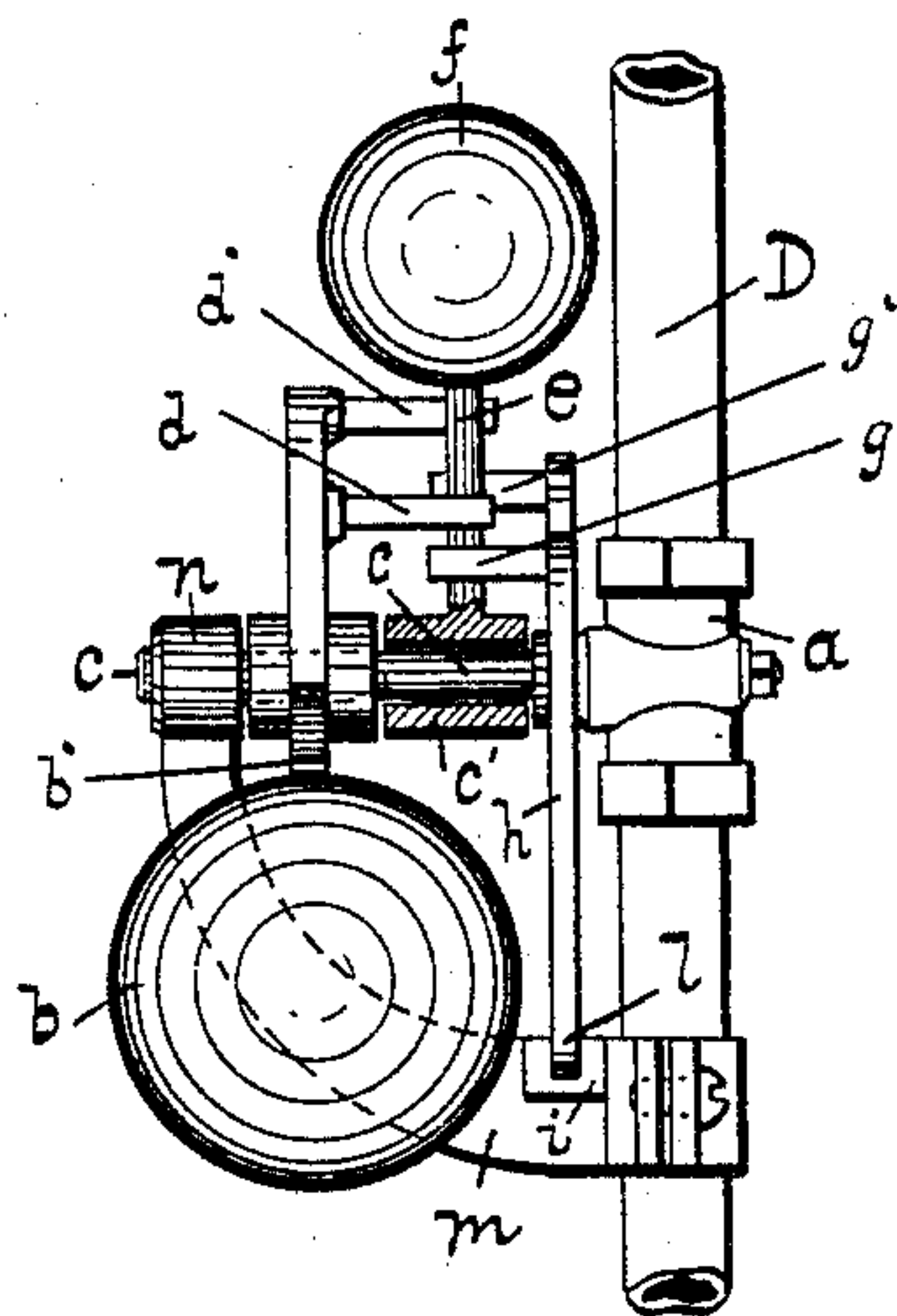
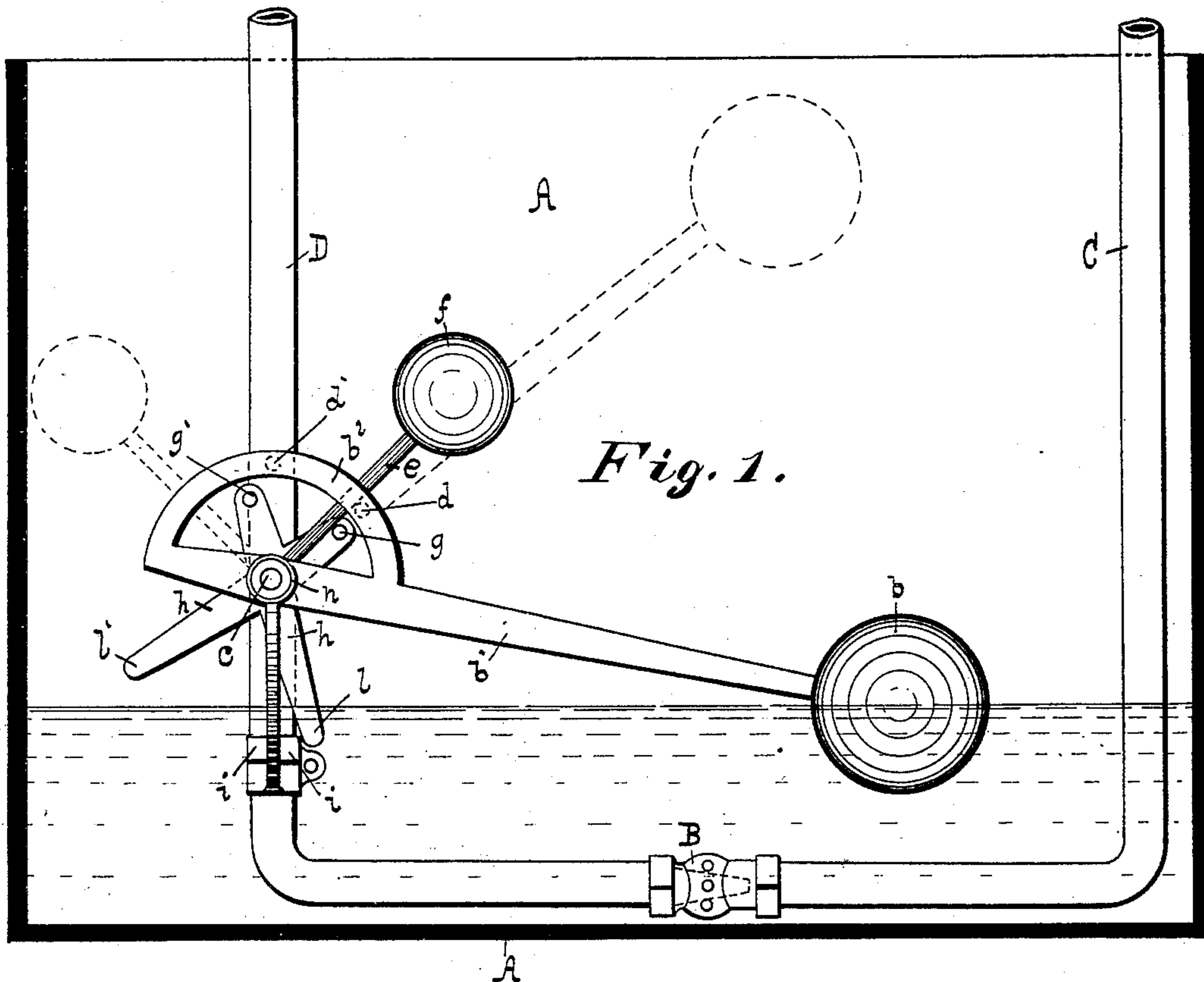


G. HAYDN.
FLUID EJECTOR.

Patented Nov. 23, 1886.



WITNESSES:

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INVENTOR:

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By

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UNITED STATES PATENT OFFICE.

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

FLUID-EJECTOR.

SPECIFICATION forming part of Letters Patent No. 353,219, dated November 23, 1886.

Application filed March 20, 1885. Serial No. 159,520. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HAYDN, 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 to the accompanying drawings.

My invention relates to improvements in fluid-ejectors, the object of which is to arrange devices by which the ejector is operated automatically, as illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the device with the well or tank in section, and Fig. 2 a detail end view of the mechanism by which the valve is actuated.

Similar letters refer to similar parts throughout the several views.

The letter A designates the tank or well, which is constructed or built of any suitable material, and which is located in cellars, &c., so that the water which is to be ejected may accumulate therein. In the tank is arranged an ejector, B, (which may be constructed like any of the well-known forms,) to which is attached the discharge-pipe C and the supply or pressure pipe D, the former extending to any desired point where the ejected fluid is to be delivered and the latter connected to any source of supply, hydrostatic or otherwise. In the supply-pipe is situated a cut-off valve, *a*, which is to be operated or opened to its full capacity by a slight move of the float *b* when the accumulated water in the tank A reaches a given height, the same being accomplished by the float *b*, which is secured to the pivoted lever *b'*, the latter being pivoted loosely on the shaft *c* and provided with an upward projection, *b²*, to which is attached two pins, *d* and *d'*, either of which (as the case may be) comes in contact with the stem *e*. The stem *e* is also loosely pivoted to the shaft *c*, and is provided with a suitable hub, *e'*, at its pivoted end and a weight, *f*, attached to the opposite end. This stem comes in contact in its movement with the pins *g* and *g'*, attached to the forked lever *h*, thereby operating the same by the gravity of the weight *f*.

The forked lever *h* is rigidly secured to the key of the cut-off valve *a*, and from which the

same is directly actuated, with the ends *l* and *l'* arranged to come in contact with the projection *i*, which limits the movement of the same.

The arm *m* is secured to the pipe D by any suitable means, and on which are arranged the projection *i* and the boss *n*, the latter forming the bearing or support for the shaft *c*, which may be integral with the key of the valve *a*, or constructed of a separate piece.

The operation of my device is as follows: The float *b* rises with the water as it accumulates in the tank A, and it being attached to the pivoted lever *b'* the same is actuated thereby, thereby bringing the pin *d* in contact with the weighted stem *e*, which as the float continues to rise brings the said stem to a perpendicular position, and which when moved beyond the said position by a slight further movement of the float loses its equilibrium and falls to the opposite side, thereby bringing the stem *e* in contact with the pin *g'* of the lever *h*, and as the weight *f* continues to fall the lever *h* is shifted therewith, turning the key of the valve *a* and permitting the fluid in the pressure-pipe D to operate on the ejector B with its full pressure at once, the movement of the weight *f* and lever *h* being stopped by the end *l'* of the latter coming in contact with the projection *i*. (See said stopped position by dotted lines in Fig. 1 of drawings.) The ejector being thus put in action continues to eject the water from the tank A through the discharge-pipe C. As the water is being discharged from the tank A the float *b* drops with the surface of the said water, which then brings the pin *d* in contact with the stem *e* and moves the weight *f* backward (the weight of the float *b* being sufficient to overcome the gravity of the weight *f*) until the said weight and stem are again in a perpendicular position, and the float *b* continuing to drop (as the water is ejected from the tank A) moves the weighted stem *e* beyond its equilibrium, which, with the weight *f*, drops back to its former position and shifts the lever *h* by the stem *e* coming in contact with the pin *g* thereon, thereby turning the key of the valve *a* and quickly cutting off the pressure-fluid and stopping the operation of the ejector until the water in the tank A again reaches a given height, or until the float *b* has reached a position sufficiently high to lift

and move the weight *f* beyond a perpendicular position, thus permitting the water to accumulate in sufficient quantity before the ejector is put in operation and to discharge nearly all the water before the action of the ejector is stopped.

Having described my invention, what I claim, and wish to secure by United States Letters Patent, is—

- 10 1. In an apparatus for draining cellars, the combination, with a pressure-pipe, a discharge-pipe, and an intermediate ejector between these two pipes and in communication with the cellar to be drained, of a valve in the pressure-
15 pipe, and operating mechanism therefor, substantially as described, whereby the valve is opened by the rising of the water and closed by the falling of the same in the cellar, substantially as explained.
- 20 2. In an apparatus for draining cellars, the combination, with a pressure-pipe, a discharge-pipe, and an intermediate ejector between these two pipes and in communication with the cellar to be drained, of a valve in the pressure-
25 pipe, and a float connected with the valve by intermediate mechanism, substantially as described, whereby the valve is opened quickly when the water rises to a specified height and closed quickly when it falls, substantially as
30 described.

3. The combination, with pressure and discharge pipes, and an intermediate ejector between the two communicating with the cellar to be drained, of a valve in the pressure-pipe, a weighted lever in connection with the valve, 35 and a float arranged to operate the weighted lever suddenly, whereby the valve is operated quickly when the water reaches a given height and closed quickly when the water falls, substantially as described. 40

4. In a device for operating ejectors, the combination of the valve *a*, the lever *h*, secured to the key of the valve *a*, and provided with the pins *g* and *g'*, the weighted stem *e*, and the float-lever *b'*, provided with the pins *d* and *d'*, 45 as set forth.

5. The combination of the valve *a*, the shaft *c*, the lever *h*, having arms and pins, the weighted stem *e*, and the float-lever *b'*, provided with pins that come in contact with the 50 stem *e*, as set forth.

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

GEORGE HAYDN.

Witnesses:

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