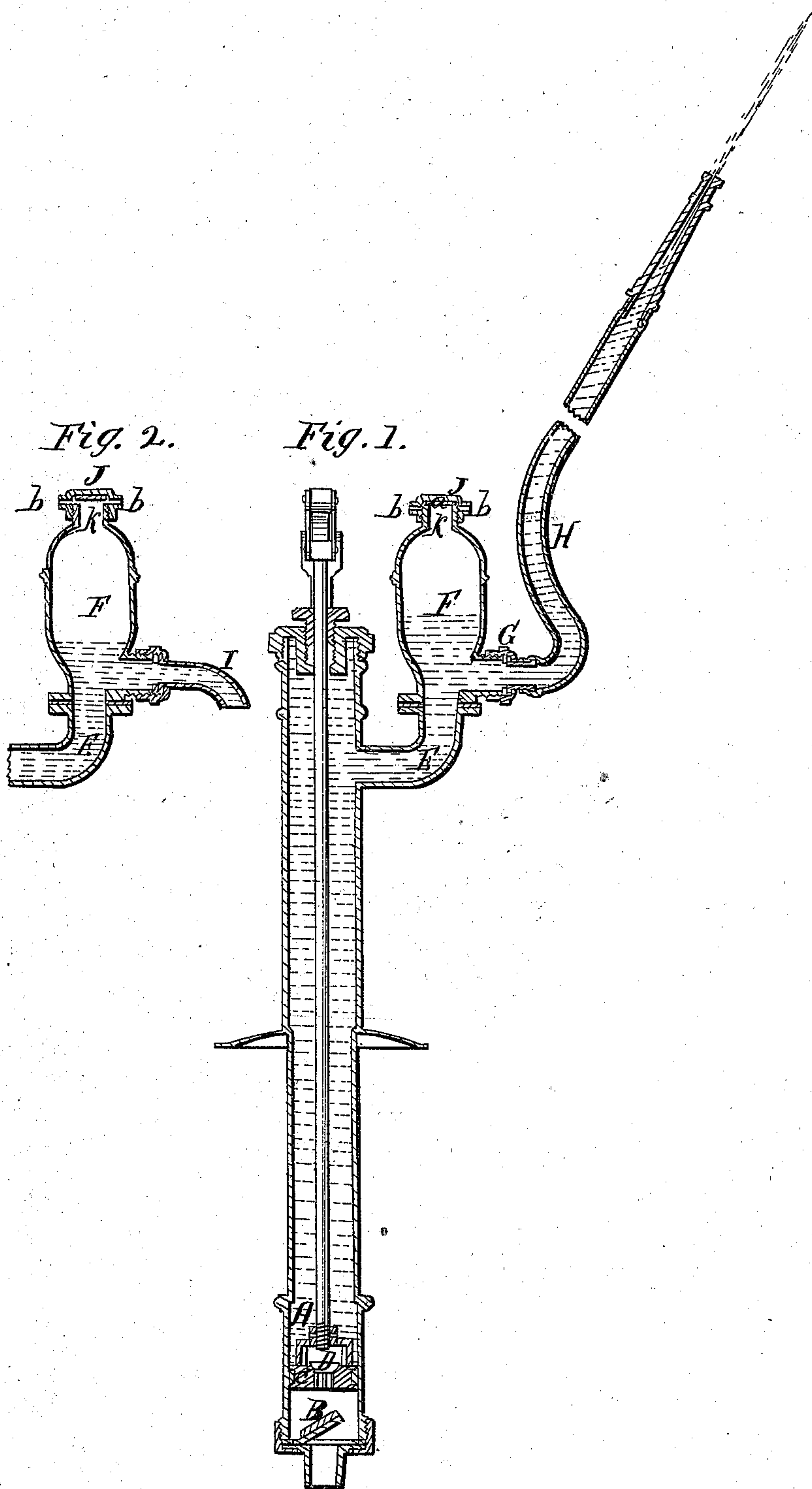


J. F. Cowing,
Pump,
No. 12,542, Patented Mar. 20, 1855.



UNITED STATES PATENT OFFICE.

JOHN P. COWING, OF SENECA FALLS, NEW YORK.

DEVICE FOR AIR-CHAMBERS OF PUMPS.

Specification of Letters Patent No. 12,542, dated March 20, 1855.

To all whom it may concern:

Be it known that I, JOHN P. COWING, of Seneca Falls, in the county of Seneca and State of New York, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1, is a vertical central section of a pump having my improvement, and Fig. 2, is a central section of the air vessel.

Similar letters of reference indicate corresponding parts in both figures.

The principal object of this invention is to make a common single acting lift pump serve not only the ordinary uses of a well pump, but also as a force pump for throwing a constant stream of water to a great height or distance for the purposes of extinguishing fire, or of washing windows or vehicles.

My invention consists in providing the pump with what I term a ventilating air vessel, which is an air vessel applied in the usual way but furnished as hereinafter described with a screwed cap or some equivalent device by which it may be readily ventilated to prevent the air being confined therein, when the pump is merely used for drawing water, or may be closed to confine the air when it is desired to discharge the water with great force, or force it to a great height or distance in a continuous jet or stream.

To enable those skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, is the pump cylinder; B, the inlet valve; C, the piston containing the valve D; and E, the discharge passage, all constructed arranged and operating in the same manner as those of a common lift pump. F, is the air vessel, to the lower part of which may be secured, by a nut G, either the hose H, shown in Fig. 1, or the common spout I, shown in Fig. 2, the latter to be used when the pump is merely used for drawing water, and the former when used for forcing water to a height or distance. No check valve is used at the entrance to the air vessel, and therefore when the pump is in an exposed position in cold weather the drain or let off hole usually provided will draw off the water not only from the pump but from

the air vessel. On the top of the air vessel there is a screwed nozzle K, to which is fitted a nut or female screwed cap J, which contains a piece *a*, of india rubber or other packing at the top for closing the top of the nozzle when the nut or cap J, is screwed down as shown in Fig. 1, and making the air vessel perfectly air tight. Below the packing *a*, the nut or cap J, has a number of small perforations or holes *b, b*, in its sides, which, when it is unscrewed or raised far enough to raise the packing *a*, from the top of the nozzle K, serve to form a free communication between the air vessel and surrounding atmosphere. This last described condition of the air vessel is shown in Fig. 2.

To make the pump a common lifting pump, the spout I, has to be attached and the nut or cap J, unscrewed as shown in Fig. 2 to ventilate the air vessel; but to make it a force pump in case of fire, or to throw a constant stream or jet of water to a distance or with force, the spout is taken off and the hose substituted, and the nut or cap J, screwed down. Thus it will be seen that the air vessel F, having its discharge at or near the bottom, is convertible with facility and despatch into a simple open water reservoir by slightly turning only the perforated nut or valve arrangement J at the top as represented in Fig. 2 of the drawing, when the valve J being open, the air in the space above the water in the vessel F, having free egress through the perforations *b b*, is restrained from compression during the lift in working the pump which, under this open condition of the air vessel F, acts as the ordinary well or lift pump in giving an easy falling discharge of the water, which for domestic uses and so forth is generally much more suitable or desirable than a forcible or strong fitful or jerking discharge would be as would take place were the air vessel F kept closed and the air above the water therein exposed to compression; though should such a forcible discharge for any peculiar or particular domestic use be required, this is quickly and easily obtained by simply closing the valve J at the top of the air vessel; or another convenient (for some purposes) mode of working may be adopted with equal facility, by closing up with the hand the mouth of the spout I and continuing to pump till the air vessel F be filled with water, when a prolonged discharge may be

obtained without further pumping by removing the hand from the mouth of the spout I, and this discharge made slow or quick by opening or closing the valve J at top, at pleasure. Thus many conveniences are effected by this arrangement, and the facility and rapidity with which the common house or well pump may be converted into a force pump for extinguishing fires and so forth, by screwing down or closing the valve J and screwing or fitting the hose H on to the discharge as specified and represented in Fig. 1, makes the arrangement yet more serviceable.

In no case, it should be observed, is the neck or nozzle K, at the top of the air vessel, meant as a discharge opening for the water; and the valve or perforated nut J fitted thereon is purely an air valve, designed to be opened or closed at pleasure by the hand, to make the air vessel F a close one, or to convert it into a mere open water reservoir, accordingly as the pump is required to work as a common lift one, to produce a free and easy discharge, or as an ordinary force pump, to produce a violent discharge, as specified; and herein exists the difference

between this arrangement and the many other well known forms of pump using a close air vessel sometimes with the discharge pipe penetrating the top and descending into the interior of the air vessel and sometimes with the discharge outlet or spout situated below as specified.

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

The combination and arrangement with the air chamber or vessel F of the pump having its delivery spout or outlet below or at or near the bottom of said chamber substantially as shown and described, of a hand air valve, or perforated nut J, at or near the top of the air vessel, for the conversion by hand with facility and despatch of the close air vessel into an open water reservoir, or vice versa, above the discharge outlet or spout of the pump; and whereby the uses of the common well or lift pump may be varied with despatch and its conveniences augmented as herein set forth.

JOHN P. COWING.

Witnesses:

M. L. BELLOWS,
PHILO COWING.