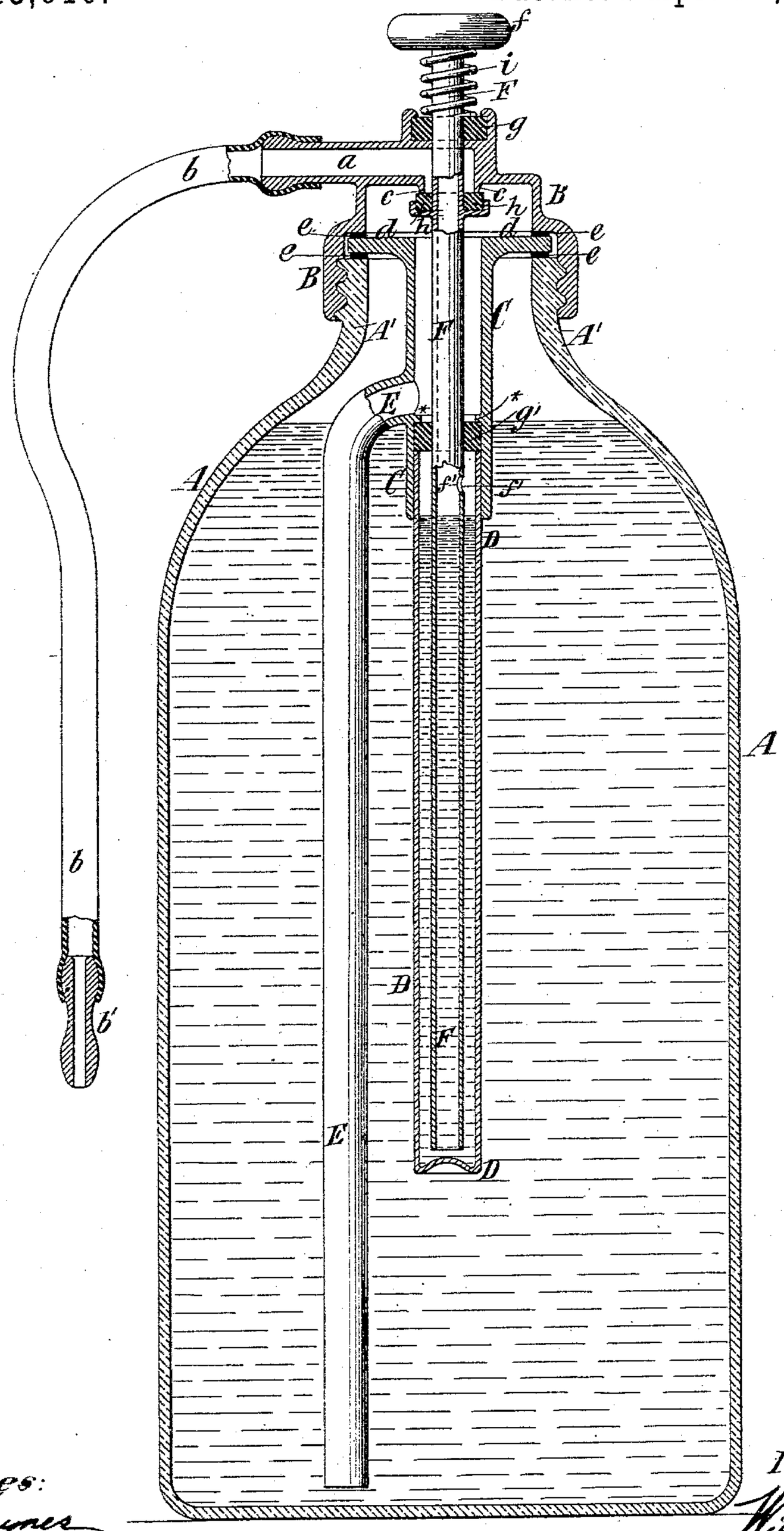
(No Model.)

W. GEE.

CHEMICAL FIRE EXTINGUISHER.

No. 315,610. Patented Apr. 14, 1885.



Witnesses:
Fred'k Haynes
Emil Schwartz

Inventor:
Williams Gee
Leyhis Alleyn
Brown & Hall

UNITED STATES PATENT OFFICE.

WILLIAM GEE, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO A. ELLWOOD HENDRICK, OF SAME PLACE.

CHEMICAL FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 315,610, dated April 14, 1885.

Application filed October 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GEE, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Portable Fire-Extinguishers, of which the following is a specification.

My invention relates to fire-extinguishers which are supplied with a chemical charge, and are set in operation by allowing a charge of acid, which is contained in a separate receptacle within the extinguisher, to escape from its receptacle and mingle with the charge of liquid in the extinguisher.

The principal object of my invention is to provide an extinguisher of small size which shall contain a charge of one or two quarts, or thereabout, which may be made and sold at a low price, and which shall be neat in appearance, so that it will not appear obtrusive in any room of a dwelling-house, where it will be ready for instant use in case of fire.

The extinguisher which I now consider most desirable consists of a flask or glass vessel in shape like an ordinary glass bottle with a rather wide mouth, a cap of metal screwed or otherwise secured to the neck of the flask or bottle, and from which extends a discharge-hose, an acid-receptacle consisting of a tube closed at the bottom by a stopper or by hermetically sealing the lower end, if of glass, and extending downward within the flask, a discharge-pipe extending from the bottom of the flask or bottle upward to the upper part of the acid-receptacle, or the tube or neck from which said receptacle depends, and a hollow rod or tube extending downward through the cap to the bottom of the acid-receptacle, and capable of being forced down by a slight blow or pressure to break or drive out the bottom of the acid-receptacle, and so release the acid therein. The hollow breaking rod or tube is open at the bottom, and at a point above the acid is provided with a side aperture, and in the tube or neck from which the acid-receptacle depends is a plug or packing-ring through which the breaking rod or tube works. When the breaking rod or tube is forced down to break or drive out the bottom of the acid-receptacle the side aperture in the rod or tube provides for equalizing the pressure above and below the acid, and thus allowing it to drop out from its receptacle. I also provide a valve upon the breaking rod or tube which is adapted to close by an upward movement of the rod or tube after breaking against the discharge-aperture in the cap, and to confine the liquid and allow the pressure to accumulate in the flask or bottle. When the liquid is to be discharged, the breaking rod or tube is pressed down slightly to open the valve, the rod or tube and valve being automatically raised to close the valve whenever the pressure is removed from the rod or tube.

The invention consists in novel features of construction and combinations of parts embodied in the extinguisher above described, and pointed out in the claims; but the invention is not restricted to an extinguisher of that particular description.

The accompanying drawing is a central vertical section of an extinguisher of the kind above described, and embodying my invention.

A designates a flask or receiver, which may be made of glass or other material, and is of a size to hold a small quantity of liquid, say, from one to three quarts, or even more, if desired.

As here shown, the flask or receiver is flat-bottomed, so that it will be stable wherever placed, and the neck A′ is externally screw-threaded to receive a cap, B, which may be thereby securely attached.

As here shown, the cap is constructed with an outlet tube or passage, *a*, to which is permanently attached a short hose or flexible discharge-pipe, *b*, provided at the end with a nozzle, *b′*. The cap B has a central aperture, *c*, in its under side, which forms a downwardly-presented valve-seat, as hereinafter described.

C designates a downwardly-presented tube or neck, here shown as having at the top an outwardly-extending flange, *d*, which is clamped between the end of the neck A′ and the cap B, suitable packing-washers, *e e*, being employed to make a tight joint.

D designates the acid-receptacle, which depends from the throat or neck C, and consists of a tube, which may be made of glass. The lower end of this tubular acid-receptacle may be closed by a bottom of glass, or by a stop-

per inserted tightly thereinto, and its upper end may be cemented or otherwise secured in the throat or neck C.

E designates a discharge-pipe extending from a point near the bottom of the flask or receiver A upward to the throat or neck C.

F designates a breaking-rod, which extends through a hole in the cap B, and thence downward through the throat or neck C and acid-receptacle D nearly to the bottom thereof. This rod has at the top a head, *f*, which may be formed by fusing and molding the end of the rod, if of glass, and the said rod is hollow or consists of a tube at the lower portion, the tube being open at the lower end, and having a side aperture, *f'*, at a point which will be above or as high as the level of acid in the receptacle D.

The opening in the cap B through which the breaking rod or tube F passes may be packed by a rubber washer, *g*, through which the rod or tube works, or by any other suitable means, and in the throat or neck C, at a point below the end of the discharge-pipe E, and above the side aperture, *f'*, is a washer or guide, *g'*, of packing material, through which the rod or tube works. This washer or guide may be held in place between a shoulder, *, in the throat or neck C and the end of the acid-receptacle D, which is inserted thereinto.

Upon the breaking rod or tube F is a valve, *h*, which may consist of a glass shell or collar formed on the rod or tube and a rubber or other packing ring or washer held thereon, and by an upward movement of the rod or tube the said valve is made to close against the valve-seat *c*.

Below the head *f* of the breaking rod or tube F is a spring, *i*, which holds the valve *h* closed against its seat. When the rod or tube is forced down, the valve *h* is opened and the spring compressed; but when pressure is removed from said rod or tube it is automatically raised and the valve closed by the action of the spring *i*.

As before stated, I may make the flask or receiver A, the acid-receptacle D, and the rod or tube F of glass, but the discharge-pipe E and other parts of the apparatus may be made of lead or other metal, preferably a non-corrosive metal.

The method of operating the extinguisher is as follows: The desired quantity of chemical liquid (which may be soda and water) is introduced into the flask or receiver A, and the acid-receptacle having been filled with acid the cap B is screwed tightly into place, and the extinguisher is placed where it will be instantly accessible in case of fire.

When the extinguisher is to be put in operation, the rod or tube F is forced down by a blow of the hand, thereby breaking out the glass bottom of the acid-receptacle D, or forcing the stopper therefrom and releasing the acid charge. The rod or tube F is at once returned by the spring *i*, thereby closing the valve *h* and allowing the pressure to accumulate. As the lower end of the hollow rod or tube F is open, and by reason of the side aperture, *f'*, the pressure is equalized above and below the acid, and the latter will discharge itself freely from the tubular receptacle D. When the pressure is sufficient in the flask or receiver, and the place of the fire is reached, the rod or tube F is pressed slightly downward to open the valve *h*, and the liquid is thereupon discharged from the hose-nozzle *b'* in whatever direction the latter is turned.

By my invention I provide an extinguisher which may be carried as easily as a bottle of equal size, and which may be kept where it will be instantly accessible in case of fire.

The extinguisher provides for discharging the extinguishing agent behind furniture and into any out-of-the-way corners, where fires are difficult to get at and hard to extinguish when allowed to acquire any headway.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a portable fire-extinguisher, the combination, with a flask or receiver and a cap for closing the top thereof, of a tubular acid-receptacle, D, sealed at the lower end and depending from the top of the flask or receiver, and a hollow breaking rod or tube, F, open at the lower end, extending downward through the cap and into the acid-receptacle, and provided at a point above the acid in the receptacle with a side aperture, whereby the pressure above and below the acid will be equalized, substantially as herein described.

2. In a portable fire-extinguisher, the combination, with a flask or receiver and a cap for closing the upper end thereof, of the throat or neck C, extending downward within the flask or receiver, an acid-receptacle sealed at the lower end and depending from said throat or neck, a breaking rod or tube extending downward through the cap and throat or neck, and the discharge-pipe extending from the bottom of the flask or receiver to the throat or neck C, substantially as herein described.

3. The combination of the flask or receiver A, the cap B, the throat or neck C, having the flange *d*, whereby it is held between the flask or receiver and cap, the acid-receptacle D, sealed at the lower end, the hollow breaking rod or tube F, having the side aperture, *f'*, the packing-washer and guide *g'* above said side aperture, and the discharge-pipe E, extending to the throat or neck C, above the washer and guide *g'*, all substantially as herein described.

4. The combination, with a flask or receiver and a cap therefor containing a discharge-passage, of an acid-receptacle depending within the flask and sealed at the bottom, a breaking rod or tube extending downwardly through the cap and into the acid-receptacle, a discharge-pipe, and a valve on said rod or tube adapted to close by an upward movement thereof to cut off communication between said discharge-pipe and the passage in the cap, substantially as herein described.

5. The combination of the flask or receiver A, the cap B, having a discharge-passage, *a*, and a downwardly-presented valve-seat, *c*, the breaking rod or tube F and its valve *h*, the throat or neck C, the acid-receptacle D, sealed at the bottom, and the discharge-pipe E, extending to the throat or neck C, all substantially as herein described.

6. The combination of the flask or receiver A, the cap B, having a discharge-passage, *a*, and a downwardly-presented valve-seat, *c*, the breaking rod or tube F, with its raising-spring *i* and valve *h*, the throat or neck C and its depending acid-receptacle D, sealed at the bottom, and the discharge-pipe E, extending to the throat or neck C, substantially as herein described.

WILLIAM GEE.

Witnesses:
FREDK. HAYNES,
EMIL SCHWARTZ.