

UNITED STATES PATENT OFFICE.

CHARLES ELMER LOMBARD, OF EAST WILTON, MAINE.

FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 618,989, dated February 7, 1899.

Application filed June 23, 1898. Serial No. 684,288. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ELMER LOMBARD, a citizen of the United States, residing at East Wilton, in the county of Franklin and State of Maine, have invented certain new and useful Improvements in Fire-Extinguishing Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in fire-extinguishers, and especially to automatic extinguishers, in which suitable chemicals may be supplied to the water-supply as the latter is allowed to flow to the automatic nozzles, which may be connected to the main water-pipe leading from the supply-reservoir.

More specifically the present invention consists in providing a supply and feeding tank and a float and connections, whereby as the fire starts the automatic nozzles a valve in a chemical-bottle is opened and its contents allowed to flow into the exit-tube, and at the same time valves are operated to allow water to flow from a supply-reservoir.

To these ends and to such others as the invention may pertain the same consists, further, in the novel construction, combination, and adaptation of parts, as will be hereinafter more fully described, and then specifically defined in the appended claims.

My invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which—

Figure 1 is a vertical section through my fire-extinguisher. Fig. 2 is a detail view of the valve in the pipe leading to the exit automatic nozzles or sprinklers.

Reference now being had to the details of the drawings by letter, A designates a pipe through which water is forced in any suitable way to the tank B, from which when the tank is filled to the level of the overflow-pipe C it

is allowed to flow into the float-carrying tank D. Leading from tank D is a pipe E, to which automatic nozzles may be attached at different parts of a house. These nozzles may be controlled by thermostats commonly in use for such purposes, but which do not form any part of this invention.

At any suitable location is a reservoir F, in which a large supply of water is stored for fire purposes, and it may contain bicarbonate of soda in mixture therewith, which is allowed to mix with the chemical that is fed into pipe H from bottle V' before it reaches the nozzles. Connecting the reservoir F and the tank D is a pipe G, whereby the supply of water may be allowed to flow from the receiving-reservoir to the said supply-reservoir F. Leading away from the lower portion of the reservoir F is a pipe H, which communicates between said reservoir and the pipe E, and in said pipe H is located a slide-valve K, which works vertically in the chamber K'. This valve has an aperture k therein, which when it is brought so as to register with the bore of the tubing H will allow water to flow from the reservoir F into the pipe E and thence to the automatic nozzles. (Not shown in the drawings.)

For controlling the flow of water from the supply-reservoir to the nozzles I provide a float M, to which is connected on its upper end a stem M', which stem is slotted, as at m . Pivoted on a bracket N on the reservoir F is a lever Q, the opposite end of which lever carries a pin Q', which works in said slot m , as clearly shown in the drawings. Pivoted to the lever Q at any suitable location is the rod R, the lower end of which rod R is connected to the sliding gate-valve K and adapted to reciprocate said valve as the rod works up and down.

Fulcrumed on the pivot S is a lever S', to one end of which lever is pivoted the upper end of the link P, the lower end of which link is pivoted to lever Q at q . Supported at the upper end of the pipe V, which connects at its lower end with the pipe H, is the bottle V', adapted to hold the chemical which is to be mixed with the water of the reservoir as it passes to the nozzles. Mounted in this

bottle is a stopper-plug W, the lower end of which plug is provided with a disk W' with beveled edge, designed to securely shut off the escape of the chemical when the disk is forced down in the position shown in Fig. 1 of the drawings. This bottle is provided with a suitable filling-aperture and also with a vent in the filling-cap; and to the upper end of the said stopper-plug is pivoted one end of the lever S'.

Connected to the upper end of the stem M' of the float M is a slide-valve J, which is adapted to seat against the shoulder I in the pipe Z, which pipe communicates between the lower end of the reservoir B and the upper end of the tank or reservoir D. This valve J is provided to allow water to flow from the tank B to reservoir D when for any reason, as from evaporation, the supply in the reservoir D should cause the float to lower a sufficient distance to cause the said valve to be unseated, and when the reservoir has been replenished the rising of the float will cause the water to cease to flow through the pipe Z by the closing of the valve. The slot m in the stem M' will allow of a slight movement of the float independent of the working of the lever Q, connected to said stem.

Connected to a ring on the stem M' is a cord X, which passes over pulleys and has a weight secured to its end to partially counterbalance the float-valves and lever.

The operation of the apparatus is as follows, viz: The tanks once being filled, as by means of a pump or otherwise and a fire starting the automatic nozzles, the water will begin to flow through the pipe E to the automatic nozzles, and as the water leaves the tank D the float will lower and the valve K will be opened and allow water to flow from the reservoir F through the pipe H to pipe E. As the link R is drawn down the lever Q is caused to tilt, and with it the link P, which latter causes the lever S' to tilt, and with it the plug-stopper W to rise up, allowing the chemical to escape through the pipe V and to the pipe leading to the nozzles. When it is desired to shut off the supply of water being fed to the fire or if the supply has been exhausted and it is desired to adjust the apparatus for use again, the thermostat-regulating nozzles are closed and water is pumped or otherwise forced through the pipe A and into the communicating reservoirs until they are filled, after which the source of supply of water is cut off. The raising of the float will close the valve K', and the valve in the chemical-bot-

tle will also be closed, and the apparatus will be in readiness for use again.

What I claim is—

1. A fire-extinguishing apparatus, comprising a supply-reservoir, a tank, a float carried therein, a chemical-containing receptacle, exit-pipe leading from said float-carrying tank, communicating pipes between the supply-reservoir and the latter and the exit-pipe leading from the same, the pipe leading from the chemical-containing receptacle and communicating with the pipe connecting the reservoir with the exit-pipe from the float-carrying reservoir, combined with the valves controlling the egress-pipes leading from the chemical-receptacle and the supply-reservoir and levers for operating the same, as shown and described.

2. In a fire-extinguishing apparatus, the combination with the supply-reservoir, the float-carrying tank, the float working therein, the exit-tube leading away from the lower portion of the float-carrying tank, a tube connecting and communicating between the said exit-tube and the supply-tank, a slide-valve in said connecting-pipe, a lever Q pivoted at one end to a bracket on the reservoir, its other end pivoted to the stem of the float, and a rod connecting the lever Q and the valve combined as shown and described.

3. In a fire-extinguishing apparatus the combination with the tank D, the float therein, the tank B, pipes communicating between said tanks, a valve located in one of said pipes, the lever Q, the pin Q' carried thereby and connected to said valve, the pin working in the slotted stem of the float, as shown and described.

4. In a fire-extinguishing apparatus, the tank D, the float therein, the supply-reservoir, the pipe G communicating between said tanks, the exit-pipe E leading away from tank D, the pipe H communicating between the supply-reservoir and pipe E, the lever Q pivoted to a bracket, and having connection with the stem of the float, the valve in pipe H, the rod R pivoted at one end to said valve, the other end pivoted to lever Q, the bottle, the valve therein, the lever S' connected to the latter, and the link P connecting the levers Q and S', combined as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES ELMER LOMBARD.

Witnesses:

ALBERT H. FARNUM,
GEORGE E. SANDS.