

(No Model.)

2 Sheets—Sheet 1.

G. GIBBS.

FIRE EXTINGUISHER FOR RAILWAY CARS.

No. 387,064.

Patented July 31, 1888.

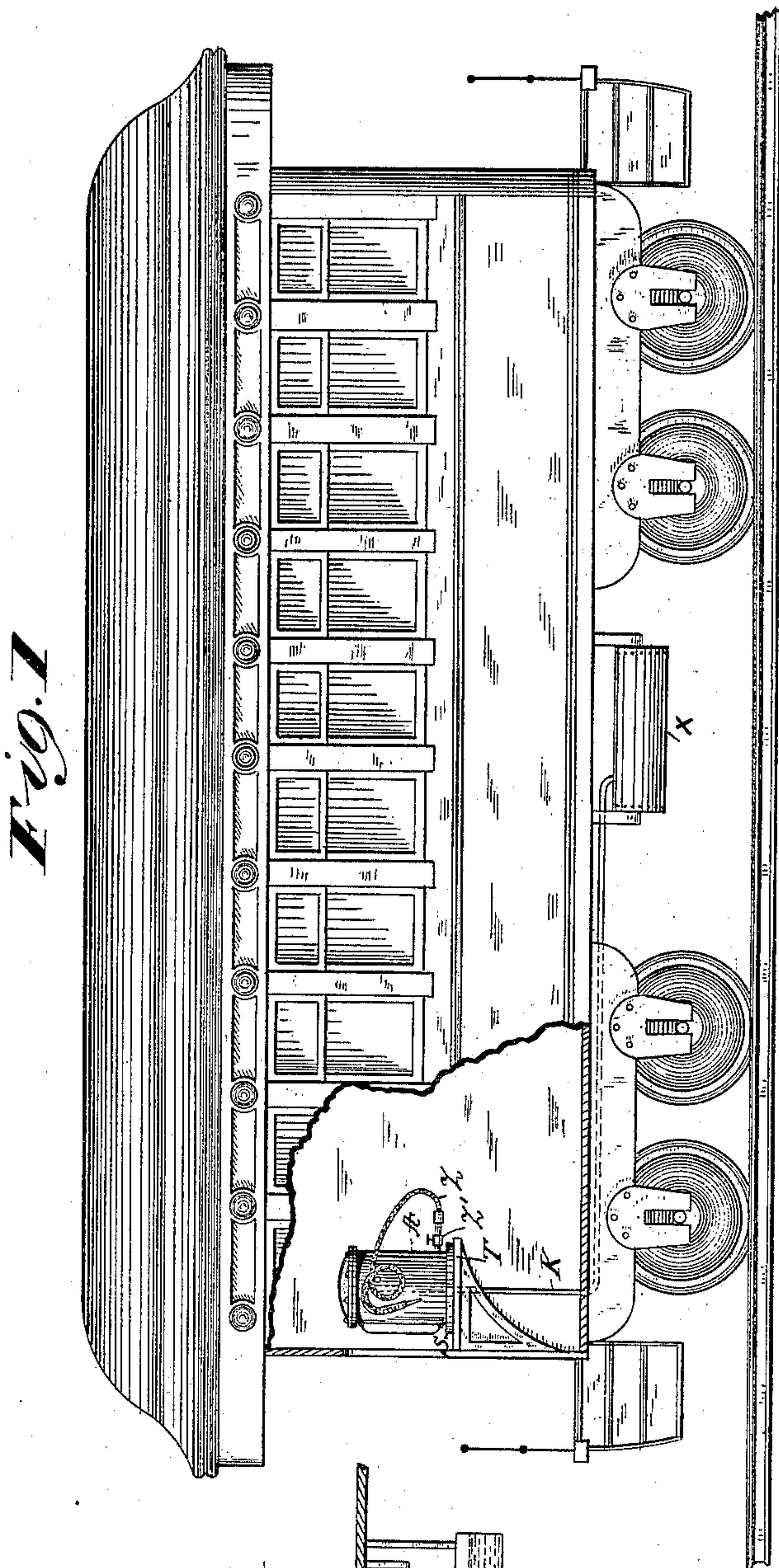


Fig. 1.

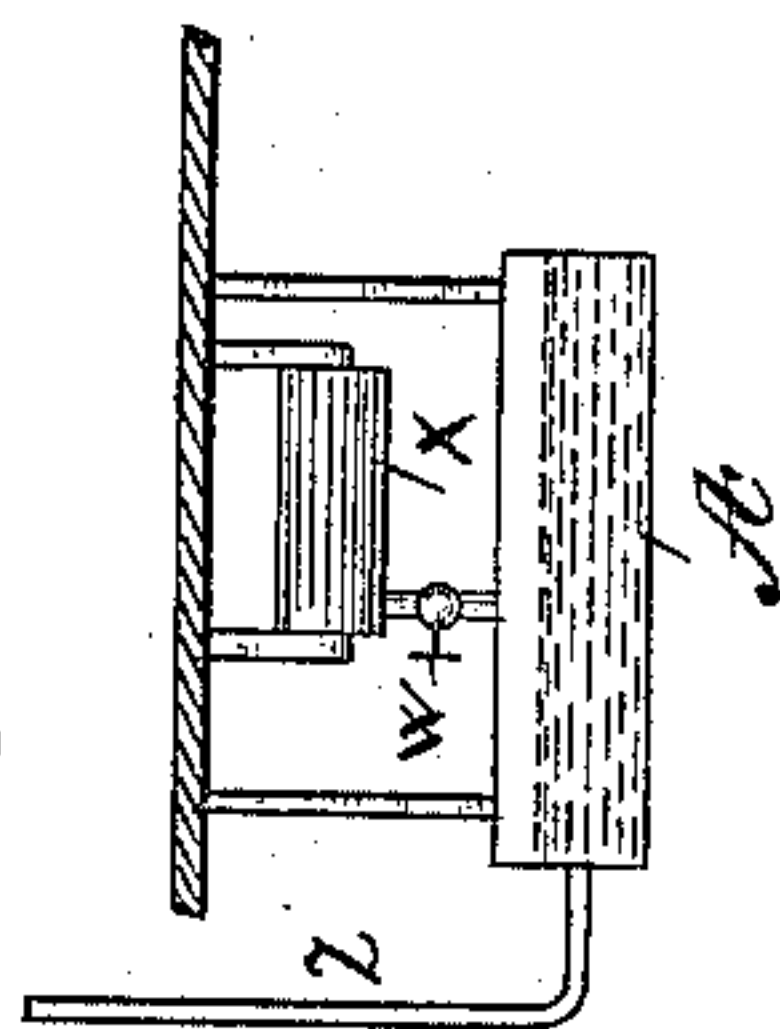


Fig. 4.

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(No Model.)

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Fig. 2.

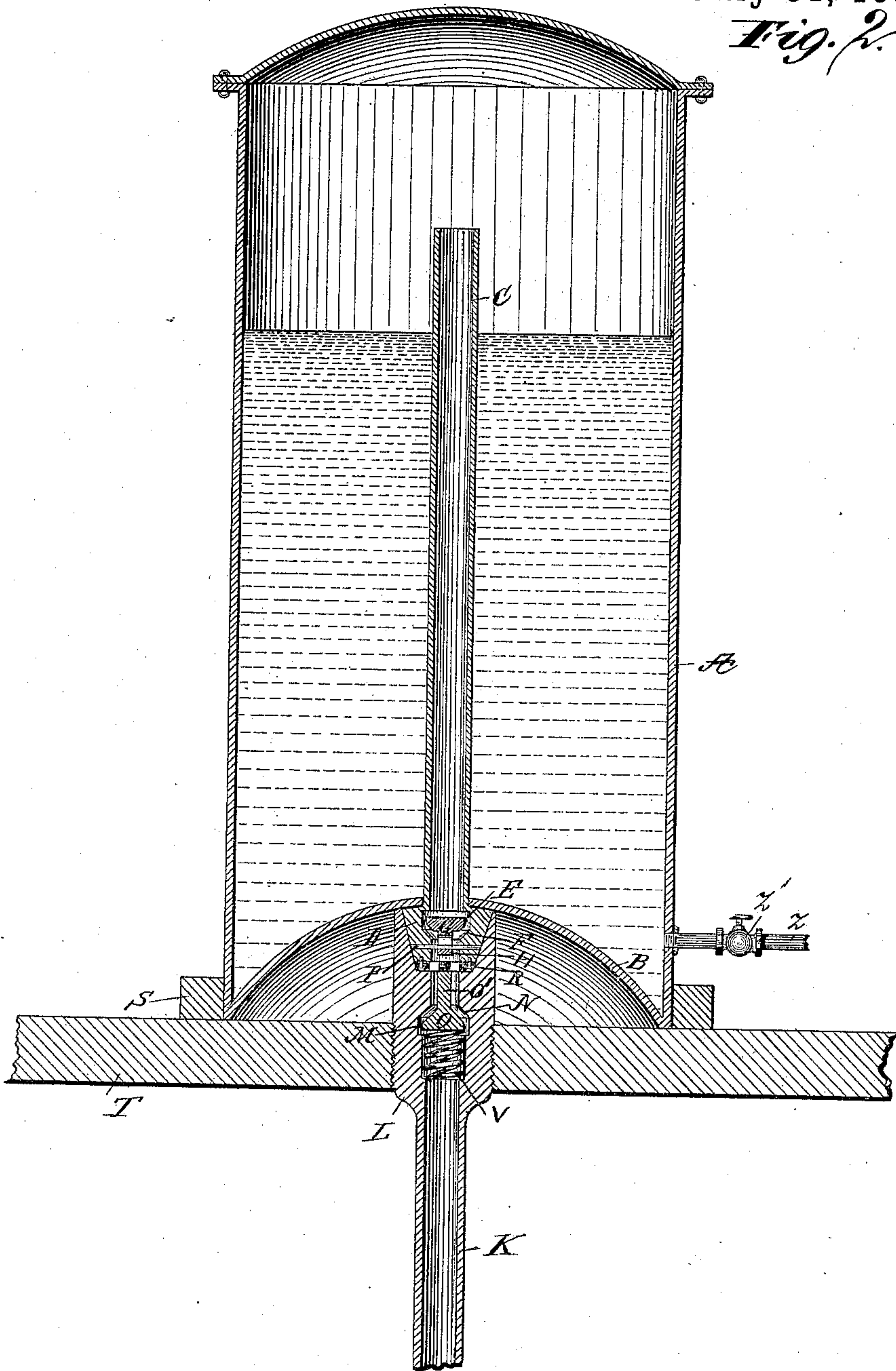
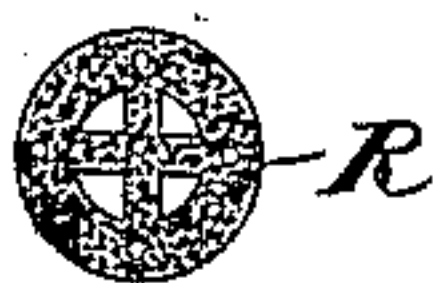


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE GIBBS, OF MILWAUKEE, WISCONSIN.

FIRE-EXTINGUISHER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 387,064, dated July 31, 1888.

Application filed January 17, 1887. Serial No. 224,582. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GIBBS, a citizen of the United States, residing at Milwaukee, county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Fire-Extinguishers for Railway-Cars, of which the following is a specification.

My invention relates to a fire-extinguisher, which is connected by means of a suitable pipe or pipes or otherwise to the auxiliary cylinder which is arranged upon passenger and other cars to operate the braking devices. The object of such a device is to provide a means for quickly extinguishing fires that may break out in passenger and other railway cars, and it is so constructed and arranged that the tank or reservoir for containing the fire-extinguishing liquid can be removed from its position and can be carried to any part of the car or train, the connecting and disconnecting parts being so arranged that the lifting of the said tank or reservoir will automatically close the air-conducting pipe both inside and outside of the tank, as will be explained.

Referring to the accompanying drawings, Figure 1 is a side elevation of a car, with a portion cut away to show the fire-extinguishing device and its connections. Fig. 2 is a vertical section of the liquid-containing reservoir and the automatically-operating valve for connecting and disconnecting it with the auxiliary cylinder. Fig. 3 is a detail view, and Fig. 4 a modification.

In the drawings, A represents the liquid-containing tank or reservoir, having a concave bottom, B, through which extends a pipe, C. This pipe extends to within a few inches of the top of the reservoir, as shown in Fig. 2, and is adapted to convey the compressed air from the auxiliary cylinder to the upper part of the reservoir and above the fire-extinguishing liquid, as shown.

Beneath the bottom B and forming an extension of the pipe C is a hollow plug, D, slightly cone-shaped and with its smaller end downward. This plug is also provided with a valve-chamber, E, constituting an enlarged portion of the compressed-air pipe C, which valve-chamber is provided with a suitable valve-seat, F, in which the valve G is made to fit. The valve G is provided with a vertical

downwardly-extending stem, H, said stem having a vertical slot through which extends a pin, P, to limit the vertical movement of the said valve when moving in an upward direction.

A perforated ring or washer, R, (shown in detail in Fig. 3,) is attached to the lower surface of the hollow plug D, and serves as a packing to prevent the escape of the compressed air, and also serves to keep open the lower valve, as will be explained.

The liquid-containing reservoir or tank A is arranged upon a suitable shelf or table, T, with a shoulder, S, surrounding the reservoir or tank to prevent it from slipping or being displaced from its normal position by the motion of the car. Extending upwardly through the shelf or table T is a pipe, K, having an enlarged portion or plug, L, at its upper terminus. This pipe K is connected to the auxiliary cylinder X beneath the car, as shown in Fig. 1.

The plug L has a cavity in its upper end and is adapted in size and shape for the reception of the plug D. It is also provided with a valve-chamber, M, having a seat, N, and a valve, O. This valve O has an upwardly-extending stem, O', which abuts against the ring or washer R, and which serves to keep the said valve away from the seat of the valve-chamber, and consequently keeps the channel open for the passage of the air. This is the normal position of the parts, and it is the position shown in Fig. 2 of the drawings. As here shown, the air can pass freely into the liquid-containing reservoir through the pipes K and C. A spring, V, arranged upon a shoulder within the pipe K, bears upon the underside of the valve O.

In case of fire, and it is desired to convey the fire-extinguisher to another part of the car or train, it may be simply lifted from the position shown, when the valve O, released from the pressure of the superincumbent parts, will, by virtue of the action of the spring V and the action of the compressed air in the pipe K, immediately rise and close the air-passage. At the same time the valve G will drop to its seat by means of gravity, assisted also by the back pressure of the gas within the pipe C. It will be seen, therefore, that by the simple act of lifting the liquid-containing

tank or reservoir, both valves will automatically operate to close the passage-way of the compressed air, thus preventing any escape of said air, either from the auxiliary cylinder
5 or from the tank. The tank is provided with a usual hose-connection, Z, and a stop-cock, Z'.

While the liquid-containing tank or reservoir is in position, as shown in the drawings, the air in the auxiliary cylinder will flow freely
10 into said tank, thus supplying a sufficient pressure to throw the water a considerable distance. This pressure will be retained in the reservoir when the valves are closed, as above described.

15 A modification of my invention is shown in Fig. 4, where the tank or reservoir A is a permanent and fixed one, and may be arranged below the auxiliary cylinder X, as shown, a suitable device, W, being provided for regulating or stopping the flow of the compressed
20 air from the auxiliary cylinder to the reservoir.

I do not confine myself to any particular arrangement of parts, however, as other valves
25 may be substituted for the one herein shown and described, and my invention seeks to cover any suitable fire-extinguishing device for railway cars that is connected to the auxiliary cylinder of the braking apparatus.

30 Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination, in a fire extinguisher for railway-cars, of the fluid-tank, the braking apparatus, and a pipe making air-connection between the braking device and the tank,
35 said pipe being separable at or near the tank and having suitable valves in its two parts for closing the same and preventing exit of air, as herein set forth.

2. In a fire-extinguisher, the combination, with a pressure apparatus, an air-tube extending therefrom having a valve in its extremity,
40 of a tank having a tube therein projecting beyond its outer surface, the end of the tank-tube being adapted to enter the air-tube and thereby depress its valve, whereby air-pressure is supplied to the tank.

3. In a fire-extinguisher, the combination,
50 with the pressure apparatus and an air-tube extending therefrom and having a valve at its extremity, of a tank, a tube extending from said tank, the end of the tank-tube being adapted to enter the extremity of the air-tube and thereby depress its valve and allow
55 flow of air into the tank, and a valve in the tank-tube closing outwardly by air-pressure in the tank, whereby the air is prevented from escaping when the tank is removed from
60 the air-tube, as herein set forth and described.

4. The combination, with the auxiliary cylinder, a removable reservoir or tank, and a valve in said reservoir or tank having its opening toward the interior of the latter, of
65 a valve in communication with the cylinder and adapted to communicate with the other

valve, and opening oppositely to the former valve, substantially as set forth.

5. The combination, with the cylinder X, of a valve in communication with said cylinder
70 and held normally closed by the air therefrom, a portable reservoir, a protuberance in said reservoir adapted to communicate with and hold open said valve, and a valve in said reservoir adapted to close by gravity when the
75 said protuberance and valve are disconnected.

6. The combination, with the cylinder X for operating the brakes, of a valve in communication therewith, a removable tank, a protuberance adapted to communicate with said
80 valve and with the removable tank and to hold said valve open, and a gravity-valve in said protuberance, substantially as set forth.

7. The combination, with the cylinder for supplying compressed air and the portable
85 reservoir, of two valves detachably connected with each other, opening in opposite directions, and one being connected with the air-tank and the other with said reservoir, whereby one is held open and the other closed by
90 the air from said tank, and a casing in which one of said valves is located and the end of which bears upon the opposite valve to force it open.

8. The combination, with the auxiliary air-
95 cylinder, of a pipe, K, leading therefrom, a valve in said pipe opening toward the pressure of air, a tank for containing liquid, a pipe, C, on the interior of said liquid tank protruding beyond its outer wall and adapted to communicate with pipe K and force the valve
100 therein open, and a valve in said pipe C opening oppositely to the other valve.

9. The combination, with the auxiliary air-cylinder and a portable tank, of a tube extending upward in said tank, a hollow truncated cone on the outer wall of said tank and communicating with said tube, a valve in said cone opening toward the upper end of said
105 tube, a bar across the lower end of said cone, a pipe leading from said air-cylinder, an enlargement on the terminus of said pipe, a conical cavity in said enlargement for the reception of said truncated cone, a valve in said enlargement adapted to be forced open by the
115 bar on said cone, and a spring for holding it closed when said cone is removed.

10. The combination, with the air-cylinder and air tube or passage leading therefrom having an inwardly-opening valve with a vertical stem in its extremity, of a portable tank
120 having a tube extending out through its bottom and adapted to enter the air-tube, and a perforated fibrous disk or packing secured to the extremity of the tank-pipe, whereby the
125 stem of the valve is depressed and a tight joint secured by placing one pipe within the other.

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Witnesses:

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