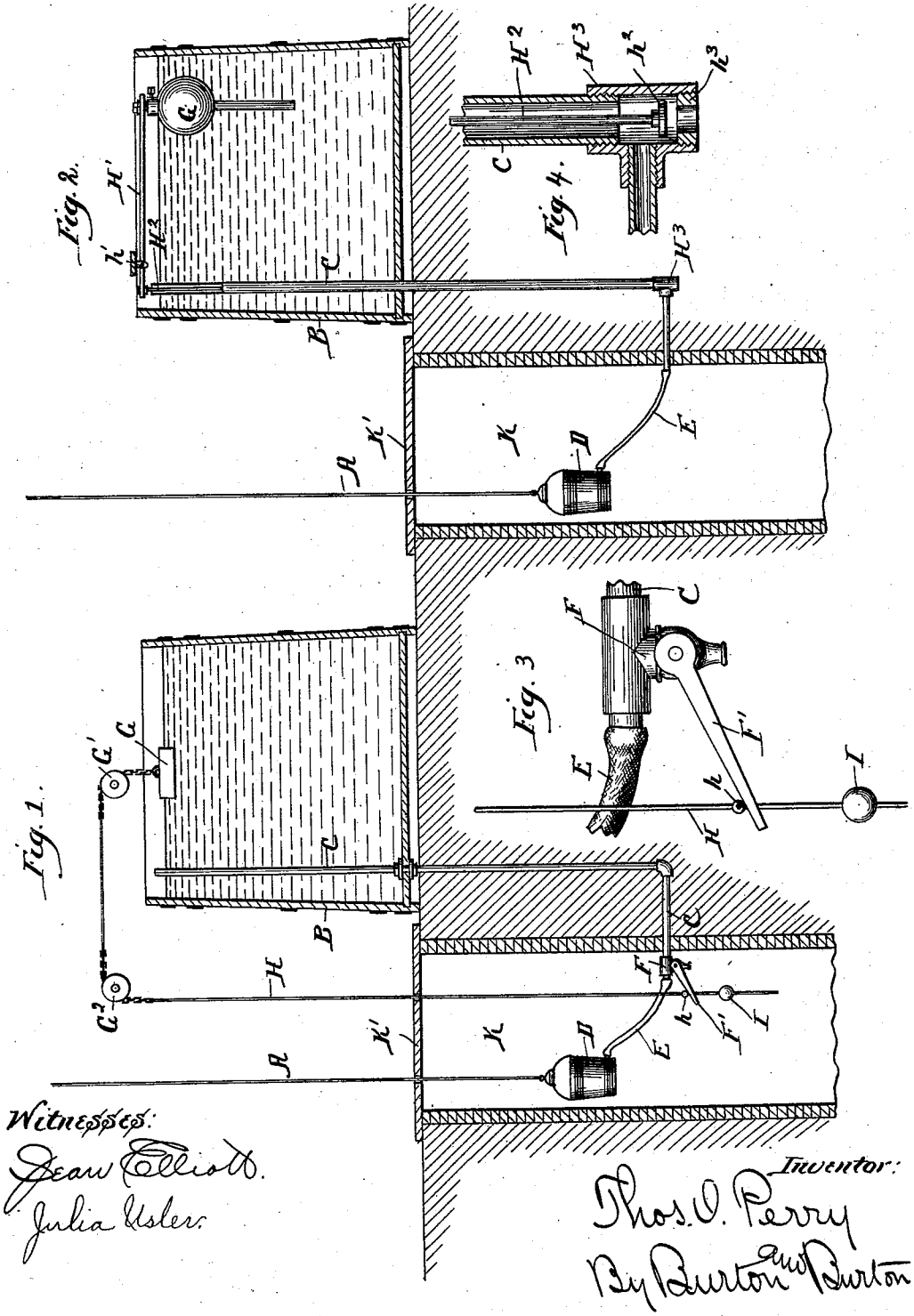
(No Model.)

T. O. PERRY.

AUTOMATIC WATER SUPPLY REGULATOR.

No. 455,950. Patented July 14, 1891.



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UNITED STATES PATENT OFFICE.

THOMAS O. PERRY, OF CHICAGO, ILLINOIS.

AUTOMATIC WATER-SUPPLY REGULATOR.

SPECIFICATION forming part of Letters Patent No. 455,950, dated July 14, 1891.

Application filed March 21, 1891. Serial No. 385,910. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O. PERRY, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in an Automatic Water-Supply Regulator, which is fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved device for controlling a motor which supplies water to a reservoir which shall be operated by water in the tank automatically when it rises or falls to given levels predetermined as the maximum and minimum desired.

In the drawings, Figure 1 is a sectional elevation of my invention, the tank and pit being in section and the operating devices being in side elevation. Fig. 2 is a similar view of a modified form of my invention. Fig. 3 is an enlarged detail side elevation of the draining device of the form shown in Fig. 1. Fig. 4 is an enlarged vertical sectional detail of the corresponding device in the form shown in Fig. 2.

This device is specifically intended to be applied to a windmill used to pump water to a reservoir, and in the drawings A represents the cord or cable known as the "furl-cord," by which the mill is turned out of wind or otherwise rendered inoperative, but in general represents the connection from the regulating device to the motor, of whatever form the latter may be; and the term "furl-cord" herein applied to it I do not design to be construed as limiting it to the device of that name in connection with a windmill.

B is the reservoir or tank, the supply of which is to be regulated. C is a pipe extending up through said tank and opening at the upper end at the high-water mark or maximum level which it is desired to have the water attain. It extends down below the tank a short distance, and is connected by means of the flexible tube E with the bucket D suspended on the furl-cord A. The tube E should be of such length as to permit the bucket D to be elevated above the connection of said tube to the pipe C as far as necessary to operate the shut-off or furling mechanism of the motor, and the pipe C should extend far enough below the tank B, so that the highest position of the bucket D thus connected to the lower end of the pipe is below the high-water mark or highest desired level of the water in the tank. The reason of this will appear as the operation of the device is explained.

F is a drain cock or valve interposed in the pipe C at some point as low as the connection of the flexible tube E thereto, so that when open any liquid contents of the bucket D may drain out of it.

G is a float in the tank, from which the cord, cable, or chain H extends up over a guide G', and thence horizontally over the guide G^2, and down to the operating-lever F' of the drain-cock F. A stop or "knot" h on the cord H engages the lever F' above the latter, and a weight I, suspended on the cord below the lever, affords sufficient power to move the lever when the stop h engages it without restraint from the float G. The weight I itself serves as a stop to engage under the lever to lift it when the cord is pulled upward. The distance between the stop h and the weight or stop I may be fixed or variable at will, as preferred, according to the mode of use.

The operation of this device is as follows: In the position shown in Fig. 1 the drain-cock F is supposed to be closed. When the water rises in the tank a little higher than the level shown and reaches the upper end of the pipe C, it will flow down through said pipe and eventually fill the bucket D, weighting it sufficiently to cause it to descend and operate the furling or shut-off devices of the motor. As stated, this result is presumed to be accomplished and the limit of descent of the bucket reached by the time the bottom of the bucket has arrived at the level of the lower connection of the tube E. The motor will therefore remain at rest until the water falls in the tank so far that the float G, descending with the water-level, draws up the cord H, and causes it, by engagement of the stop-weight I with the lever F', to open the drain-cock F, whereupon the water will escape from the bucket D, which, being thus lightened, will no longer control the furling devices, but will permit the motor to resume its action supplying water to the tank to restore the level. The

water having again risen to the level shown in the drawings, the descent of the cord H, caused by the rising of the float G, will permit the stop h to engage the lever F′, whereupon the weight I will operate the lever to close the drain-cock, so that when the water rises again above the top of the pipe C the bucket will be filled as before and the operation repeated, thus stopping the motor and permitting it to resume action as frequently as the change in the water-level renders necessary.

The modification shown in Figs. 2 and 4 consists in substituting for the cable H the lever H′ and rod H^2 as a means of operating the valve, the rod passing down within the pipe C, which will be made larger than in the other construction, and a simpler form of drain-cock may be employed, consisting of a plain valve h^2 on the end of the rod H^2, which seats downward over the aperture in the plug h^3, inserted in the lower end of the T H^3, which terminates the vertical portion of the pipe C. The lever H′ is fulcrumed between the float G and the connection with the rod H^2 at h'. In either of these constructions the bucket is preferably suspended in a pit K unless the well from which the tank is filled is sufficiently near, so that the bucket may be suspended directly therein, in which case K may represent such well. In either case the pit or well may have the cover K′ through which the operating-cords may pass, and the bucket D may thereby be at all times prevented from freezing. The amount of water which will be at intervals drained from the bucket will be small, and ordinarily will be allowed to soak away in the ground when the bucket does not drain directly into the well.

I claim—

1. In combination with a tank, the bucket D, adapted to be suspended from the furling mechanism of the motor which supplies the tank, the overflow-pipe C from the tank and a flexible connection between said overflow-pipe and the bucket, a drain-cock from said pipe, a float in the tank, and a connection therefrom to the drain-cock, substantially as set forth.

2. In combination with a tank, an overflow-pipe leading therefrom, a bucket connected to such overflow-pipe, a flexible tube which makes such connection, a drain-cock for said pipe, a float in the tank, and connections therefrom which operate the drain-cock valve, substantially as set forth.

3. In combination with a tank, the overflow-pipe C, leading therefrom, the bucket D, the flexible connection from said bucket to the pipe, the valve h^2 at the end of the overflow-pipe, the rod H^2, which operates said valves, located within the pipe and emerging from the upper end thereof, the float G, and its lever-arm H′, connected to said rod, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 14th day of March, 1891.

THOMAS O. PERRY.

Witnesses:
J. B. ROBINSON,
D. E. BARNARD.