A. F. Erich,

Drainage Pump.

No. 53,594. Patented Apr. 3, 1866.

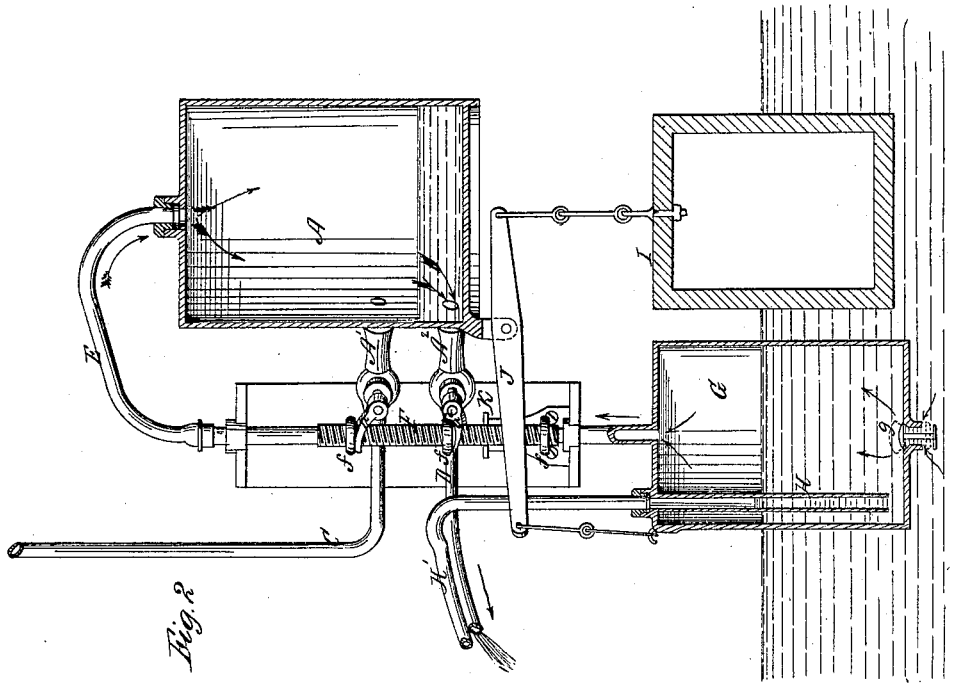

Fig. 2.

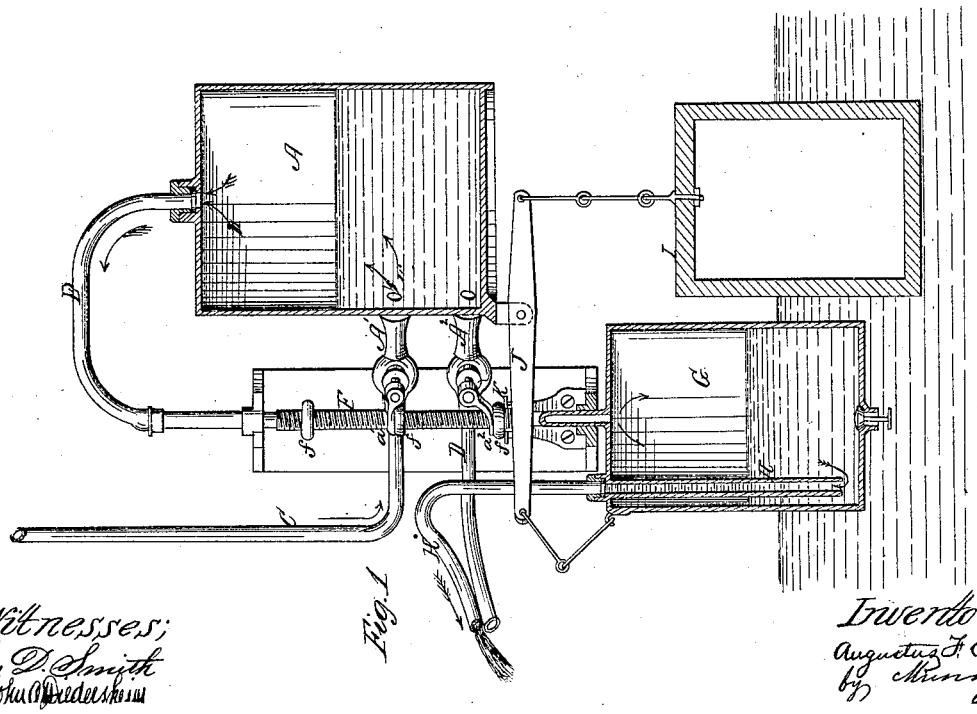

Fig. 1.

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UNITED STATES PATENT OFFICE.

AUGUSTUS F. ERICH, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN APPARATUS FOR DRAINING CELLARS.

Specification forming part of Letters Patent No. **53,594**, dated April 3, 1866.

To all whom it may concern:

Be it known that I, AUGUSTUS F. ERICH, of the city and county of Baltimore, and State of Maryland, have invented a new and Improved Apparatus for Draining Cellars; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a front view of my improved apparatus. Fig. 2 is a vertical section of the same.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain an efficient automatic apparatus for draining cellars, whose operation shall depend principally on a supply of water from a hydrant or other convenient quarter, and which shall be self-starting and stopping—that is to say, commence its operation of elevating and discharging the water from the cellar when the same shall have accumulated to a certain extent, and cease to operate when the cellar shall have been depleted to a given extent.

To enable others skilled in the art to which my invention appertains to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings, A represents a stationary vessel, having two nozzles, $A' A^2$, leading into it and arranged one above the other. To the upper nozzle, A′, is applied a pipe, C, through which water is supplied to the vessel A from a hydrant or other water-reservoir. To the lower nozzle, A^2, is applied a pipe, D, through which the water is discharged from the vessel A after performing its functions.

E is an elastic pipe, one end of which communicates with the vessel A at the top of the latter, while the other end is attached to a vertical pipe, F, whose lower end opens into the vertically-moving vessel G, at the top af which enters a pipe, H, connected with an elastic pipe, H′, which leads off to the point where the water from the cellar is to be discharged. In the bottom of the vessel G is a valve, *g*. Both the nozzles $A' A^2$ are provided with cocks, the heads $a' a^2$ of which, or plates attached thereto, are struck by the collars *f f f* on the vertical pipe F, and the said cocks are thus turned simultaneously during the upward and downward movement of the pipe F, the upper cock being opened when the lower is closed, and vice versa.

I is a float connected to one end of a lever, J, whose other end is connected to the elevating-vessel G. The float I, when in a state of suspension, more than counterbalances the vessel G, and the latter is then slightly elevated by the float.

K is a spring attached to a stationary part of the structure or apparatus, and projecting over the vessel, so that its free end stands in the line of the movement of the collars *f*. Its functions will be presently explained.

The operation is as follows: The vessel G and float I may be supposed to be located within the well of the cellar or at the point where the water collects. When the water rises to a certain extent it supports and elevates the float I, so that the latter no longer holds up the vessel G, which fills with water through the valve *g* and falls or sinks, carrying with it the pipe F and collars *f*. During the descent of the vessel G one of the collars *f* opens the cock of the upper nozzle, A′, and another closes the cock of the lower nozzle, A^2. Water then enters the vessel A from the hydrant or other source and expels the air from said vessel A, and this air, being forced through the pipes E F and injected into the lower part of the vessel G, expels the water from the latter into the pipes H H′, which conduct it off to a suitable point at which it may be discharged. The vessel G, becoming thus temporarily lightened, rises, and, a corresponding movement being given the pipe F, the collars *f* open the cock of the lower nozzle, A′, so that the water which entered the vessel A from the hydrant is permitted to discharge through the pipe D. The parts are now in a condition to repeat the above-described operation and perform their appropriate functions. As soon as the cellar has been so far drained that the water no longer sustains the float I the weight of the latter devolves upon the lever J, and hence the vessel G is held too high to continue to receive water.

It is an object to operate the cocks of the nozzles $A' A^2$ suddenly and quickly, so as to

have no perceptible intermission between the complete opening of one cock and closing of the other. This sudden movement is effected by the employment of the spring K, which, as the vessel G and rod F move up or down, comes in contact with one of the collars *f*, and by its elastic force retards the movement of the said vessel G, which thus accumulates power and has a more positive and quick movement when released by the spring K, and transmits a positive and quick movement to the said cocks.

The elastic pipes are not essential, as the pipes may be adapted to slide one within the other to attain the same object.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The combination, with the stationary vessel A, provided with a pipe leading from the hydrant or other water-supply and with a discharge-pipe, of the air-conducting pipe E, vessel G, discharge pipe or pipes, H H′, and float I, substantially as and for the purposes set forth.

2. The combination of the spring K with the cocks of the supply and discharge pipes of the vessel A and the collars *f*, for giving a positive and distinct motion to the vessel G when the cocks are reversed, as explained.

To the above specification of my improved apparatus for draining cellars I have signed my hand this 9th day of December, 1865.

AUGUSTUS F. ERICH.

Witnesses:
JAS. L. EWIN,
ALEXR. A. C. KLAUCKE.