, the water is forced out through the hose, and will be thrown a distance equal to the pressure of the air in the chamber L, aided by the constantly supplying-stream from the lower chamber E.

The division plug P is fitted tightly upon a seat, *h*, within the chamber of the pump, and secured by a screw, so that it may be removed if desirable.

Having described my invention,

I claim—

1. The division plug P, in combination with the upper and lower chambers D E of the pump, and the suspended valve K, constructed and operating substantially as herein described and shown.

2. The auxiliary air-chamber L, arranged on the outside of the pump, and communicating with the lower water-chamber E thereof, in the manner and for the purpose herein shown and described.

3. The sealing-valve K of the lower water-chamber E, united to and operated by means of a connecting-rod, Q, held up when closed by the latch *d*, and supported when open in the manner and for the purpose herein shown and described.

4. An ordinary lifting-pump which may be converted into a forcing-pump or hydrant by means of the division P and valve K, operated as described.

5. The combination in a lifting-pump of the division plug P, the upper and lower water-chambers D E, the communicating opening *a*, the suspended valve K with its opening and closing connecting-rod Q, the auxiliary air and water-chamber L with its connecting-pipe M, nozzle O, and stop-cock N, the whole arranged, constructed, and operating as herein shown and described.

B. F. GUSTIN.

Witnesses:

HARRISON JACKSON,  
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