

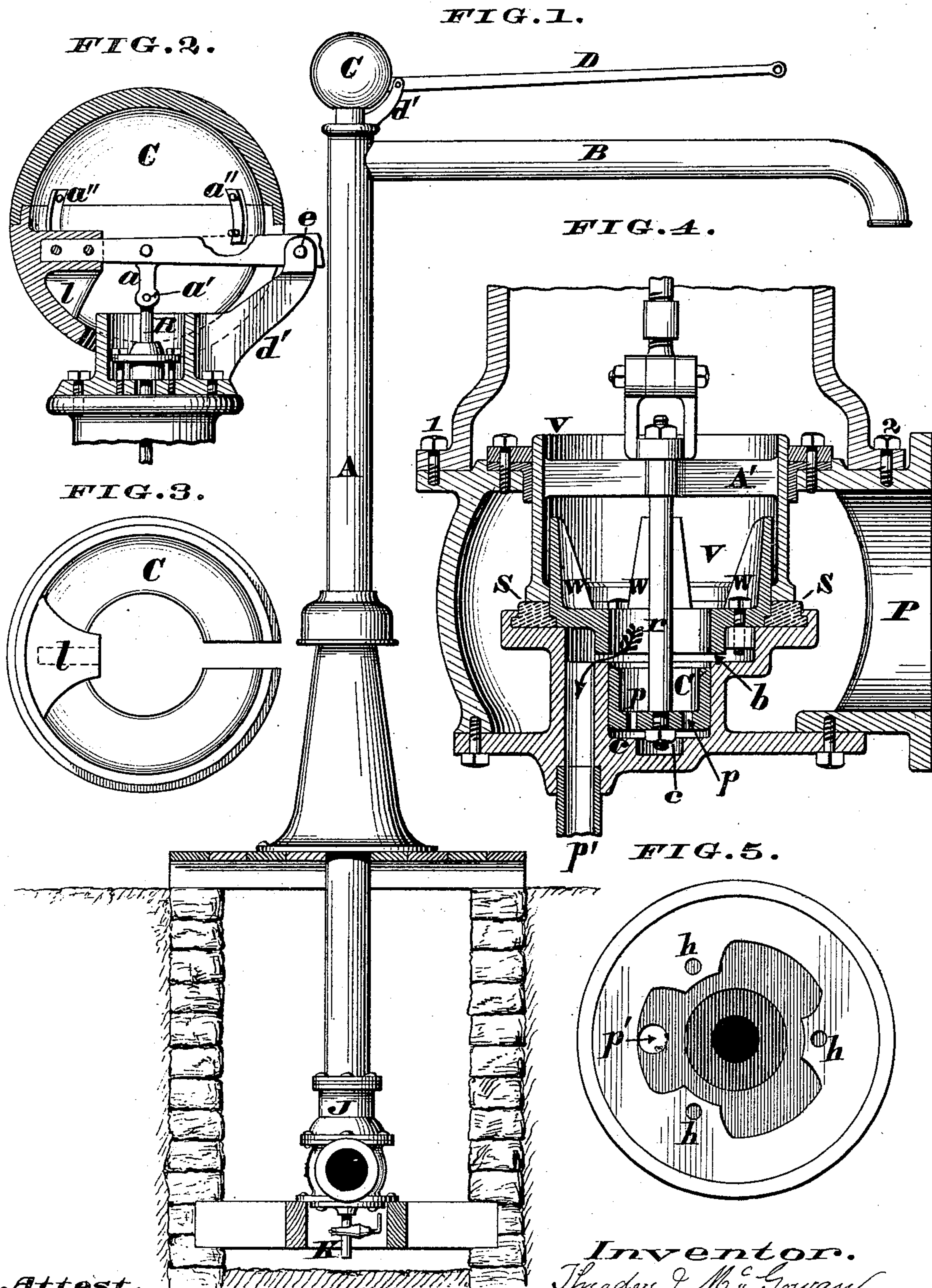
(Model.)

T. J. MCGOWAN.

WATER COLUMN FOR RAILROAD WATER TANKS.

No. 246,405.

Patented Aug. 30, 1881.



Attest.
Jus A Meyer
Journals & Engraving

Inventor.
Theodore J. McGowan,
by *Stearns & Peck*
his Attys.

UNITED STATES PATENT OFFICE.

THEODORE J. MCGOWAN, OF CINCINNATI, OHIO.

WATER-COLUMN FOR RAILROAD WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 246,405, dated August 30, 1881.

Application filed March 3, 1881. (Model.)

To all whom it may concern:

Be it known that I, THEODORE J. MCGOWAN, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Water-Columns for Railroad Water-Tanks, of which the following is a specification.

My invention relates to an improvement in water-columns for use principally upon railways, to supply the tanks of locomotive-tenders. The general structure and appearance of these water-columns are familiar; and they consist of a vertical pipe capable of rotation and connected at the bottom to the main leading to the supply-water, which may be contained in elevated tanks, reservoirs, or be pumped directly into said main. They carry at their upper ends a horizontal delivery pipe or spout, which stands normally in line with the railway-track, but is swung around upon the rotation of the vertical column so as to bring the discharge mouth or outlet over the well-hole of the tender. These columns are provided with valves, generally contained in the bottom of the vertical pipe, to shut off or permit the flow of the water, and they contain mechanism for operating the valve so as to regulate the flow.

The novelty of my invention consists in the construction of the valve and its connections, and in the construction and combination of the parts for operating the valve; also, in other details, all as will be herewith set forth and specifically claimed.

In the accompanying drawings, Figure 1 is an elevation of a water-column with its lower part extending downward and connected with the main pipe, from which water is received. Fig. 2 is a section of the hollow metal sphere or ball on the top of the column, and shows the manner in which the lever is attached, together with the mechanism underneath which is attached to the rod connected with the valve for admitting water into the column. Fig. 3 is a section of the metal sphere, with the lever detached for the purpose of showing the slots or sockets into which it is set when connected with other parts of the column. Fig. 4 shows a vertical section of the valves which admit water to the column from the water-works main or elevated tank, and whose functions

will hereinafter be more fully described. This figure also shows a pipe which allows the water to escape from the column whenever it is deemed necessary. Fig. 5 is a plan view of Fig. 4, showing the wings inside the main valve and the holes in said wings, through which bolts are inserted for fastening to other parts of the structure, showing, also, the channels through which the water passes and the drain or escape pipe.

Similar letters of reference indicate corresponding parts in the drawings.

A is the water-column; B, the arm pipe or spout; D, the lever for raising the valve and other mechanism, whereby water is admitted into the column; C, the metallic ball or sphere, to interior of which the rear end of lever D is rigidly attached by bolts or otherwise to the lug *l*, which is cast within and made part of said sphere. The lever is pivoted upon the bracket *d'* at *e*, which forms the fulcrum.

a is a short link pivoted to the lever D, and connects at *a'* the lever with the rod *r*, which raises and lowers the valve.

P is the pipe which leads to the main from which the supply of water is obtained.

V, Fig. 4, is the valve which admits the water into its interior. In the drawings it is shown as closed. The exterior of the valve is surrounded by water which comes from the street-main or elevated tank, and when the valve is raised off its seat *s* by means of the lever D the water passes into the interior and up into the column.

C' is a piston-chamber, through which the water flows from the interior of valve V into the chamber *c* by means of the small ports *p p*, the object of which is to prevent jars or shocks to the mechanism when the valve is returning to its stationary position, which will hereinafter be more fully explained.

W W W are wings cast in one annular piece, which is attached by bolts in the interior of valve U, the bolts being inserted in the holes *h h h*. Those wings serve as guides to the valve U in its upward and downward movement and prevent it from being displaced by lateral strain. They also serve to hold the valve-seat *s* in position. *p'* is a small drain-pipe for the purpose of allowing the residuary

water within the column to escape when it is desirable to have it so, especially in winter, to prevent the water from freezing. The escape or non-escape of the water can be effected by turning the stop-cock *k*. (Shown at the bottom of Fig. 1.)

The manner of operation is as follows: The spout or arm-pipe being drawn over well-hole in the tender of the locomotive-engine, the lever *D* is depressed, thus raising the metal sphere *C*. This, in turn, through the medium of the link, raises the rod *r*, and with it the valve *V*. The cross-arm *A'*, which is rigidly fastened within the valve *U*, serves as the means of connection between the rod and valve. The valve *U* being raised off its seat, the water enters the interior of the valve and up into the column, thence into the tender of the locomotive-engine through the arm-pipe or spout *B*. The rod *r*, in its upward movement, carries with it the piston or cataract valve *C'*, and closes the channel *b*, allowing the water to flow down and enter the chamber *c* through ports *p p*, which are channeled for that purpose. When the tender of the locomotive-engine has the requisite amount of water the lever *D* is let free, and the ball *C*, by means of its own gravity, returns to its original stationary position, at the same time depressing the rod *r*, closing the valve *U* on its seat, thus preventing more water from entering the column. The water in the chamber *c* prevents the valve *U* and piston *C'* from falling too rapidly, and as they gradually descend they uncover channel *b*, and the water contained in chamber *c* is expelled therefrom and passes into drain-pipe *p'* by means of the channel *b*. By this means the movement of the mechanism in returning to its stationary position is controlled by the amount of water expelled from said chamber *c*, and thus forms a cushion, preventing

shocks and jars to the machinery and all danger of accidents. The ball or sphere *C* is made in two halves, in order that access can be had to the mechanism within it for the purpose of making repairs, and it is fastened together by any appropriate means, such as *a'' a''*. (Shown in Fig. 1 of the drawings.)

If at any time access is needed to the valve mechanism, bolts, such as 1 2, on joint *J*, are removed from the flanges and the joint raised on the pipe underneath the column, sufficient play being allowed for that purpose, thus accomplishing the desired object.

I claim—

1. In a water-column, the combination, with the pivoted operating-lever and the valve-rod, of a counterbalancing weight or ball arranged centrally over the vertical column, rigidly attached to the rear of said lever, and connected to said rod by a pivoted link, thereby forming a compound leverage, substantially as described.

2. The combination, with the cylindrical valve, of the guide-wings *w*, secured within said valve, though not attached to it, whereby a guide for said valve is formed, substantially as described.

3. In a water-column, the combination, with the main valve-rod or its practical extension, of a cataract-piston, *C'*, contained in a chamber below the main valve, and provided with an outlet into a waste-pipe, whereby the steady motion of the main valve is insured to prevent shocks, and whereby, when said main valve is seated, the waste-pipe outlet is opened to permit the escape of the residuary water in the column.

THEO. J. MCGOWAN.

Witnesses:

GUS A. MEYER,
JEREMIAH F. TWOHIG.