An Improved Pump.

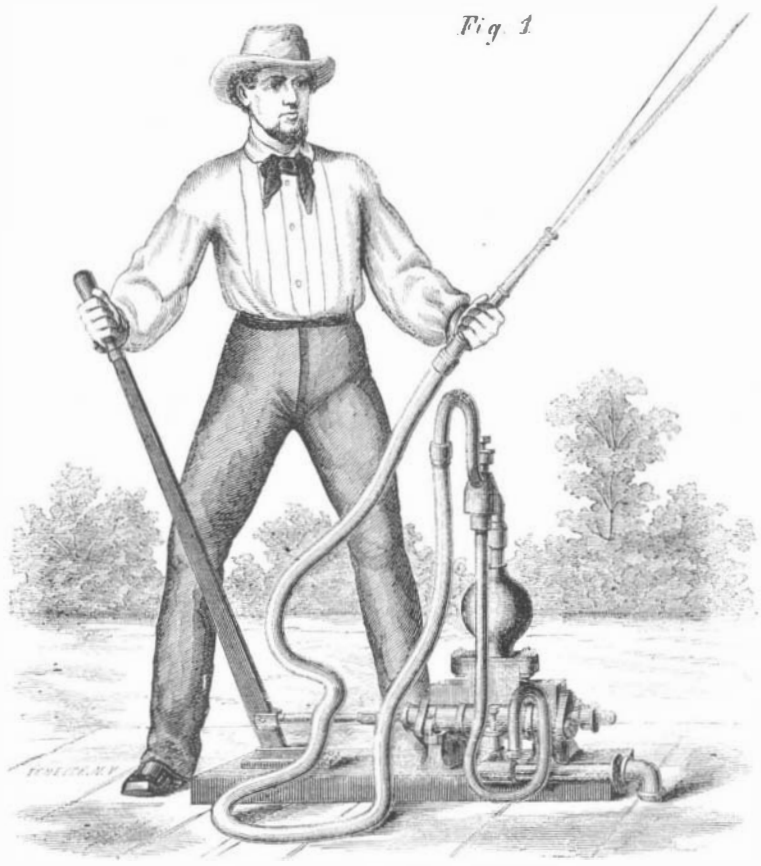
The accompanying engravings illustrate the construction of a new pump, the invention of James Budd, of Sandy Hill, N. Y., which will draw water from either of two fountains or wells, or from both, and will discharge from either of two nozzles or from both, at the will of the operater; the adjustments to determine its action in any of these repects being very quickly and easily made.

Fig. 1 is a perspective view, and Figs. 2 and 3 are vertical sections at right angles with each other. In Fig. 2, only one induction pipe, F, is shown, and we will first describe the operation when drawing water through this pipe. A is the cylinder, and B the piston. The piston is of peculiar construction, being formed of two cup-shaped ends, *a a'*, connected by curved arms, *c c*, to a hollow cylinder, *d*, and each containing a ball-valve, E, fitted to close an opening, *b*.

It will be seen that as the piston rod is drawn outward from the cylinder in the direction indicated by arrow 1, the valve in the cup, *a*, is closed, while that in valve, a', is opened, forcing the water upward through the chambers, *h* and *e*, into the air chamber, I, while the return of the piston in the direction indicated by arrow 2 carries a current of water upward through chambers, *h'* and *e'*, also into the air chamber, I. Thus a constant flow of water into chamber I is maintained; the retaining valves, J and *g g*, preventing a reflux current downward.

From the chamber, I, the water passes by the pipe, K, into the chamber, L, whence it may flow through either or both of the vessels, M and M'; its course being determined by the position of the ball valve, N. This valve has two seats, *j* and *j'*, and when it is situated midway between them, as represented in the engraving, the passages to both nozzles are open, and the water is consequently discharged through them both; but if the valve is lowered upon the seat, *j'*, the passages to the nozzle, M, is closed, and the water can flow through the nozzle, M', only; while by raising the valve to the seat, *j'*, the passage to the nozzle, M', is closed, and the water is discharged through the nozzle, M, only. The stem, O, of the valve, N, passes through a stuffing box, P, and has a head upon its upper end by which the position of the valve may readily be changed at will. This is the explanation of the manner in which water may be drawn into the pump by one pipe, and discharged through either or both of two nozzles. The mode in which it may be drawn from one or both of two fountains, is shown in Fig. 3.

Fig. 1



BUDD'S TWO-STREAM PUMP.

The induction pipe, F, is curved forward and connected with a chamber, G, which has a retaining valve, G, fitted to close the passage to one of the two fountains. From the upper part of the chamber, G', is a passage leading to the pipe, Q, which enters the second of the two fountains. This passage has a valve seat, *k*, to which is fitted a valve, S, and it will be seen that when this valve is drawn upward to its seat, no water can pass into the pump through the pipe, Q, and it must consequently be drawn from that reservoir alone with which the lower pipe communicates. But if the valve, S, is carried downward till it rests upon the valve, G, so as to keep the latter valve closed, then must all of the water to supply the pump come through the pipe, Q.

The valve, S, has a stem, J, passing through a stuffing box, U, and provided with a nut, V, for raising and lowering the valve. The engraving represents pendant arms, *l*, working in a spiral groove, *m*, in the cup, W, for working the valve, but any other plan may be adopted if preferred.

This pump is designed especially for fire engines, but the inventor claims for it superiority as a farm pump or for manufactories.

The patent for this invention was granted through the Scientific American Patent Agency, April 29, 1862, and further information in relation to it may be obtained by addressing the inventor, at Sandy Hill, N. Y.

Fig. 2

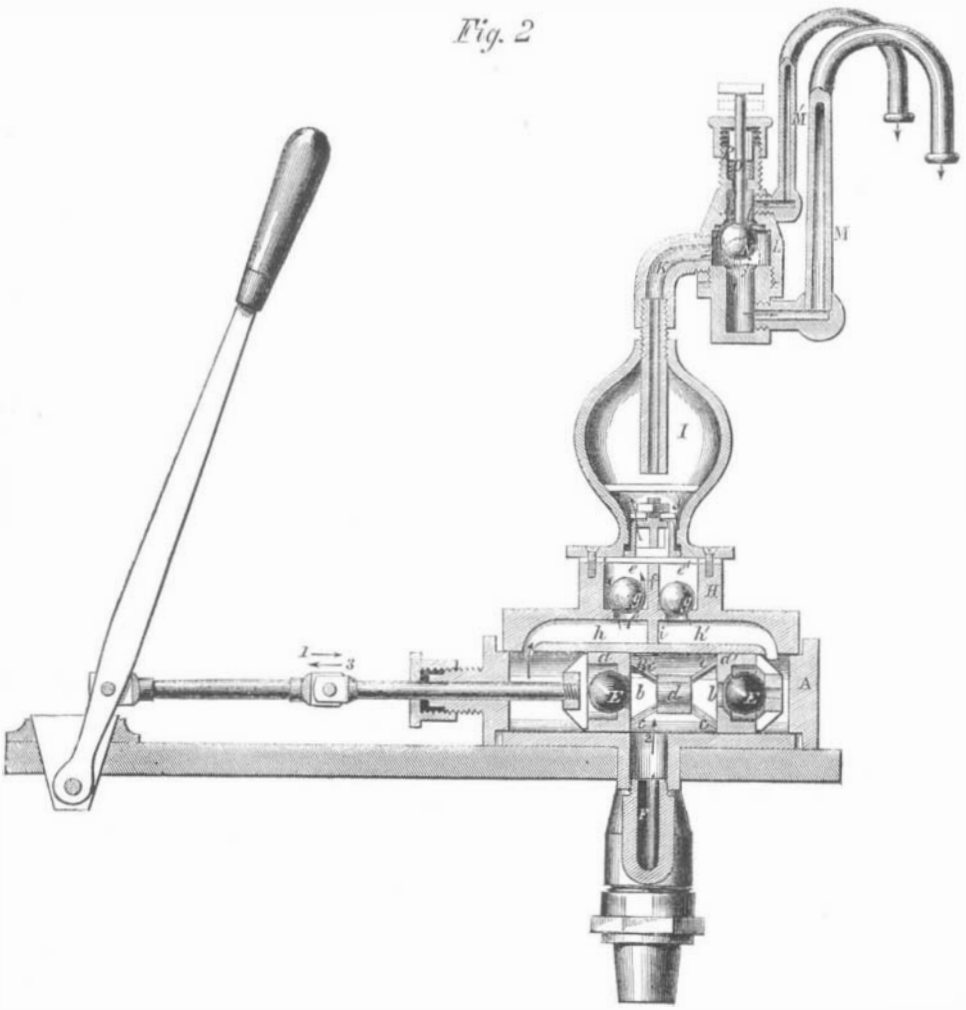
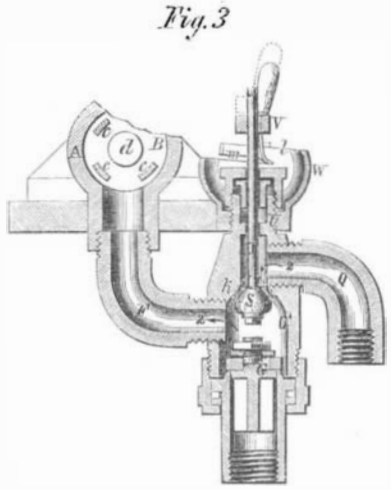


Fig. 3



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