

(No Model.)

H. R. WINKELMANN.
RESERVE TANK FOR WATER ELEVATORS.

No. 507,341.

Patented Oct. 24, 1893.

FIG. 2.

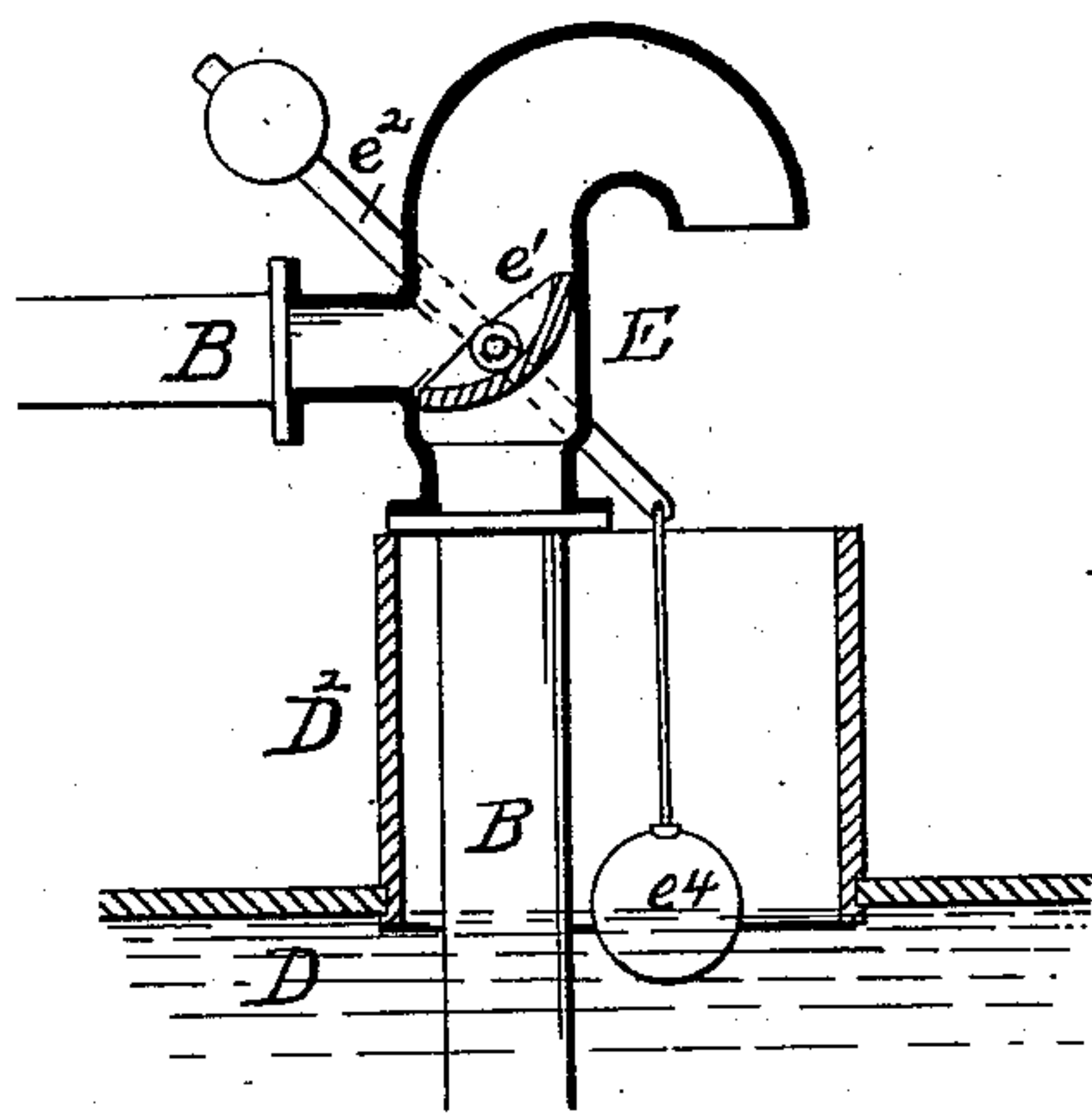
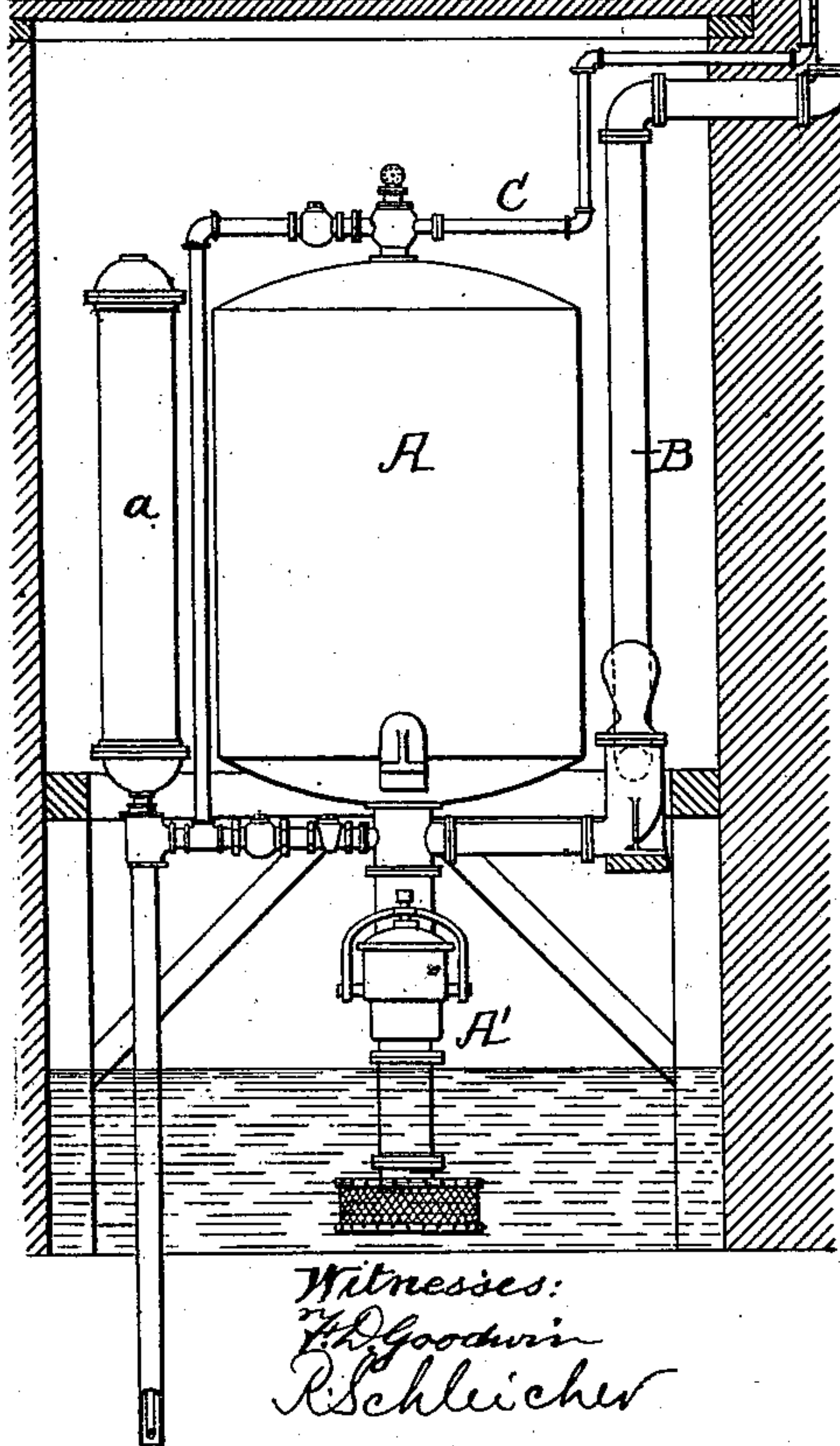
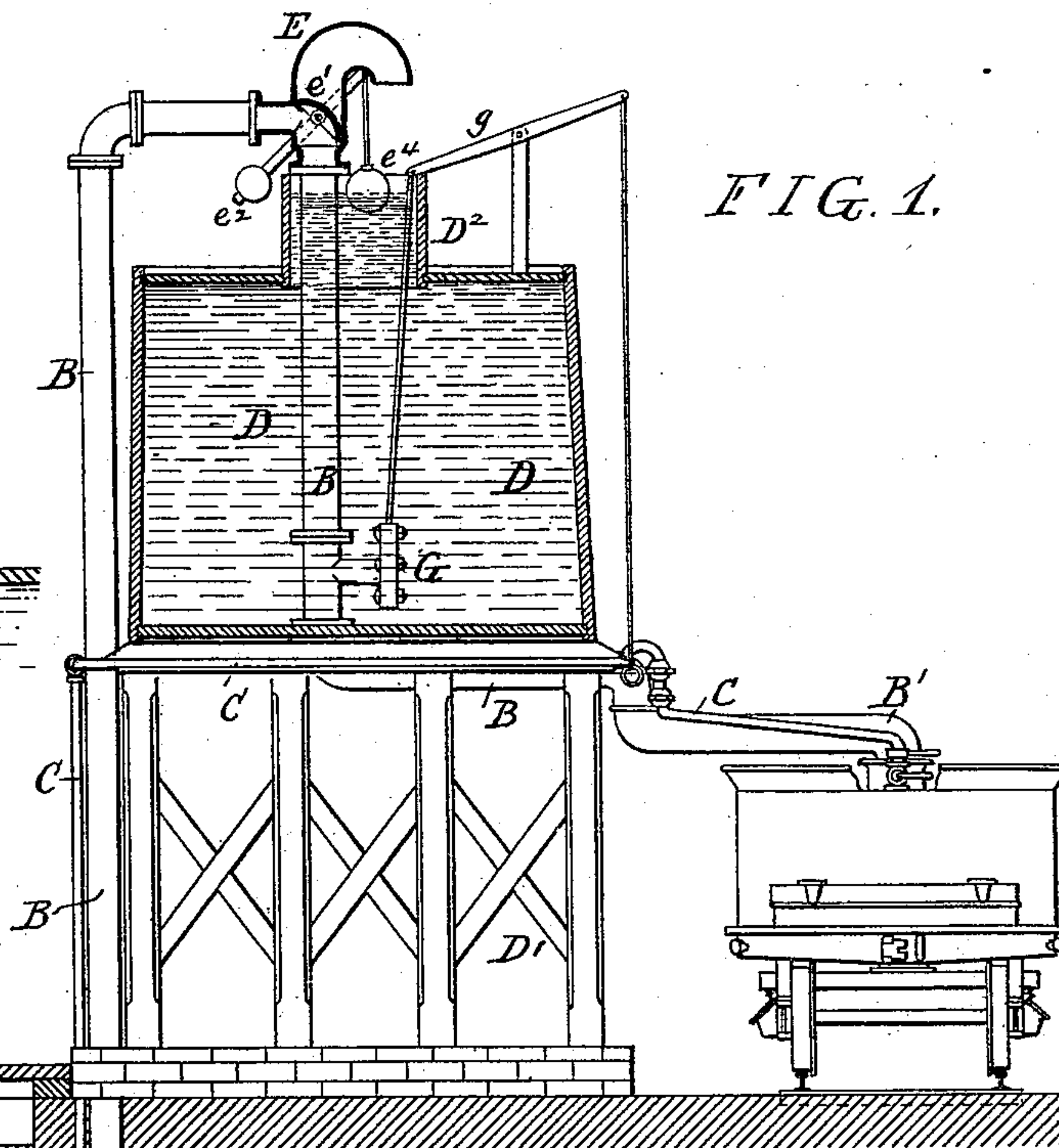
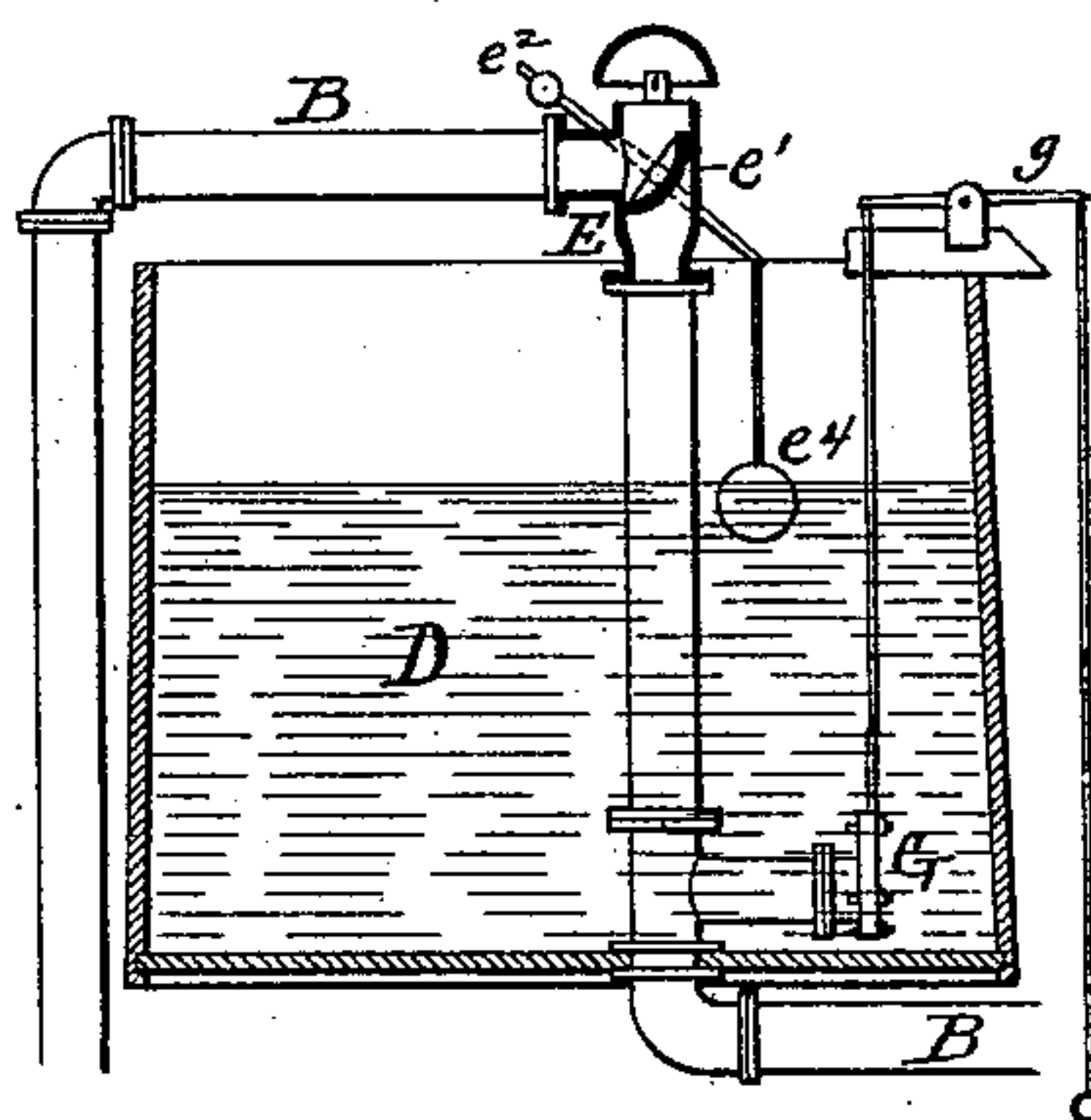


FIG. 1.



Witnesses:
J. H. Goodwin
Schleicher

FIG. 3.



Inventor:
Herman R. Winkelmann
by his Attorneys
Howan & Howan

UNITED STATES PATENT OFFICE.

HERMAN R. WINKELMANN, OF PHILADELPHIA, PENNSYLVANIA.

RESERVE-TANK FOR WATER-ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 507,341, dated October 24, 1893.

Application filed May 8, 1893. Serial No. 473,416. (No model.)

To all whom it may concern:

Be it known that I, HERMAN R. WINKELMANN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented an Improved Reserve-Tank for Water Elevators, of which the following is a specification.

The object of my invention is to combine with an automatic water elevator a reserve tank which will at all times be filled with water, so that an engine can draw water direct from the reserve tank when disabled. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1, is a view in elevation showing a steam vacuum water elevator and a reserve tank, the tank being in section, and the valve closed to the tank. Fig. 2, is an enlarged view of the valve which I prefer to use; and Fig. 3, is a view of a modification of my invention.

A is the vacuum tank mounted on suitable supports, in the present instance within the well.

A' is the suction pipe; B is the discharge pipe. These pipes are provided with suitable check valves.

C is the steam inlet pipe communicating with the vacuum tank and α is the reservoir for the spray water.

D is the reserve tank mounted in the present instance on suitable trestle work D' adjacent to the railway track, the reserve tank being elevated sufficiently to allow the water to flow from the tank into the tender by gravity. The upper portion D² of the tank is contracted forming what I may term a float box. The steam pipe C extends directly from the goose neck to the vacuum chamber A, while the discharge pipe B extends up over and through the reserve tank D to the goose neck B', but it will be understood that the discharge pipe may be situated at one side of the reserve tank and coupled thereto without departing from my invention.

E is a controlling valve for controlling the water from the vacuum tank, allowing it to flow through the discharge pipe to the goose neck or into the reserve tank; the valve casing is in the form of a T-coupling, the upper portion of the casing being turned forming a

nozzle or outlet so that the water will discharge into the reserve tank.

The valve e' , that I prefer to use, is of the "butterfly" type and is adapted to be seated upon the casing when in either position shown in Figs. 1 and 2. On the spindle of the valve is a lever e^2 , one arm of which is connected to a float or ball e^4 within the float box D² and the other arm of the lever is provided with a weight. When a float is used the weight in some instances may be dispensed with. It will be seen that when the water in the tank is at the height shown in Fig. 1 the valve is so turned as to allow the water from the vacuum water elevator to discharge directly through the goose neck into the tender, but should a quantity of water be drawn from the reserve tank as shown in Fig. 2, the valve will be shifted and if an engine should be coupled to the steam pipe the water elevator would first fill the reserve tank thus shifting the valve and the water would then flow directly into the tender and if the tender did not receive sufficient water, a second supply of steam would have to be introduced into the vacuum tank, the water from the vacuum tank flowing directly into the tender. Thus the reserve tank is kept at all times charged with water.

In order to utilize the one goose neck for the discharge of water I mount a valve G in the pipe B at the bottom of the tank D and connect it with a lever g mounted in the upper portion of the tank. This lever has an operating rod hanging outside of the tank so that the fireman can open the valve from the tender, but it will be understood that an independent pipe provided with a valve may be used through which water from the reserve tank may be discharged; the reserve tank may be utilized for other purposes than feeding locomotive tenders. For instance when the device is situated near a passenger station the water pipes of the station may connect with the tank, but the main object of the invention is to so couple a reserve tank to the vacuum water elevator that when a disabled engine has to be supplied with water it can draw from the reserve tank and the engine following must recharge the tank before it will receive a supply of water, thus insuring

a full supply of water in the reserve tank at all times.

It will be understood that it takes a longer time for the water to flow from the reserve tank by gravity into the tender than it does to discharge the water by steam pressure from the vacuum tank. Consequently a fireman will prefer to couple his tender to the vacuum tank rather than to the reserve tank.

10 In Fig. 3, I have illustrated the tank without the float box. The float will not operate the valve as quickly in this case as in the arrangement shown in Fig. 1, and the valve casing instead of being provided with a curved nozzle is provided with a straight nozzle and
15 a hood.

I claim as my invention—

1. The combination of the vacuum water elevator, the discharge pipes therefor, a reserve tank, a valve controlling the passage of
20 water through the discharge pipe, or into the reserve tank, and an outlet for said reserve tank, substantially as specified.

2. The combination of the vacuum water elevator, the discharge pipe therefor, a reserve tank, a valve controlling the passage of water through the discharge pipe, or into the reserve tank, said valve being controlled by
25 the water in the reserve tank, so that when the reserve tank is full the communication with the tank will be closed, and when the water in the tank is low, the valve will be opened, and water will discharge into the tank, substantially as described.

3. The combination of a steam vacuum tank, the reserve tank, the discharge pipe for the vacuum tank, a valve in said pipe, a float in the reserve tank controlling the valve, whereby water can be either discharged into
35 the reserve tank, or through the discharge pipe to the outlet and a valve whereby water may be discharged from the tank through the outlet of the discharge pipe, substantially as described.

4. The combination of a vacuum tank, steam supply pipe connected thereto, a reserve tank from which water will flow by gravity, a discharge pipe for the vacuum tank,
45 an opening therein, a valve for said opening, and a float controlling the valve, said float

being mounted in the reserve tank, so that when the water is low in the reserve tank, the water from the vacuum tank will flow through the opening in the discharge pipe and pass into the reserve tank, substantially as described.
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5. The combination of the vacuum tank, the reserve tank, the discharge pipe of the vacuum tank passing through the reserve tank, an opening in said pipe, a segmental
60 pivoted valve in said pipe, a float controlling the valve to regulate the flow of water either through the pipe or through the opening therein, substantially as described.

6. The combination of the discharge pipe, the vacuum tank to which it is connected, a reserve tank, said reserve tank having a contracted upper portion, an opening in the discharge pipe through which water may pass
65 into the reserve tank, a valve in said pipe, and a float in the contracted portion of the reserve tank, controlling the valve, substantially as described.

7. The combination of the vacuum tank, the discharge pipe therefor connected to a
75 goose neck hanging over a track, a steam pipe adapted to be connected to the steam supply pipe of a locomotive or tender, and connected directly to the vacuum tank, a reserve tank mounted above the level of the track so that
80 the water will flow from said tank to the tender, by gravity, a valved opening in the discharge pipe of the vacuum tank, a handle for operating said valve, whereby, on opening the valve, water in the reserve tank will
85 flow through the goose neck by gravity, an opening in the discharge pipe above the said valved opening through which water from the vacuum tank will flow into the reserve tank, with a valve controlling the flow of water
90 either through the opening, or through the discharge pipe and a float operating the said valve, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of
95 two subscribing witnesses.

HERMAN R. WINKELMANN.

Witnesses:

WILLIAM A. BARR,
JOSEPH H. KLEIN.