Aug. 20, 1935. N. DUBÉ 2,011,803

FIRE EXTINGUISHER

Filed Sept. 21, 1934

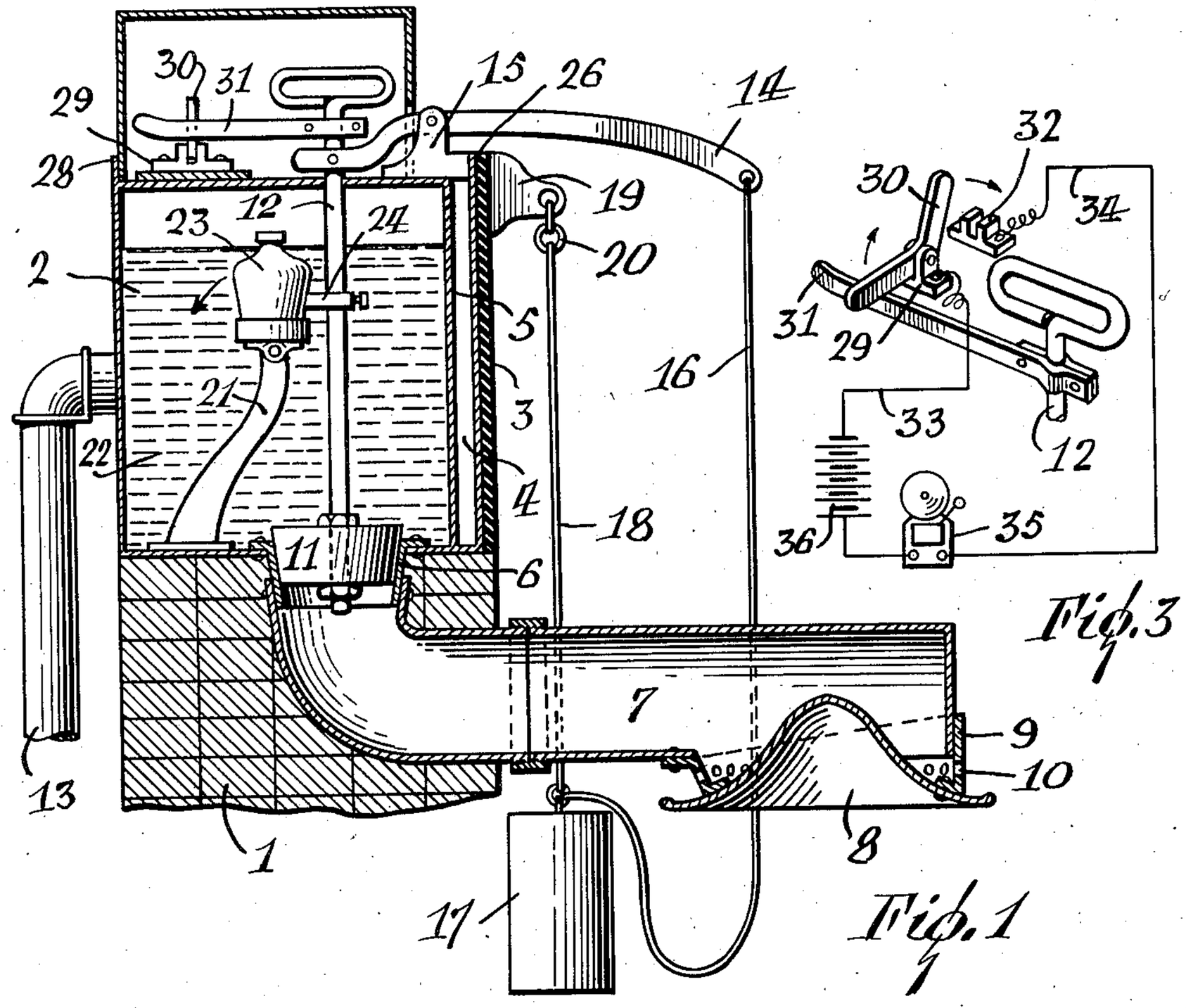

Fig. 1

Fig. 3

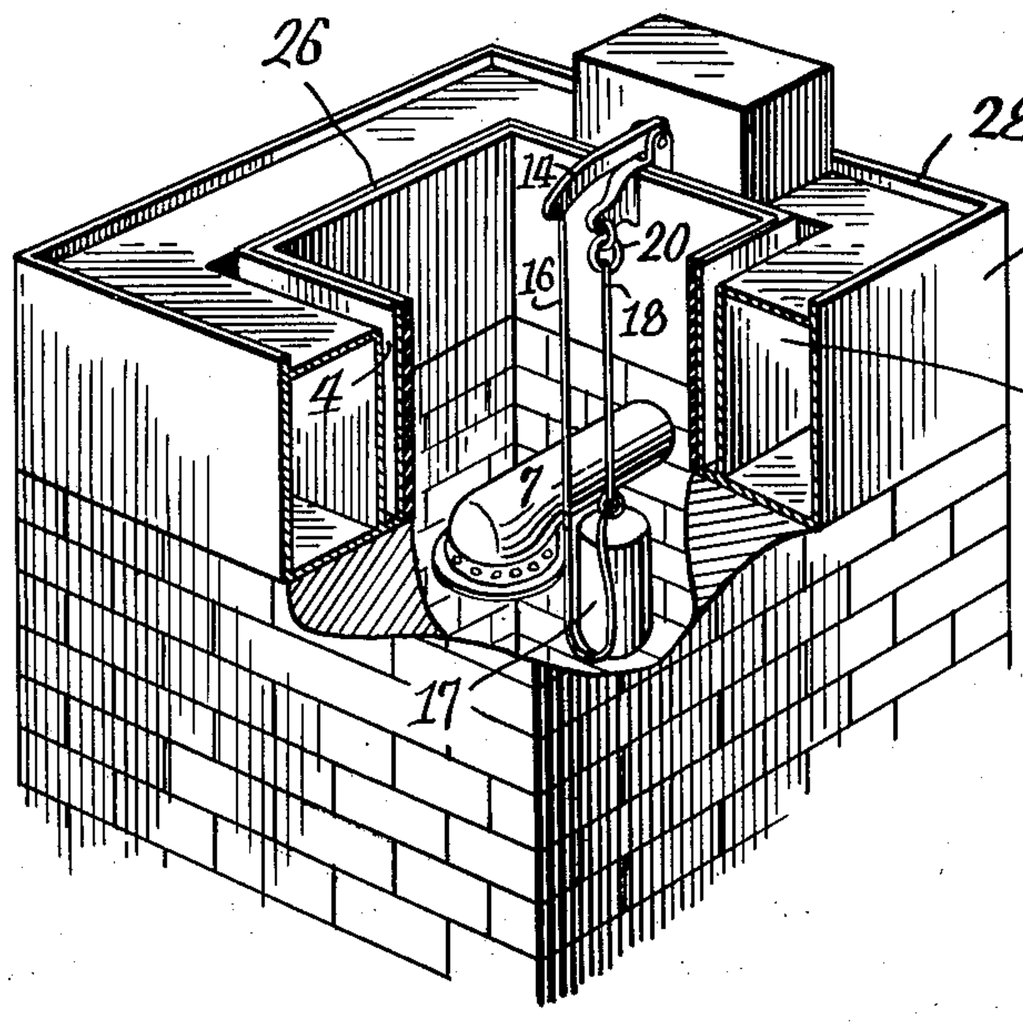

Fig. 2

Inventor
Nelson Dubé
By Allen Dennis
Attorney

Patented Aug. 20, 1935 2,011,803

UNITED STATES PATENT OFFICE

2,011,803

FIRE EXTINGUISHER

Nelson Dubé, La Tuque, Quebec, Canada

Application September 21, 1934, Serial No. 744,878

2 Claims. (Cl. 169—2)

The present invention pertains to a novel fire extinguisher intended principally for use on chimney fires. The device is automatic in operation, being discharged on the attainment of a certain high temperature in the chimney. At such times, a fusible link is melted, thereby releasing a weight to open a valve and empty a tank of liquid into the chimney. At the same time, a bottle containing another fire extinguishing substance is emptied into the tank. This substance may for example be an acid solution while the tank may contain a carbonate solution, whereby there is formed carbon dioxide gas.

Further, the invention also embodies an electric alarm which is operated at the same time by the weight-controlled mechanism. The invention also includes certain matters of construction for preventing vaporization of the tank contents by the chimney heat or the sun. More particularly, this construction is such as to permit rain water to collect at the exposed sides of the tank to form a heat insulation.

The invention is fully disclosed by way of example in the following description and in the accompanying drawing in which

Figure 1 is a detail vertical section of a chimney, showing the device of the invention in elevation;

Figure 2 is a perspective view, partly broken away, of a chimney equipped according to the invention; and

Figure 3 is a perspective view of the electric alarm switch.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

In Figures 1 and 2 is shown a brick chimney 1 on the top of which is mounted and secured a tank 2 which is rectangular or otherwise shaped like the chimney. The tank is somewhat narrower than the wall of the chimney, so that another wall 3 may be erected at the inner edge of the chimney to form a space 4 with the inner wall 5 of the tank as shown in Figures 1 and 2. The tank is preferably made of sheet metal, and the wall 3 consists of asbestos or other suitable heat insulating material.

In the bottom of the tank is an opening 6 from which extends a discharge pipe 7 leading to the interior of the chimney. The pipe discharges around a bell 8 held by a collar 9 having a circular series of apertures 10. The opening 6 is normally closed by a valve 11 having a stem 12 extending upwardly through the top of the tank 2. The tank is filled with water or other suitable liquid through a pipe 13.

To the exposed upper end of the stem 12 is pivoted a lever 14 fulcrumed on a bracket 15 and extending into the chimney. A cord 16 hangs from the free end of the lever and carries a weight 17 which would ordinarily tend to lift the valve 11 to its open position. The weight however is held in elevated or idle position by another cord 18 connected to a bracket 19 through the medium of a lead or other fusible link 20.

To the bottom of the tank 2 is fixed a bracket 21 on which is pivoted a seat or cup 22. The latter receives an upright bottle 23 which widens slightly in the upward direction. A finger 24 fixed to the valve stem 12 engages the side wall of the bottle.

In the operation of the device as thus far described, the link 20 is broken and the weight 17 released on the occurrence of a given temperature in the chimney. The weight then acts on the lever 14 to lift the valve 11 and permit the contents of the tank to flow through pipe 7 into the chimney. At the same time, the finger 24 rides upward on the flared wall of the container 23, thereby swinging the container and its seat 22 on the pivot 25, so that the container 23 is discharged into the tank. The container 23 holds a substance adapted to react with the contents of the tank to form an effective fire extinguisher. For example, the contents of container 23 may be an acid while the tank may contain a carbonate solution, so that carbon dioxide gas is liberated. The bell shaped head 8 at the discharge end of pipe 7 causes the liquid to be projected outwardly through the holes 10 to cover substantially the entire cross sectional area of the chimney.

As shown in Figures 1 and 2, the insulating wall 3 projects slightly above the top of the tank as indicated by the numeral 26. Similarly, the outer vertical wall 27 of the tank also projects upwardly above the top as indicated by the numeral 28. In this way there is formed a trough which communicates with the space 4, and both the trough and the space become normally filled with rain water. The inner wall of the tank is thereby insulated from the heat of the chimney, and the top of the tank from the heat of the sun, to prevent evaporation, excessive heating and vapor pressure of the contents of the tank.

On the top of the tank and near the exposed end of the valve stem 12 is mounted a bracket 29 to which is pivoted a switch arm 30 in the form

of a bell crank lever. One end of the lever is adapted to be lifted by an arm 31 carried by the stem 12 when the latter raises, to throw the other end of lever 30 into a fixed switch contact 32. The bracket 29 and contact 32 are connected by conductors 33 and 34 respectively to the terminals of a bell or other alarm 35, with a battery 36 or other source of current interposed in one of the conductors. It will be evident that this circuit is closed at the switch when the valve stem 12 rises on melting of the fusible link 20 as above set forth, so that the alarm is sounded.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claims.

What I claim is:—

1. A fire extinguisher comprising, in combination with a chimney, a tank mounted thereon and adapted to contain a fluid, a receptacle contained in said tank, a weight connected to said receptacle and positioned to tip the receptacle and empty it into said tank, a support for holding said weight in an inoperative position and including a fusible member within said chimney, a valve adapted to place said tank in communication with the interior of said chimney, said weight being also adapted to open said valve, and a wall built adjacent to the inner side of said tank and spaced therefrom, said space being open to the atmosphere at the top for receiving rain water.

2. A fire extinguisher comprising, in combination with a chimney, a tank mounted thereon and adapted to contain a fluid, a receptacle contained in said tank, a weight connected to said receptacle and positioned to tip the receptacle and empty it into said tank, a support for holding said weight in an inoperative position and including a fusible member within said chimney, a valve adapted to place said tank in communication with the interior of said chimney, said weight being also adapted to open said valve, a wall built adjacent to the inner side of said tank and spaced therefrom, said space being open to the atmosphere at the top for receiving rain water, and a vertical extension from the outer wall of said tank beyond the top of the tank, the first named wall also extending vertically beyond the top of the tank to form a trough in communication with said space.

NELSON DUBÉ.