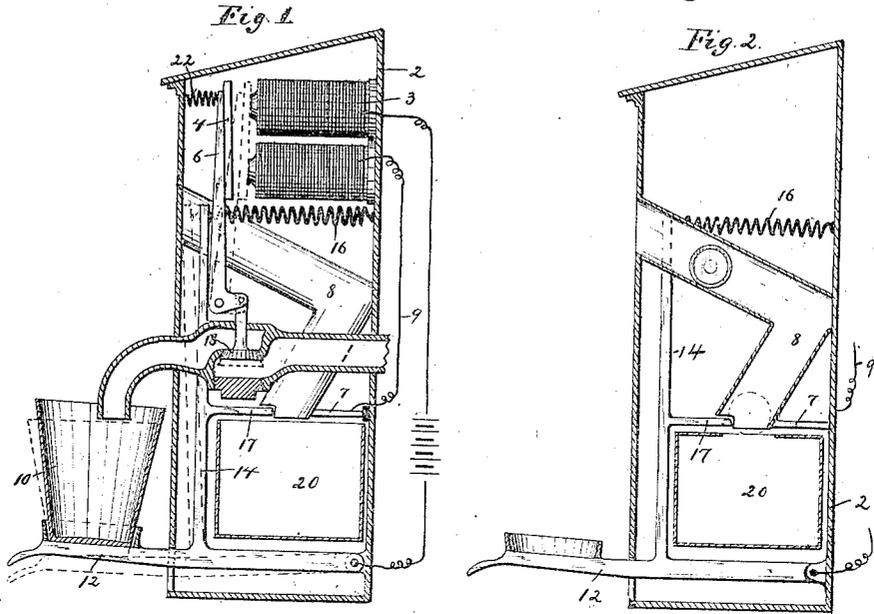


(No Model.)

B. S. MOLYNEUX.
AUTOMATIC ELECTRICAL FLUID RELEASER.

No. 409,364.

Patented Aug. 20, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

BARTON S. MOLYNEUX, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE NATIONAL WATER SUPPLY COMPANY, OF MINNESOTA.

AUTOMATIC ELECTRICAL FLUID-RELEASER.

SPECIFICATION forming part of Letters Patent No. 409,364, dated August 20, 1889.

Application filed June 4, 1888. Serial No. 276,041. (No model.)

To all whom it may concern:

Be it known that I, BARTON S. MOLYNEUX, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Automatic Electrical Fluid-Releasees, of which the following is a specification.

My invention relates to improvements in devices for operating a valve by the force of an electro-magnet in which the electrical contact is formed by the introduction of a coin and is sustained until the operation is completed, when the coin is released and the circuit broken.

My invention consists, generally, in the construction and arrangement hereinafter described, and particularly pointed out in the claims.

In the drawings which form a part of this specification, Figure 1 is a central vertical section of a device embodying my invention adapted to operate a valve. Fig. 2 is a vertical section of a similar device, showing the means employed for forming the electric contact.

In the drawings, 2 represents the outer case, which may be constructed of any convenient size or form. An electro-magnet 3 is located within the case, and also an armature 4, preferably secured to a bell-crank 6, by which the armature is supported within the field of the magnet. The bell-crank is attached to the spindle of a valve or faucet, as shown in Fig. 1.

8 represents a tube or conduit, which may be made of any suitable size to receive the coin required to operate the machine. The opening of this conduit is preferably placed at the front of the case 2. The conduit is inclined downward, and preferably passes through to the back of the case. A rectangular turn or bend is preferably here formed and the tube extended a suitable distance below this point. A movable stop or projection 17 is preferably placed at some point in this conduit, which contracts its area at said point and acts as a stop to the coin, and serves as a releaser, to free the coin and allow it to pass from its resting-place when retracted. A

plate 7 opposite this stop is preferably insulated from the case 2, and a wire 9 connects this plate with the magnet 3. The stop 17 and the plate 7 form contact-points, upon which the coin rests, thereby completing an electric circuit from the plate 7 to the magnet 3 and back through a suitable battery to the stop 17 on an oscillating arm 14. The magnet 3 will thus be energized and the armature drawn to it. The bell-crank 6 will be oscillated upon its pivot and the valve will be operated. The electric circuit will be maintained and the armature drawn forward as long as the coin remains in this position.

In Fig. 1 I have shown the device connected with a faucet for drawing liquids. A tumbler or other receptacle 10 may be located below the mouth of the faucet, and is preferably supported upon a swinging platform or support 12. This support is pivoted to the case 2, and is preferably provided with an arm 14, extending upward from the support and provided with a spring 16, the tension of which, acting upon the said arm, raises the support 12. A suitable weight may be substituted in place of the spring 16 to raise this support. The projection 17 upon the arm 14 extends within the conduit and acts as the movable stop to hold the coin, as before described. It will also be observed that the arm 14 serves to connect the stop or releaser 17 with the support 12, so that the releaser will be retracted when the support 12 is depressed. When the coin is in contact with the stop, the electric circuit is completed. The armature 4 and valve 18 will be in the position denoted by dotted lines in Fig. 1. The liquid will now pass through the valve and into the receptacle 10, and will continue until the weight of the liquid in the receptacle overcomes the tension of the spring 16. The support 12 will then be forced downward, throwing out the arm 14 and drawing the projection 17 out of contact with the coin, as denoted in dotted lines in Fig. 1. The coin now is free to fall into the cash-box 20, placed within the casing 2 to receive it. The electric circuit is now broken, and the armature is drawn back to its original position by a suitable spring 22 and the

valve 18 closed. The spout or nozzle of the faucet is preferably made to extend a short distance below the upper edge of the receptacle 10, in order to make it impossible to remove the receptacle without depressing the support 12 and releasing the coin.

By "tube" or "pipe" I mean the way for the passage of the material or substance to be measured or its delivery controlled.

I claim—

1. In a device of the class described, the combination, with a suitable magnet, of an armature operated by said magnet, a tube or pipe, a valve operated by said armature and intercepting said tube or pipe, a conduit for the reception of a coin, and contact-points in connection with the magnet and arranged to arrest the coin as it passes through the conduit and thereby to complete an electric circuit through said magnet, substantially as described.

2. In a device of the class described, the combination, with the magnet 3 and armature 4, of a lever 6, upon which said armature is located, a tube or pipe, a valve 18, connected with said lever and intercepting said tube or pipe, a conduit 8 for the reception of a coin, and contact-points arranged to hold the coin and complete an electric circuit to cause the operation of the valve and be released when said operation is completed, substantially as described.

3. In a device of the class described, the combination, with the electro-magnet and an armature, of a valve operated by said armature and the magnet, a conduit for the reception of a coin, a stationary contact-point, a pivoted support adapted to receive a suitable receptacle and to be turned upon its pivot when said receptacle has been filled by liquid passing through said valve, and a movable contact-point carried by said support, substantially as described.

4. In a device of the class described, the combination, with an electro-magnet and an armature, a lever 6, connecting said armature with a valve, said valve operated by said armature and the magnet, a lever 6, connected with said valve, a conduit 8 for the reception of a coin, a stationary contact-point 7, a pivoted support 12 for the reception of the material delivered from the valve, and the con-

tact-point 17, secured to and operated by the pivoted support 12 to hold the coin and complete an electric circuit through the magnet until the weight of the material delivered by the valve shall be sufficient to release the coin and break the circuit, substantially as described.

5. In a device of the class described, the combination of a tube or pipe, a suitable valve intercepting said tube or pipe and controlling the passage of material, an electro-magnet arranged to operate said valve, a conduit adapted to receive a coin, and an electric circuit completed by a coin in said conduit, substantially as described.

6. In a coin-operated liquid-releasing device, the combination, with a valve for controlling the flow of the liquid, of a coin-conduit, mechanism to be acted on by a coin to open the valve, and a coin-releaser actuated on the delivery of a certain quantity of liquid to permit said valve to be closed to cut off the flow of the liquid, substantially as and for the purposes set forth.

7. The combination, in a coin-operated liquid-releasing device, of a valve for controlling the flow of the liquid, a coin-conduit, mechanism to be operated on the introduction of a coin to open the valve, a coin-releaser, and a support connected with said releaser and adapted to receive a receptacle and be moved by the gravity of the liquid delivered to the receptacle, whereby said valve is opened on the introduction of a coin and automatically closed on the delivery of a certain quantity of the liquid, substantially as and for the purposes set forth.

8. In a coin-operated liquid-releasing device, the combination of a valve for controlling the flow of the liquid, a coin-conduit, mechanism to be operated on the introduction of a coin to open the valve, and means, actuated by the gravity of the liquid delivered, for automatically closing said valve, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 26th day of May, 1888.

BARTON S. MOLYNEUX.

In presence of—

R. H. SANFORD,

J. JESSEN.