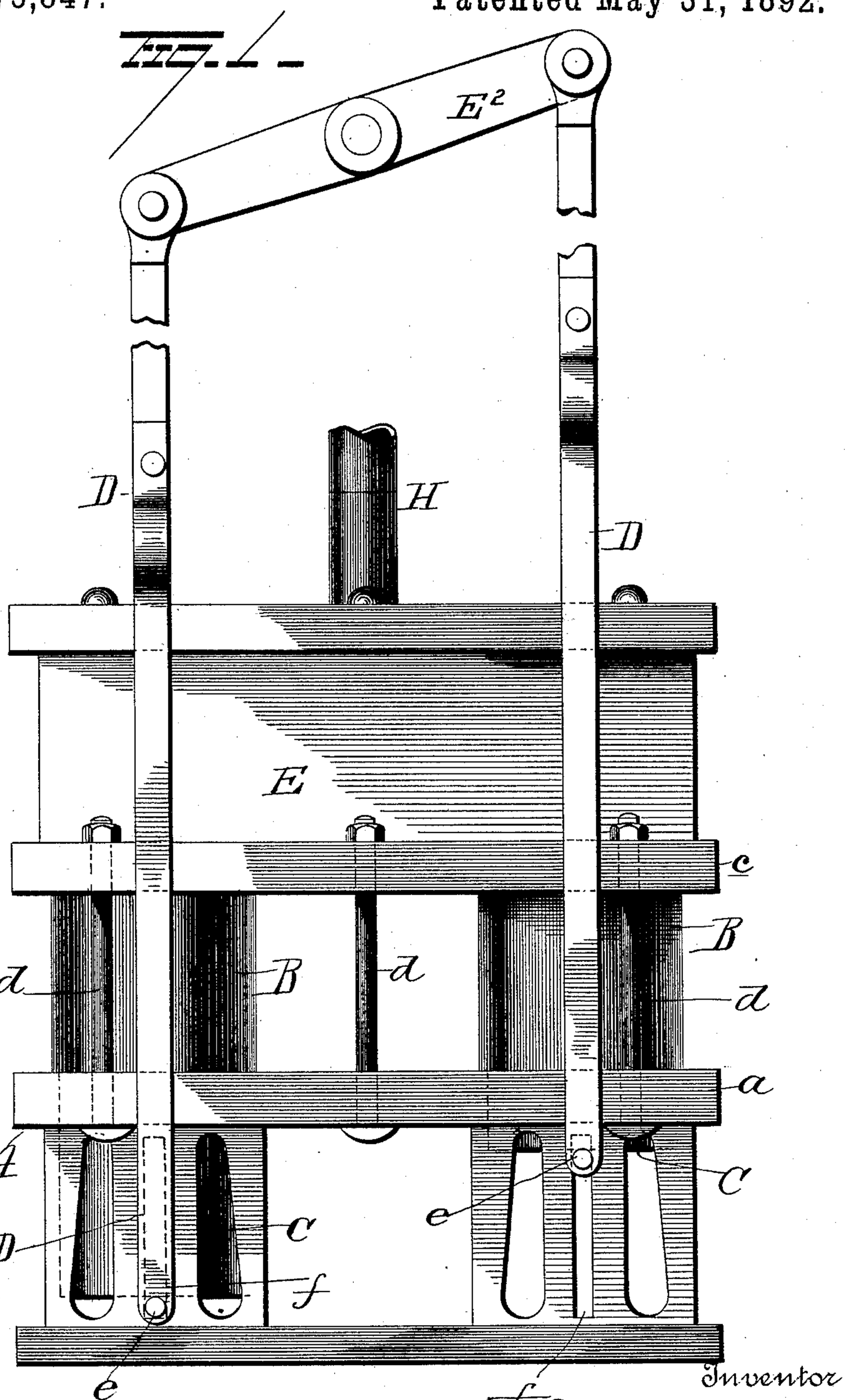
(No Model.) 2 Sheets—Sheet 1.

J. BURKHOLDER.

PUMP.

No. 475,847. Patented May 31, 1892.



Witnesses
G. Hollingshaw
G. F. Downing

Inventor
John Burkholder
By H. A. Seymour
Attorney

(No Model.) 2 Sheets—Sheet 2.

J. BURKHOLDER.

PUMP.

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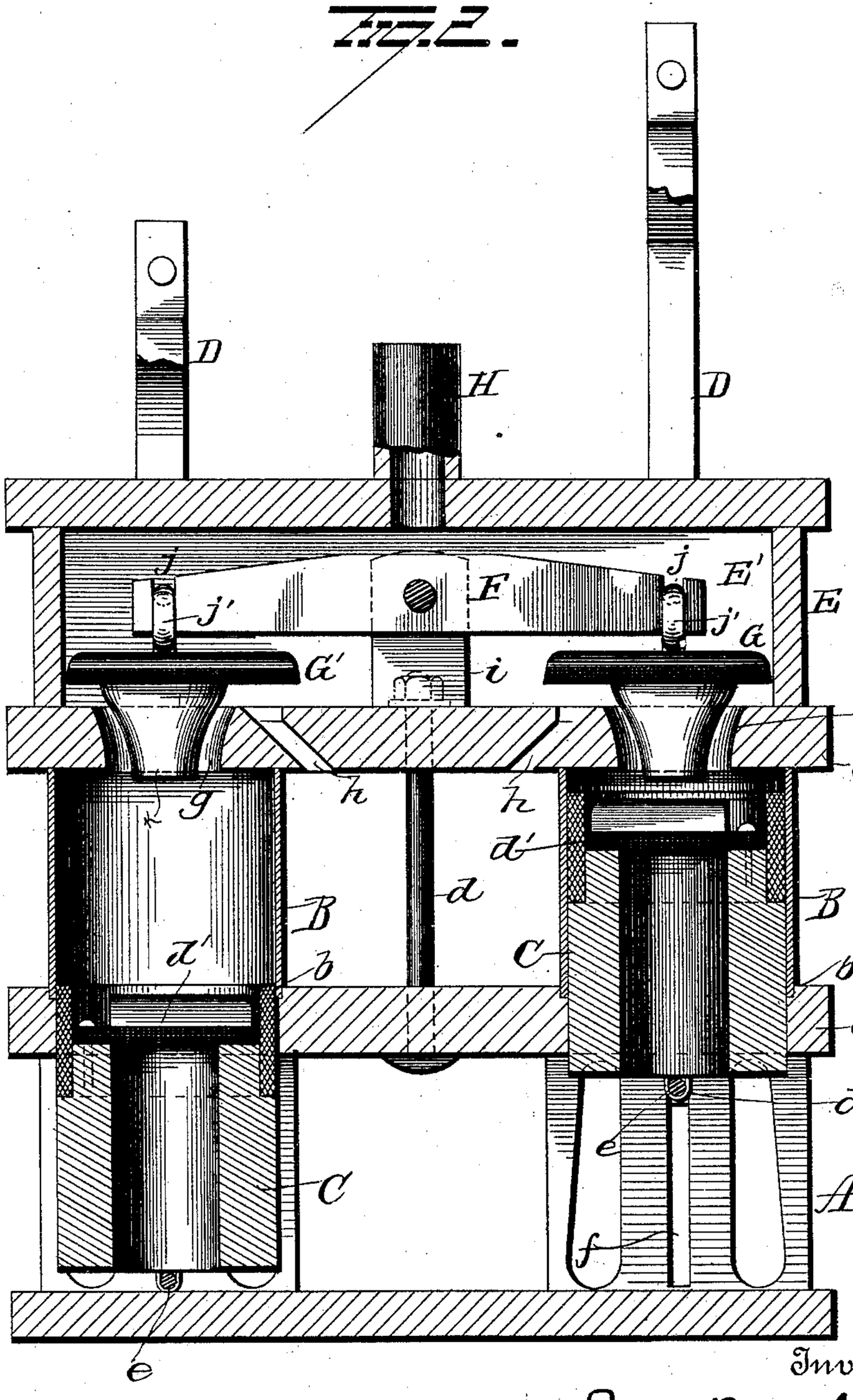
FIG. 2.



Witnesses
C. A. Hutchinson
G. F. Downing

Inventor
John Burkholder
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

JOHN BURKHOLDER, OF CENTREBURG, OHIO, ASSIGNOR OF ONE-HALF TO DANIEL JENNINGS, OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 475,847, dated May 31, 1892.

Application filed January 26, 1892. Serial No. 419,325. (No model.)

To all whom it may concern:

Be it known that I, JOHN BURKHOLDER, a resident of Centreburg, in the county of Knox and State of Ohio, have invented certain new and useful Improvements in Pumps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in pumps, and more particularly to double-acting lift and force pumps, the object of the invention being to produce a pump of the class specified which shall be simple in construction and effectual in the performance of its functions.

A further object is to construct and arrange the check-valves in such manner that they will completely open, and thus permit a free passage for the water through said valves.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating my improvements in side elevation. Fig. 2 is a sectional view of the same.

A represents an open frame-work adapted to be located in a well or other place from which water is to be drawn. The top *a* of the frame-work A is provided with openings *b* for the reception of the lower ends of two cylinders B of suitable length. Placed upon and extending over the tops of the cylinders B is a plate *c*, which is securely bolted to the top *a* of the frame A by means of suitable bolts *d*. Arranged within the cylinders B and adapted to reciprocate therein are hollow pistons C, provided on their tops with hinged valves *d'*. Rods *e* are secured to the lower ends of the pistons C and project at their ends beyond the pistons. The ends of the rods *e* are adapted to pass through and operate in guides *f* in the frame-work A. To the ends of each rod *e* a yoke or bail D is pivotally connected, the upper ends of said yokes or bails being pivotally connected to an operating-lever E^2 at opposite sides of the fulcrum thereof.

Located over the plate *c* is a boxing E, which produces a chamber E'.

The plate *c* is provided with openings *g*, through which water may pass from the cylinders B, and to one side of the openings *g* smaller openings *h* are made, through which water which may be in the chamber E' after the operation of the pump is stopped may escape, as hereinafter explained.

Located on the plate *c*, preferably in its center, is a bracket *i*, in which a lever or walking-beam F is pivoted. The ends of the walking-beam or lever F are provided with notches *j* for the reception of eyes *j'*, secured to check-valves G G', said check-valves being so constructed as to cover the openings *g* and also the openings *h*, the openings *g h* at opposite ends of the plate *c* being covered and uncovered alternately as the pump operates.

A pipe H passes through the wall of the boxing E and communicates with the chamber E', this pipe being intended to convey the pumped water to the outlet of the pump or to any other desired place.

When the operating-lever E^2 is manipulated, the pistons C will be reciprocated in reverse directions and water will be forced through one of the openings *g*, the check-valve G being forced up from its seat, so as to leave a free passage for the water into the chamber E'. During the passage of the water through the opening covered by the check-valve G the check-valve G' will be located firmly on its seat. Now when the operating-lever is vibrated in the reverse direction water will be forced through the other opening *g* in the plate *c* and the check-valve G' forced up to permit the water to enter the chamber E'. As the check-valve G' rises the walking-beam F will be vibrated and the check-valve G will be made to bear on its seat, and thus close the first opening *g*, the check-valve G being properly guided in its downward movement by a conical projection *k* on the bottom of the valve, and the check-valve G' is also provided with such conical projection *k*. As water accumulates in the chamber E' it will flow through the pipe H to the desired point where the water is to be used. When the operation of the pump is stopped, both check-valves

will be elevated from their seats and maintained so by the horizontal position of the walking-beam or lever F, and thus both openings *h* will be uncovered, as well as both openings *g*. As the escape of water in the chamber E′ through the cylinders B will be obstructed by the pistons C, the water remaining in the chamber E′ will escape through the smaller openings *h*, the flow continuing until the water in the pump is on a level with the water in the well, so that the water will remain cool and fresh.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pump, the combination, with two cylinders and pistons adapted to operate therein, of a chamber located over the outlet of said cylinders and provided with openings communicating with the cylinders and also having discharge-openings for draining the chamber, a pivoted lever or walking-beam supported by said plate, and check-valves connected to the ends of said pivoted lever or walking-beam, said check-valves being provided with conical projections adapted to enter said openings in the plate, substantially as set forth.

2. In a pump, the combination, with two cylinders and pistons adapted to operate therein, of a plate adapted to cover said cylinders, said plate having openings adapted to communicate with the cylinders, a chamber above said plate, a pivoted lever or walking-beam in said chamber, check-valves carried by the ends of said pivoted lever or walking-beam, and outlets in the said plate to permit the discharge of water from the chamber to the well after the operation of the pump stops, said valves being constructed and adapted to alternately cover said outlets when the pump is in operation, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN BURKHOLDER.

Witnesses:

G. E. McCONCHIE,

GEO. W. McCONCHIE.