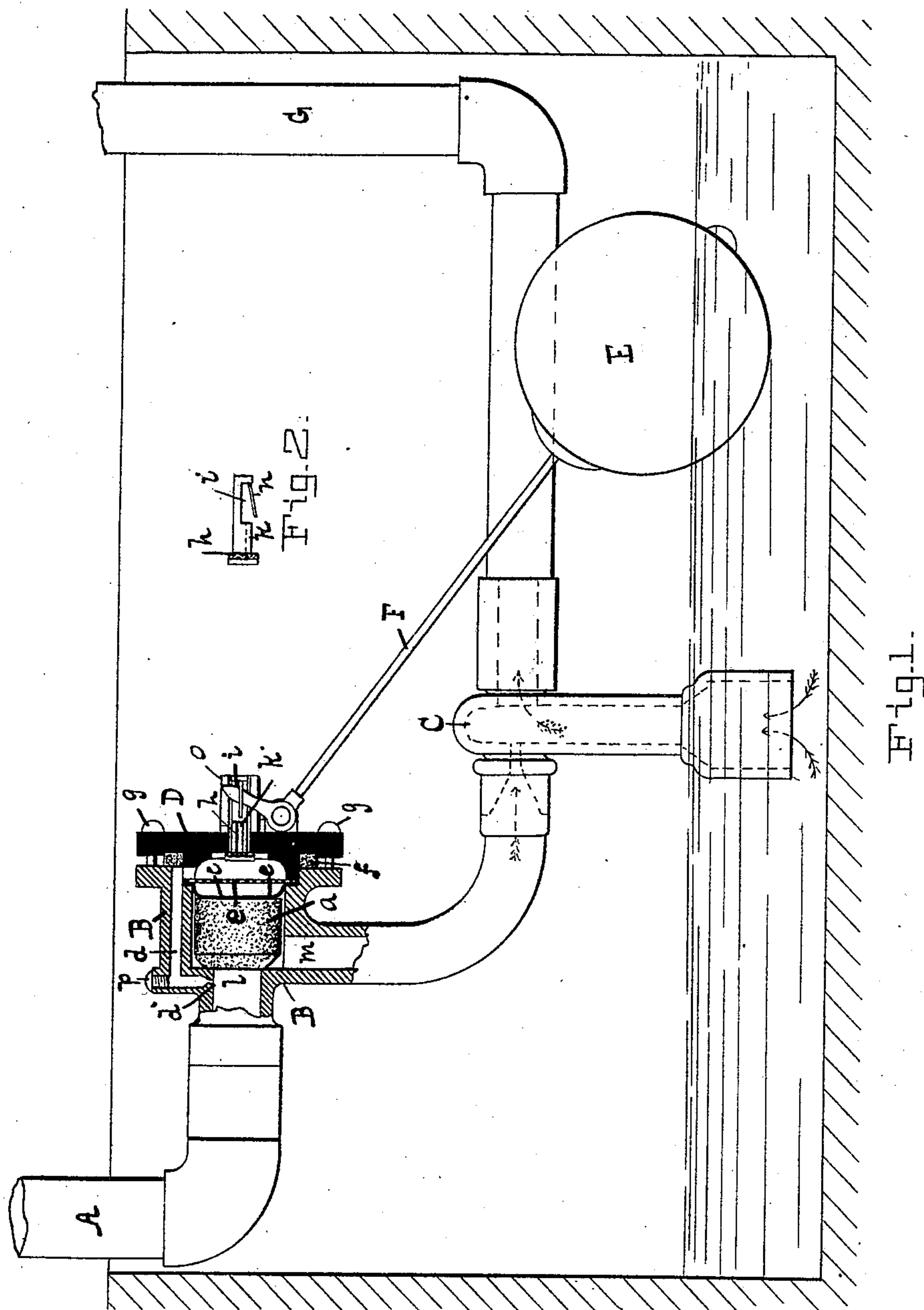


(No Model.)

C. WHITE.
FLUID EJECTOR.

No. 346,967.

Patented Aug. 10, 1886.



Witnesses:

Hilson Ring
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Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES WHITE, OF BALTIMORE, MARYLAND, ASSIGNOR TO BENJAMIN B.
AND HIRAM W. FRIEDENWALD, BOTH OF SAME PLACE.

FLUID-EJECTOR.

SPECIFICATION forming part of Letters Patent No. 346,967, dated August 10, 1886.

Application filed January 11, 1886. Serial No. 188,277. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WHITE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Fluid-Ejectors, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in static water-ejectors and valve mechanisms for the same, as illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a well in section, showing the ejector, pipes, and valve; Fig. 2, a view of the trip-valve.

Similar letters refer to similar parts throughout the several views.

The letter A designates the pressure-pipe attached to the valve, which consists of the casing B, provided with the flexible piston *a*, arranged to be seated over the part *l* by the action of the water on the flexible diaphragm *c*, which moves the piston to the left and seats it, thereby cutting off communication between the ejector C and the pressure-pipe A. The water is conveyed to the right-hand side of the diaphragm *c* through the passage *d*, formed in the casing B, with its inlet-port *d'* smaller than the passage, thereby preventing the said passage from becoming stopped up with sediment, as any particles that will pass through the port *d'* are too small to be retained in the passage.

Between the diaphragm *c* and the discharge-port of the passage *d* is arranged a screen, *e*, which retains the diaphragm in its place and prevents the piston *a* from moving too far to the right, the edge of the said screen and diaphragm being clamped between the casing B and the annular projections on the cap D, which securely holds them in their position.

The cap D is provided with a flexible washer, *f*, which is of a sufficient thickness to first form the joint between the casing B and the cap D, and permit the cap to be pressed inward and clamp the screen *e* and the diaphragm *c* by means of the screws *g*, thereby securely holding the two latter and making the said joint.

The cap D in its center is provided with a trip-valve, *h*, which releases the water from that side of the diaphragm by the action of the

float E, secured to the pivoted right-angled lever F, the short end of which enters the slot *i* and comes in contact with either end thereof, thereby unseating the valve *h* when the float is up, the slot *i* permitting the float to travel a given distance either way without operating the valve *h*, thereby permitting the well to fill with water before operating the ejector, and permitting nearly all the water to be ejected before the operation is stopped.

When the well has filled with water, the valve *h*, by the action of the float, is moved inward, which permits the water confined on that end of the piston to escape through the small port *k* in the valve-stem, thereby permitting the pressure-water to act on the opposite end of the piston, and, unseating the same, opens communication between the ejector C and the pressure-pipe A by way of the ports *l* and *m*, and thereby sets the ejector in operation, which ejects the static water from the well by way of the discharge-pipe G. After the water has nearly all been ejected from the well, the float E, dropping with the surface thereof, brings the short end of the lever F in contact with the outer end of the slot *i* and seats the valve *h*, which confines the water in that end of the casing, and moves the piston *a* to the left and seats it over the port *l*, thereby stopping the operation of the ejector, which remains so until the well is again filled.

To prevent the action of the water which passes through the passage *d* and escapes through the port *k* from closing the valve *h* when the ejector is in operation, and when the short end of the lever moves from the left end of the slot *i* as the float E is descending, I secure the spring *n* to the valve-stem in such a manner that it will bear against the side of the hole in the projection *o* on the cap D, thereby causing sufficient friction to overcome the said action of the water and retain it in its place until seated by the action of the float E.

In case the port *d'* should become choked, directly over the same is arranged a tap-screw, *p*, which may be readily removed, and thus permits the same to be cleansed.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a water-ejecting device, the combination of the pressure-pipe A, the ejector C, the discharge-pipe G, and the cut-off valve provided with the piston *a*, the flexible diaphragm *c*, and the trip-valve *h*. 5
2. In a water-ejecting device, the combination of the valve-casing B, the piston *a*, the diaphragm *c*, the passage *d*, leading from one end of the piston to the other, and the trip-
10 valve *h*, as set forth.
3. In a static water-ejecting device, the combination of the pressure-pipe A, the ejector C, the discharge-pipe G, and a cut-off valve arranged to be operated by the action of a
15 float, and provided with a diaphragm, *c*, arranged to be acted on from both its sides by the water.
4. In a water-ejecting device, the combination of the pressure-pipe A, the discharge-
20 pipe G, the ejector C, the float E, and a cut-off valve provided with a piston, *a*, diaphragm *c*, and trip-valve *h*.
5. In a water-ejecting device, the cut-off valve provided with the piston *a*, the diaphragm *c*, the passage *d*, and the trip-valve *h*,
25 provided with the friction-spring *n*, for the purpose set forth.
6. In a water-ejecting device, the combination of the pressure-pipe A, the discharge-pipe G, the ejector C, and a cut-off valve consisting of the piston *a* and diaphragm *c*, which
30 is acted on by the pressure-water, and provided with means to cut off communication between the pressure-pipe A and the ejector.
7. In a water-ejecting device, the combination of the pressure-pipe A, the discharge-
35 pipe G, the ejector C, the float E, the piston *a*, and a cut-off valve provided with a diaphragm, *c*, which is acted on by the pressure-water, and provided with means to cut off communication between the pressure-pipe A and the
40 ejector.

In testimony whereof I affix my signature in presence of two witnesses.

CHAS. WHITE.

Witnesses:

G. A. BOYDEN,
JNO. T. MADDOX.