

(No Model.)

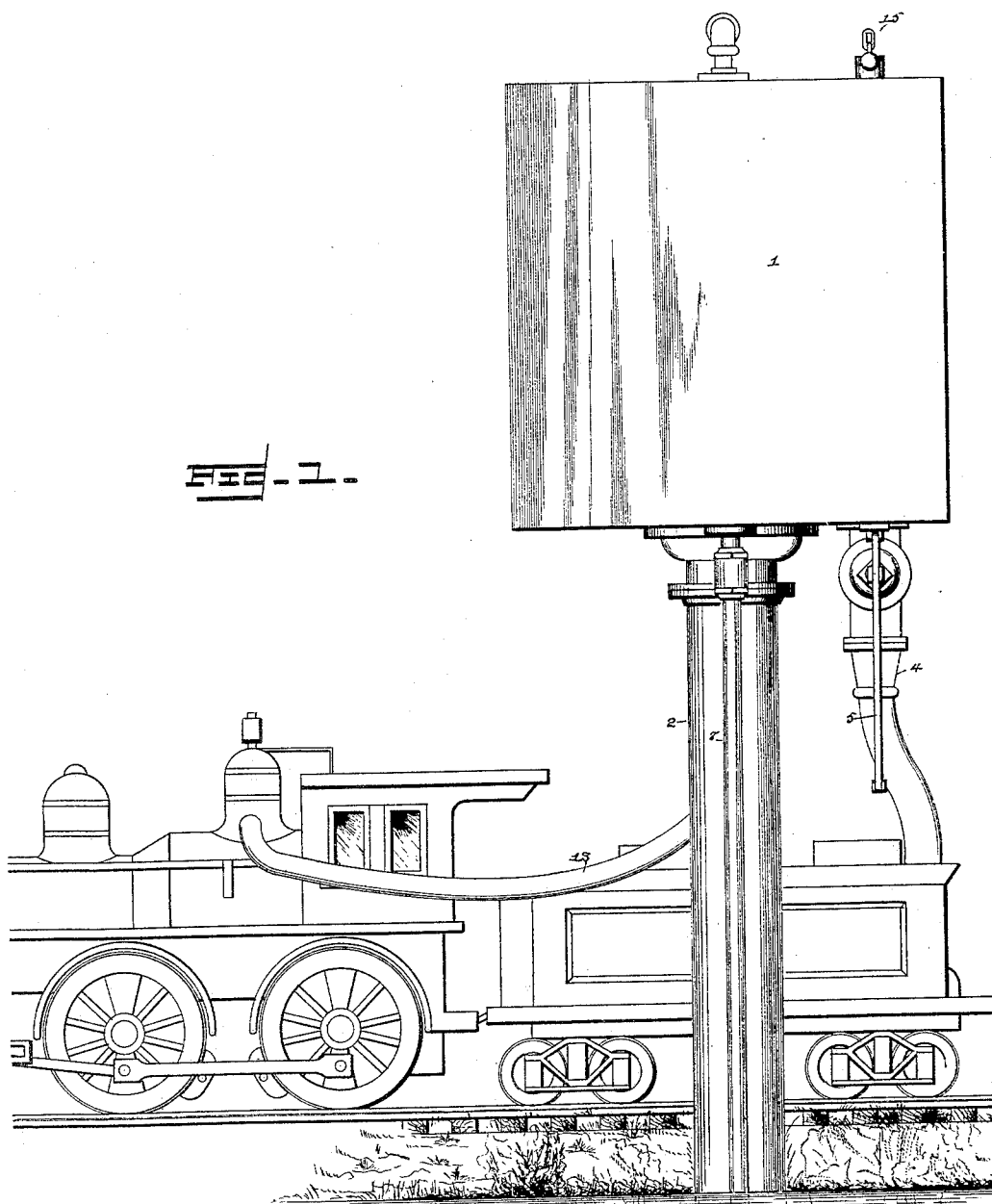
3 Sheets—Sheet 1.

D. P. BURDON.

WATER ELEVATOR FOR RAILWAY TANKS.

No. 460,844.

Patented Oct. 6, 1891.



Witnesses

E. S. Duvall Jr.
A. P. Holthaupter

By his Attorneys,

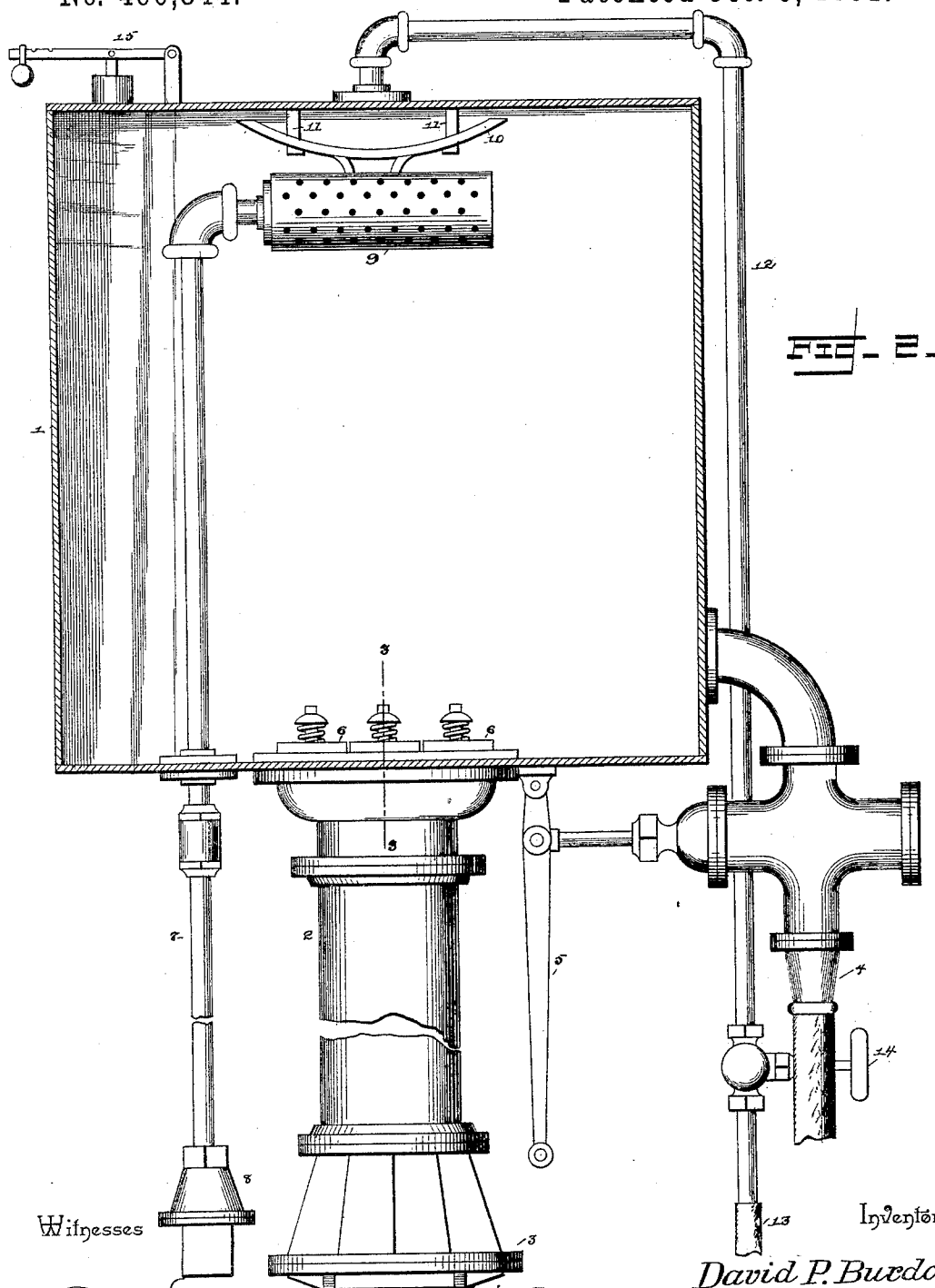
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CA Snow & Co.

3 Sheets—Sheet 2.

No. 460,844.

Patented Oct. 6, 1891.



Witnesses

E. S. Duvall Jr.
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Chas. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

3 Sheets—Sheet 3.

D. P. BURDON.

WATER ELEVATOR FOR RAILWAY TANKS.

No. 460,844.

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FIG. 3.

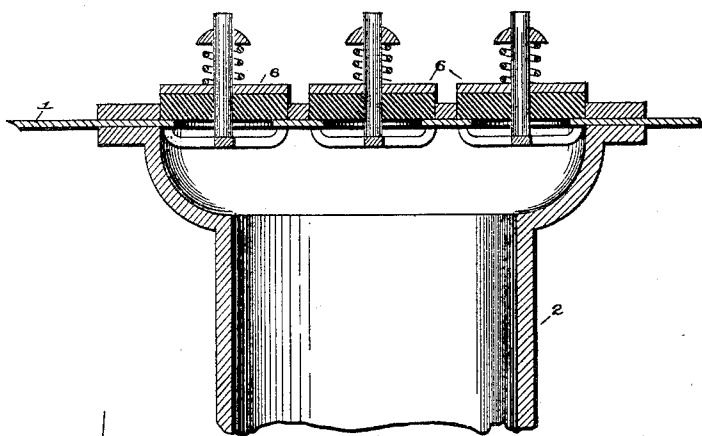
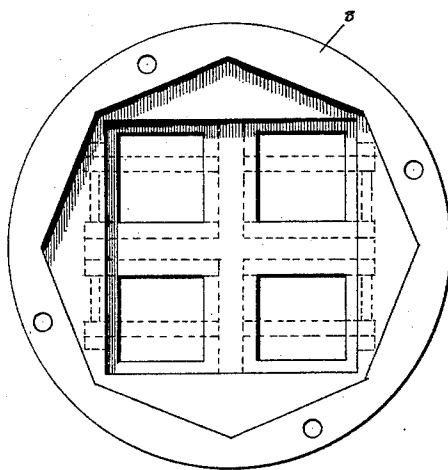
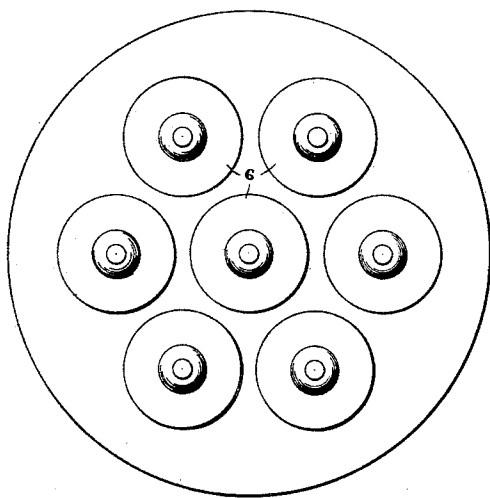


FIG. 4.

FIG. 5.



Witnesses

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By his Attorneys,

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Inventor

David P. Burdon.

UNITED STATES PATENT OFFICE.

DAVID PATTON BURDON, OF JACKSONVILLE, FLORIDA, ASSIGNOR OF ONE-HALF TO PAUL SATTELKAU, OF SAME PLACE.

WATER-ELEVATOR FOR RAILWAY-TANKS.

SPECIFICATION forming part of Letters Patent No. 460,844, dated October 6, 1891.

Application filed June 13, 1891. Serial No. 396,172. (No model.)

To all whom it may concern:

Be it known that I, DAVID PATTON BURDON, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Water-Elevator for Railway-Tanks, of which the following is a specification.

This invention relates to water-elevating devices; and it has particular reference to devices for filling railroad watering-tanks in a simple and efficient manner and without resorting to the expensive and complicated pumping mechanism now usually employed.

The invention consists in applying to a railroad watering-tank a steam vacuum water-elevator device, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the drawings hereto annexed, Figure 1 is a side elevation of an engine and tender in connection with a railroad watering-tank constructed in accordance with my invention. Fig. 2 is a side elevation, partly in section, of a railroad watering-tank constructed in accordance with my invention. Fig. 3 is a vertical sectional view taken on the line 3 3 in Fig. 2. Fig. 4 is a top plan view of the same. Fig. 5 is a plan view of foot check-valve seat and valves.

Like numerals of reference indicate corresponding parts in the figures of the drawings.

The tank or water-receptacle, which is designated by 1, is mounted for support upon a tubular cylinder or upright 2, the lower end of which is immersed into a lake or pond or other suitable source of water-supply and is provided with a check-valve or foot-valve 3, opening upwardly. The tank or receptacle 1 should be perfectly air-tight, and it is provided near its lower end with a gate 4, having an operating-lever 5, and to which the hose for conducting the water to the tender of a locomotive may be connected in the usual manner. The upper end of the tubular upright 2 is provided with a seat for a series of valves 6, opening into the tank 1.

7 designates a pipe, the lower end of which has a foot-valve 8, which is immersed into the water-supply. The upper end of the pipe 7 is extended into the tank 1 and is connected

with a perforated spray-cylinder 9, which is arranged horizontally in the said tank near the upper end of the latter. Upon the upper side of the spray-cylinder 9 is mounted a concaved deflector or diffusing-disk 10, which may be connected with the top of the tank by means of arms or brackets 11.

12 designates a steam-pipe, which is connected with the top of the tank at a point directly above the deflector or diffusing-disk 10. The opposite end of said steam-pipe is extended downwardly outside the tank to a point at which it may be readily connected with the locomotive-boiler by means of a flexible coupling-hose 13, of ordinary construction, and one end or section of which has been shown in the drawings. The steam-pipe 12 is also provided with a valve 14.

In operation the tank 1 is normally filled with water, or nearly so, the water being retained by the valves 6, which are held tightly against their seats by the pressure of the water within the tank. When a locomotive-tender is to be filled, the steam-pipe 12 is first connected with the boiler and the conducting-hose attached to the gate 4 is connected with the tender. The gate is then opened, as well as the valve 14, whereby steam is permitted to rush into the upper portion of the tank, thereby accelerating the escape of the water through the gate 4. When the tender has been filled, the gate 4 and the valve 14 are closed and the said gate and steam-pipe are disconnected from the tender and boiler of the locomotive, which may now proceed on its way. As the steam contained in the tank condenses a partial vacuum is created, which will cause water to be raised through the pipe 7 and the discharge in the form of spray through the perforated cylinder or nozzle 9, thus hastening the condensation and forming a nearly-complete vacuum within the tank. The water will now rise through the tubular cylinder 2 and valves 6 until the tank is nearly full and until the vacuum has been exhausted. The valves 6 will then close upon their seats and the tank be left in condition to supply the next locomotive that may come along.

It is preferred to provide the tank 1 with a safety-valve, as shown at 15, in order to pre-

vent the danger of injury to the tank by the pressure of steam when connection is made with the locomotive-boiler.

It will be seen that by this invention ordinary pumping or water-elevating mechanism for filling railway water-tanks may be dispensed with, and that the tank is filled with rapidity and certainty by the vacuum formed by the condensation of steam injected into the tank at the time of supplying each locomotive-tender. It is preferred to make the tank of such capacity as to be able to supply a tender without permitting the water to be lowered sufficiently to unseal the gate 4 and the valves 6.

Railway watering-tanks constructed in accordance with my invention may be successfully used wherever a supply of water is to be had within a reasonable distance of the level of the railroad-track.

By this invention expensive pumping machinery and attendants may be dispensed with, the water-elevating mechanism being simple and practically automatic in its operation.

Having thus described my invention, what I claim is—

In a device of the class described, the combination of the tubular supporting-cylinder having a foot-valve at its lower end, the airtight tank mounted upon said cylinder and having the inlet-valves, a water-pipe having a foot-valve at its lower end extending into the tank near the top thereof, the perforated tube-nozzle horizontally suspended upon the end of said pipe adjacent to the top of the tank, a concaved deflecting or diffusing disk supported upon said nozzle, the valved steam-pipe connected with the tank above the diffusing-disk and directly over the horizontally-arranged spray tube or nozzle, and a gate for emptying the tank, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DAVID PATTON BURDON.

Witnesses:

J. H. SIGGERS,
R. W. DAYTON.