

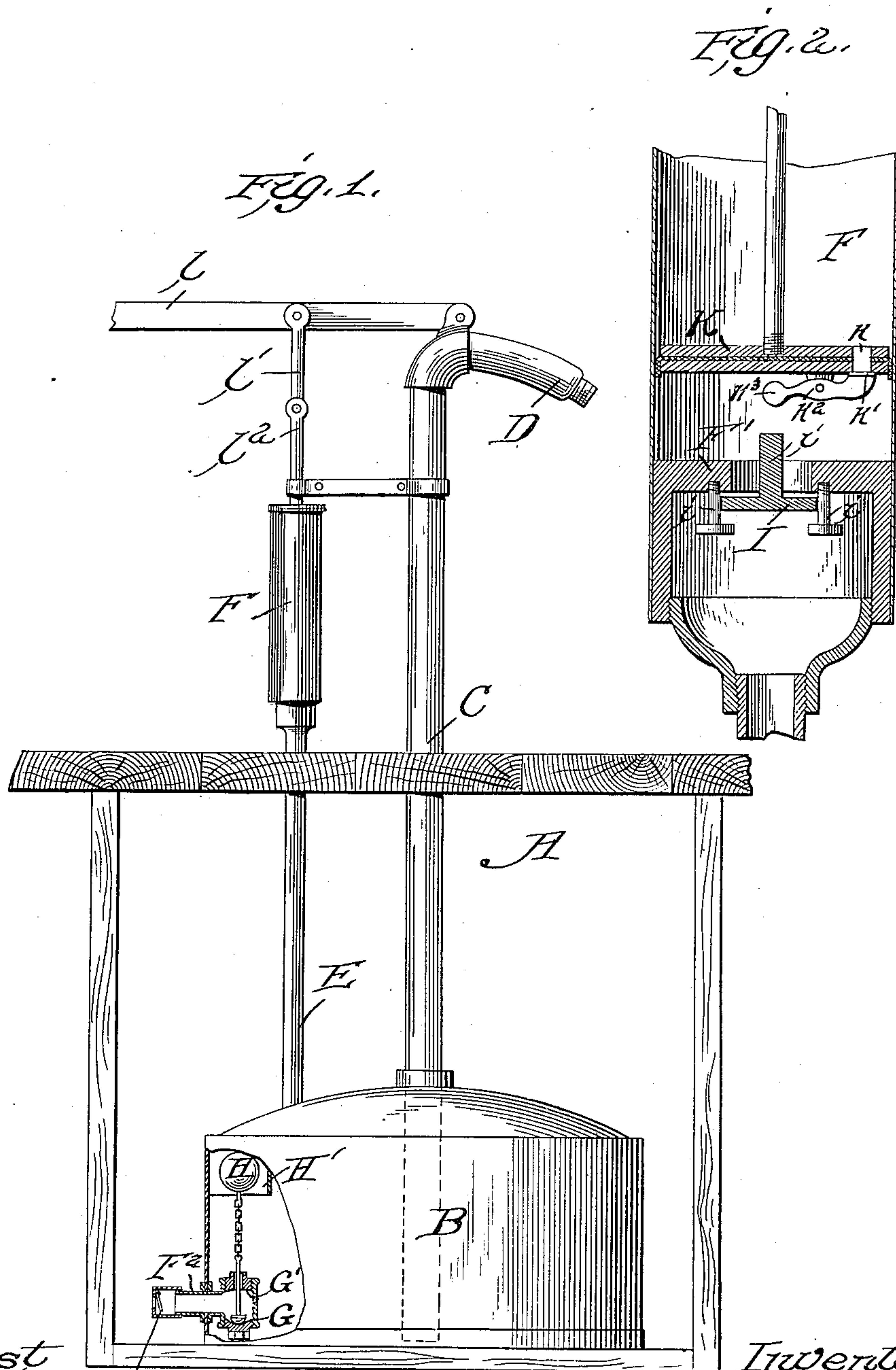
No. 648,168.

Patented Apr. 24, 1900.

H. E. HAMILL.
COMPRESSED AIR WATER ELEVATOR.

(Application filed May 24, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HOWARD EMMITT HAMILL, OF SHELBY, OHIO.

COMPRESSED-AIR WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 648,168, dated April 24, 1900.

Application filed May 24, 1899. Serial No. 718,001. (No model.)

To all whom it may concern:

Be it known that I, HOWARD EMMITT HAMILL, a citizen of the United States, residing at Shelby, Ohio, have invented certain new and useful Improvements in Compressed-Air Water-Elevators, of which the following is a specification.

My invention relates to improvements in compressed-air water-elevators; and the object of the invention is to provide an apparatus of this nature in which all water may be drained from the pipes as soon as the operator discontinues the working of the air-pump, whereby all liability of freezing of the pipes is obviated.

The invention is shown in the accompanying drawings, in which—

Figure 1 is an elevation of the apparatus, and Fig. 2 is a detail sectional view of the air-pump.

Referring by letter to the drawings, A represents the cistern from which the water is to be drawn. Within this cistern is located a closed water-chamber B, from which a water-delivery pipe C passes upward to any suitable point of delivery, where it may terminate in a nozzle of any suitable shape, such as shown at D. The pipe C extends into proximity to the bottom of the water-chamber B, and it will be seen that when the pressure upon the surface of the water is increased by forcing air into the chamber the water will be caused to rise in the pipe C and flow out at the nozzle, this action being the well-known action of pumps of this nature. The air is forced into the water-chamber through a pipe E from an air-pump F, hereinafter described more in detail.

In order to prevent the water being forced out of the water-chamber, the water-inlet pipe F² is provided with a suitable check-valve F³, which opens inwardly to admit water to the water-chamber, but closes automatically to prevent its exit therefrom. In order to cause the water in the water-chamber to fill to a constant level and prevent its filling the chamber completely, I provide a valve G, reciprocating within a valve-casing G' and connected by a chain to a float H, guided in a cage H', whereby the valve will open when the water drops below a certain level and will be closed

again after the desired amount of water has entered the water-chamber from the cistern. The valve-casing has an upwardly-extending opening G' opening into the water-chamber for the passage of the water, and the connection to the float also passes through this opening. The air-pump before referred to comprises a cylinder having a transverse partition F', through which is an opening closed by a suitable check-valve I, held in position by suitable guides *i* and having an upwardly-extending stem *i'*, which projects a suitable distance through the opening in the partition F'. The piston K of the pump is likewise provided with an opening *k*, closed by a check-valve *k'*, which I prefer to make in the form shown, the valve being carried on one end of a lever *k*², the other end *k*³ of which is weighted and arranged in line with the extension *i'* of the valve I. The piston is worked by a suitable handle *l*, link *l'*, and rod *l*².

From the above description the operation of the apparatus will be readily understood, but may be briefly stated as follows: When it is desired to draw water from the cistern, the air-pump is operated, the operator avoiding depressing the piston to such an extent that the end of the lever *k*² will contact with the stem of the valve I. The pump therefore acts in the ordinary manner, forcing air into the water-chamber B until the pressure on the water is sufficient to cause it to pass upward through the delivery-pipe. It may be stated that the pump is so arranged that in the ordinary operation the lever *k*² will not strike the extension of the valve I even though the operator does not use any special care. When, however, the desired amount of water has been drawn from the cistern, the operator depresses the piston to an abnormal degree, which causes the end *k*³ of the lever to strike the projection *i* of the valve. This action simultaneously opens the valves I *k'* and permits the air in the air-chamber to at once escape, whereby the flow of water will at once cease and the water in the delivery-pipe will return at once into the water-chamber B, leaving the delivery-pipe empty.

Having thus described my invention, what I claim is—

In combination in a compressed-air water-

elevator adapted to have the pipes normally drained of water, comprising a reservoir, a tank located therein having communication with said reservoir, a water-discharge pipe
5 leading from said tank, and an air-supply pipe having a tight connection with said tank, an air-pump located at the end of said latter pipe, and means operated automatically by the excessive movement of the pump-piston to auto-

matically provide an air-outlet from said tank, so substantially as described.

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

HOWARD EMMITT HAMILL.

Witnesses:

JOHN S. TRIMBLE,
W. N. WHITE.