

T. K. BALL.  
FORCE-PUMPS.

No. 195,076.

Patented Sept. 11, 1877.

Fig. 1.

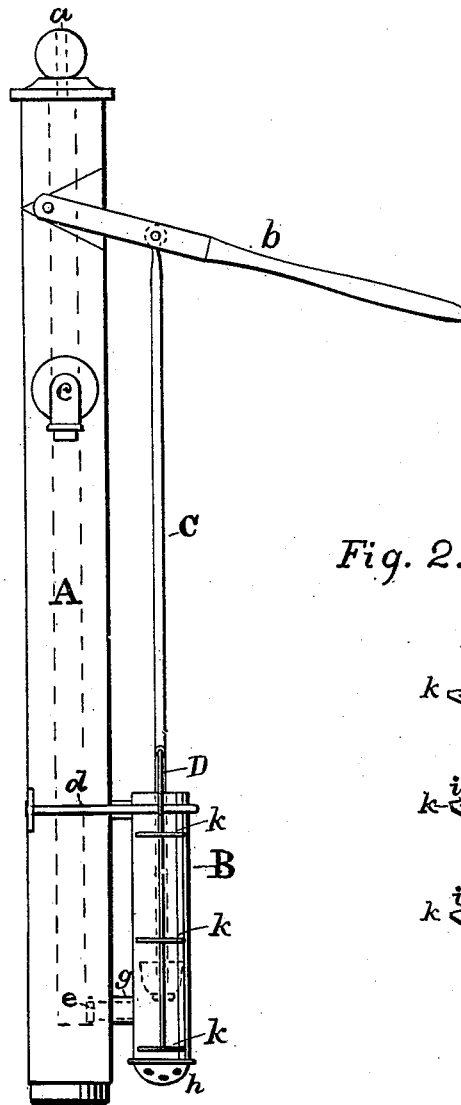
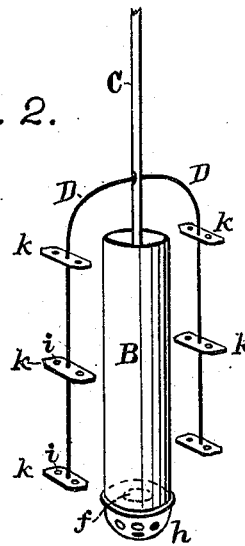


Fig. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN FORCE-PUMPS.

Specification forming part of Letters Patent No. **195,076**, dated September 11, 1877; application filed August 1, 1877.

*To all whom it may concern:*

Be it known that I, THOMAS K. BALL, of Maysville, in the county of Mason and State of Kentucky, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the class of pumps commonly used in connection with wells and cisterns; and consists in certain improvements in the construction of the same and a novel combination of parts, as hereinafter set forth and described.

In the accompanying drawing, which forms a part of the specification herein, Figure 1 is a front view of a pump having my invention applied thereto. Fig. 2 illustrates, in perspective, the pump-staff, having the water-agitator attached thereto.

In my construction a water-agitator is attached to the pump staff or rod holding the plunger, the agitator consisting of a number of arms provided with plates or dashers fixed thereto.

To secure the benefit of my invention in the most convenient way, the pump is preferably constructed, as shown in the drawing, with an additional tube or cylinder, in which the plunger is worked, the water passing from the cylinder into the main stock of the pump.

In the drawing referred to, the main stock A of the pump is closed at the lower extremity, and has a hole, *a*, at the top for the admission of air. The handle *b* and spout *c* are of ordinary construction. B is a tube or cylinder, secured to the main stock by a clamp, *d*, a passage for the water being formed, at *g*, from the cylinder to the stock A, and a valve, *e*, being placed at the opening into the main stock. This valve opens when the plunger and

the pump-staff C descend. Another valve, *f*, is placed within and at the lower end of cylinder B, which is provided with a basket or strainer, *h*. The valve *f* opens during the upward movement of the pump-staff. The pump-staff C connects with the handle *b*, as shown, and extends into and operates the plunger in the cylinder B in the ordinary way.

At a point above the cylinder B a suitable distance a number of arms or rods, D, provided with dasher-plates *k*, are fastened to the pump-staff C, and form the agitator. As shown in Fig. 2, the arms D extend from the pump-staff C and turn downward, the vertical parts having the plates *k* fixed thereto. These plates may be made with perforations *i*, after the manner of forming an ordinary churn-dasher.

The arms D, in operation, move up and down with the pump-staff, being fixed thereto, and the water in the cistern or other reservoir becomes thoroughly stirred, so that the whole contents may be withdrawn or changed within a short time, if desired—as, for instance, if the water in a cistern becomes foul, the use of the agitator, in connection with the pump, in a few days changes the contents, and the water becomes sweet and fit for use again.

The cylinder, as arranged in relation to the stock A, renders the location of the agitator wholly beneath the surface feasible; besides, the weight which has to be lifted in pumping is thereby lightened.

I claim as my invention—

The combination and arrangement of stock A, cylinder B, and staff C, provided with the agitator D and plates *k*, substantially as shown, and for the purposes described.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

THOMAS KEMP BALL.

Witnesses:

W. B. PHISTU,  
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