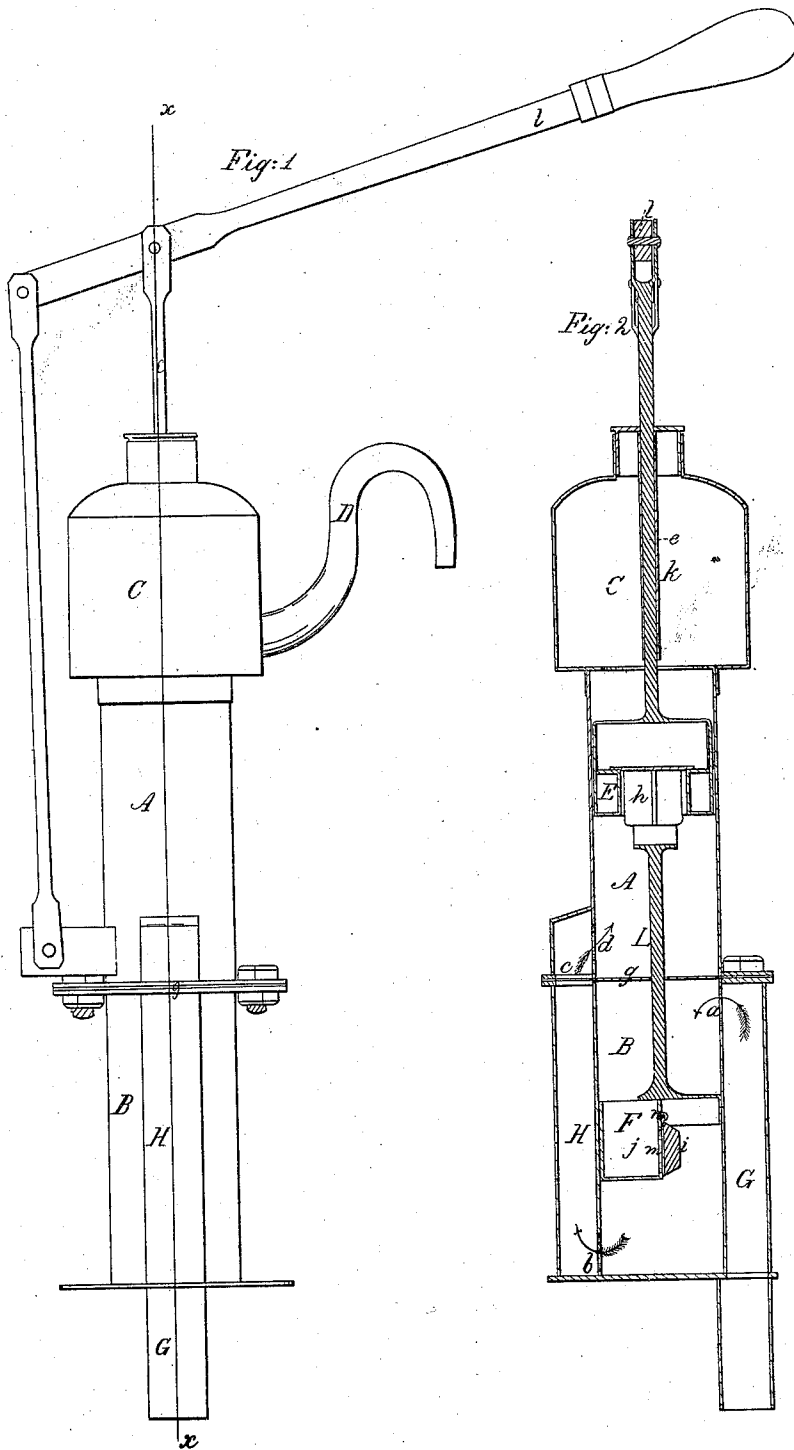


A. Barker.

Pump.

No 8733.

Patented Feb 17. 1852.



UNITED STATES PATENT OFFICE.

ABEL BARKER, OF HONESDALE, PENNSYLVANIA.

PUMP.

Specification of Letters Patent No. 8,733, dated February 17, 1852.

To all whom it may concern:

Be it known that I, ABEL BARKER, of Honesdale, in the county of Wayne and State of Pennsylvania, have invented a new and Improved Pump; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a side elevation of my improved pump, and Fig. 2, a vertical section of the same, in the line *x*, of Fig. 1.

Like letters refer to like parts in both figures.

I construct my said pump with two barrels A and B, which are separated by a partition or diaphragm *g*. In the upper barrel A, moves a piston E, worked by the lever *l*, and rod *e*. A piston F, moves in the lower barrel B, and is connected with the piston E, by the rod *f*, passing tightly through the diaphragm *g*, and is worked by the same power as the piston E.

G, is a pipe which conducts the water from the well into the upper part of the barrel B, through the aperture *a*.

A pipe H, conducts the water from the lower part of the barrel B, into the lower part of the barrel A, through the apertures *b*, *c*, *d*, as shown by the arrows. One half of the piston F, descends lower than the other, so as to include a space *j*, which may allow an aperture *m*, to open horizontally or upward through the partition *n*, separating the said space *j*, from the part of the barrel B, below the other half of the piston. A valve *i*, shuts the aperture *m*, and opens so as to allow the water to pass downward through the piston, while it will close by its own weight. The object of this arrangement is to render the action of the valve prompt and sure by causing its own weight to assist in, rather than act against, its closing. To render its action still more effectual, when the partition *n*, is perpendicular I sometimes slightly magnetize the valve *i*, or the partition, on which it shuts, both of which in this case should be made partially or entirely of iron.

When the partition *n*, is horizontal or oblique magnetizing is unnecessary. A valve *h*, opening upward, is placed in the piston E.

C, is an air chamber. A tube *k*, surrounds the piston rod *e*, and reaches from the top to near the bottom of the said air chamber C,

in order that no air may escape by the packing around the piston rod.

My improved pump above described works in the following manner: The pistons E and F, being in the upper part of their respective barrels, are forced down, which causes the water to flow up from the well into the upper part of the barrel B, as the piston F, in descending, displaces the fluid contained therein. The water which was below the piston F, is forced up through the pipe H, into the upper barrel A, opens the valve *h*, in the descending upper piston E, and passes into the air-chamber C, to be forced out through the spout D. On raising the pistons, the upper piston E, having its valve *h*, closed, lifts the water contained in the upper barrel A, into the air chamber C, thereby causing water to flow up from the barrel B, to fill the vacuum produced in the barrel A; at the same time the water pressing into the space *j*, of the lower piston F, opens the valve *i*, which allows the water to flow through the piston to fill the lower part of the barrel B. Thus a continual flow of water is produced, whether the pistons move up or down, without the assistance of any other valves or contrivance. Hence no time or power is lost by an intermittent flow of water or exerting power without raising water, results usually obtained by devices much less cheap and simple.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The combination and arrangement of the two barrels A and B, and the pistons E and F, in such a manner that the water shall flow down through the lower barrel and up through the upper barrel, thereby enabling one piston to act in descending, and the other in ascending; for the purpose of producing a constant flow of water, substantially in the manner herein described.

2. I also claim the peculiar construction of the lower piston F, by which its valve allows the water to pass downward, and closes by its own weight, either with or without magnetizing, substantially in the manner and for the purpose herein described.

The above specification of my improved pump signed this thirteenth day of November 1851.

ABEL BARKER.

Witnesses:

M. A. BIDWELL,
CHAS. WHITE.