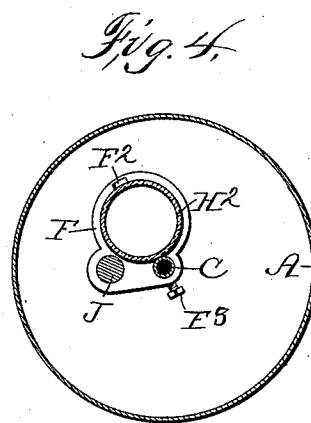
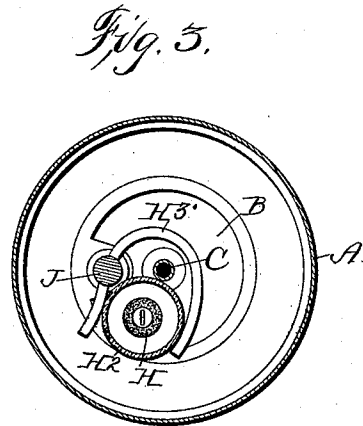
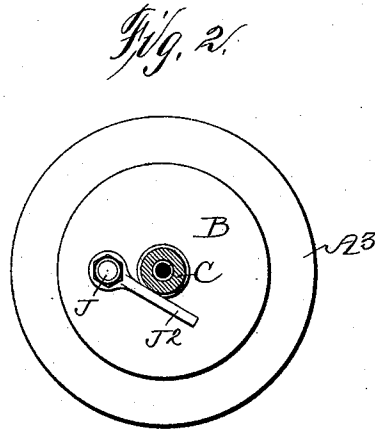
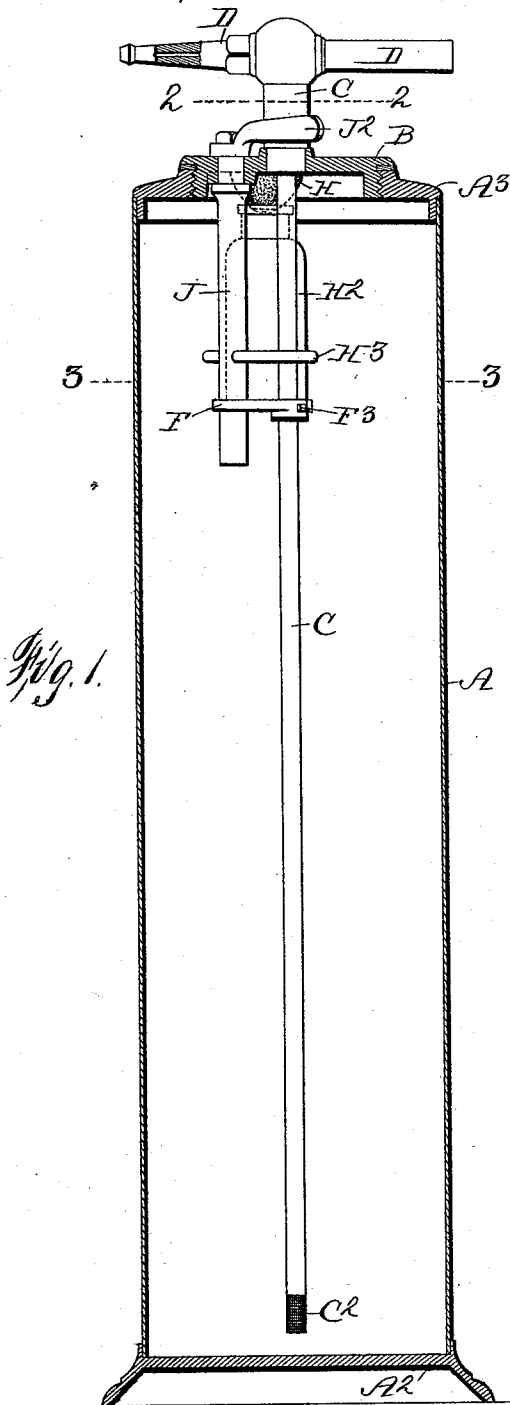


(No Model.)

H. L. FISHER & J. McKERCHER.
FIRE EXTINGUISHER.

No. 578,324.

Patented Mar. 9, 1897.



Witnesses: }
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UNITED STATES PATENT OFFICE.

HARVEY L. FISHER AND JESS MCKERCHER, OF DES MOINES, IOWA.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 578,324, dated March 9, 1897.

Application filed April 15, 1896. Serial No. 587,740. (No model.)

To all whom it may concern:

Be it known that we, HARVEY L. FISHER and JESS MCKERCHER, citizens of the United States of America, residing at Des Moines, in the county of Polk and State of Iowa, have invented a Fire-Extinguisher, of which the following is a specification.

The objects of our invention are to provide a device of simple, cheap, strong, and durable construction in which an alkali and an acid are held in solution separated from each other without regard to the position in which the device is placed; to provide means whereby the solutions may be easily commingled and slowly but thoroughly mixed in such a manner that the gases resultant from the combination will continue to be generated for a comparatively great length of time to force the liquid through an opening in the vessel in a strong but steady stream; to provide a fire-extinguisher of the class described in which the handle serves as a discharge-nozzle, thus dispensing with the necessity of a hose and nozzle, and to prevent accidental explosions of the tank in the event of an inadvertent mixture of the acid and alkali by providing for an automatic discharge of the contents as soon as gas-pressure is applied internally.

Our invention consists in certain details in the construction, arrangement, and combination of the various parts of the device, as hereinafter set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a vertical sectional view of the complete device; Fig. 2, a horizontal section through the line of section 2 2 of Fig. 1; Fig. 3, a like section through the dotted line 3 3 of Fig. 1, looking upwardly; Fig. 4, a similar view on the line 3 3, looking downwardly.

Referring to the accompanying drawings, the reference-symbol A is used to indicate the containing-tank, formed of a sheet-metal tube having a flanged base A² secured thereto. At the top a cover A³ is secured, which cover is provided with a screw-threaded central opening to admit a threaded cap B. A tube C extends through this cap and is secured thereto. Its lower end is provided with a screen C² and extends to a point near the

bottom of the tank, and its upper end projects a slight distance above the top of the cap. At said upper end is a cross-head D, designed to serve as a handle for carrying the extinguisher and also as a nozzle through which the contents of the tanks are discharged. It is provided in one of its branches with a central bore communicating with the top of the tube C. By being firmly fixed to the cap also it provides a convenient means for screwing or unscrewing the cap. It is now obvious that upon the generation of a quantity of gas in the tank the contents thereof will be forcibly ejected through the central tube and nozzle.

F indicates a shelf having an upward projection F² at its outer end and slidingly mounted on the tube C within the tank. A set-screw F³ seated therein provides means whereby it may be secured in any position upon the tube.

Attached to the under surface of the cap B is a hemispherical stopper H, preferably made of lead, and H² indicates a large-necked bottle designed to contain an acid solution and to rest upon the shelf with the stopper firmly seated in its top. The bottle is also held in place against lateral movement in the shelf by means of an approximately U-shaped rod H³, supported in a horizontal plane near the bottom of the bottle upon a stem J, which stem is rotatably mounted in the cap and has a lever J² fixed to its top, one side of which normally rests against the tube C, so that the lever is capable of movement in one direction only, and when so moved one end of the U-shaped rod will engage the side of the bottle and force it from the shelf.

The bottle may be refilled and put in place again by first lowering the shelf F, then positioning the bottle, and then raising the shelf to engage the bottom of the bottle and hold it firmly against the stopper, and then tightening the set-screw to hold the shelf in position.

In practical use the tank is filled with an alkali solution and the bottle with an acid, both of the kind ordinarily used in fire-extinguishers. When the bottle is in place, as shown, it is obvious that its contents are securely held, no matter in what position the tank is placed. However, if the bottle should become accidentally displaced, it is obvious

that no explosion could follow, because the opening through the central tube is constantly open. Furthermore, the contents of the tank cannot escape except when under 5 pressure, for the reason that if inverted the fluid will not reach so far as the end of the tube.

When it is desired to use the extinguisher, the lever J² is turned and the bottle forced 10 from its support and dropped into the tank. It being full of liquid, it will of course rapidly sink and thus slowly discharge its contents into the alkali solution, resulting in the generation of a gas that will force the contents 15 through the tube and nozzle. The mixture of the chemicals is thorough, for the reason that the acid in the bottle is distributed during the whole period of its descent in the tank, and it is also continuous, as some of the 20 contents usually remain and are slowly commingled after the bottle has reached the bottom of the tank. The bottle may be used an indefinite number of times, and the extinguisher may be refilled by persons unskilled 25 in the art.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent of the United States, is—

1. In a fire-extinguisher, the combination 30 of a tank, a screw-cap in the top of the tank, a tube passed through the cap, a shelf on the tube, a bottle designed to rest on the shelf, a stopper secured to a stationary support and designed to enter the mouth of the bottle and 35 a shaft passed through the cap having an arm on its end to engage the bottle, whereby the bottle may be moved laterally to fall from the shelf, for the purposes stated.

2. A fire-extinguisher comprising a suitable tank, a tube leading from its interior, a shelf 40 adjustably fitted to the tube, a hemispherical stopper fixed to the tank above the shelf a bottle designed to rest on the shelf with said stopper in its top a stem rotatably mounted in the tank, a device on one end thereof to 45 engage the bottle and a lever on its other end for the purposes stated.

3. A fire-extinguisher comprising a suitable tank, a tube leading from its interior, a shelf 50 adjustably fitted to the tube, a hemispherical stopper fixed to the tank above the shelf, a bottle designed to rest on the shelf with said stopper in its top, a stem rotatably mounted in the tank an approximately U-shaped rod 55 on its lower end to support the bottle against lateral movement and when the stem is rotated force the bottle from the shelf, and a lever on the upper end of the stem for the purposes stated.

4. A fire-extinguisher comprising a suitable 60 tank, a cap screwed into its top, a tube fixed in the cap to extend to a point near the bottom of the tank, a cross-head on top of the tube, having a passage in one branch communicating with the tube, a shelf adjustably 65 fitted to the tube below the cap, a stem rotatably mounted in the cap, a lever at its top and an approximately U-shaped rod at its other end, a hemispherical stopper fixed to the cap and a suitable bottle, substantially as and 70 for the purposes stated.

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Witnesses:

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