

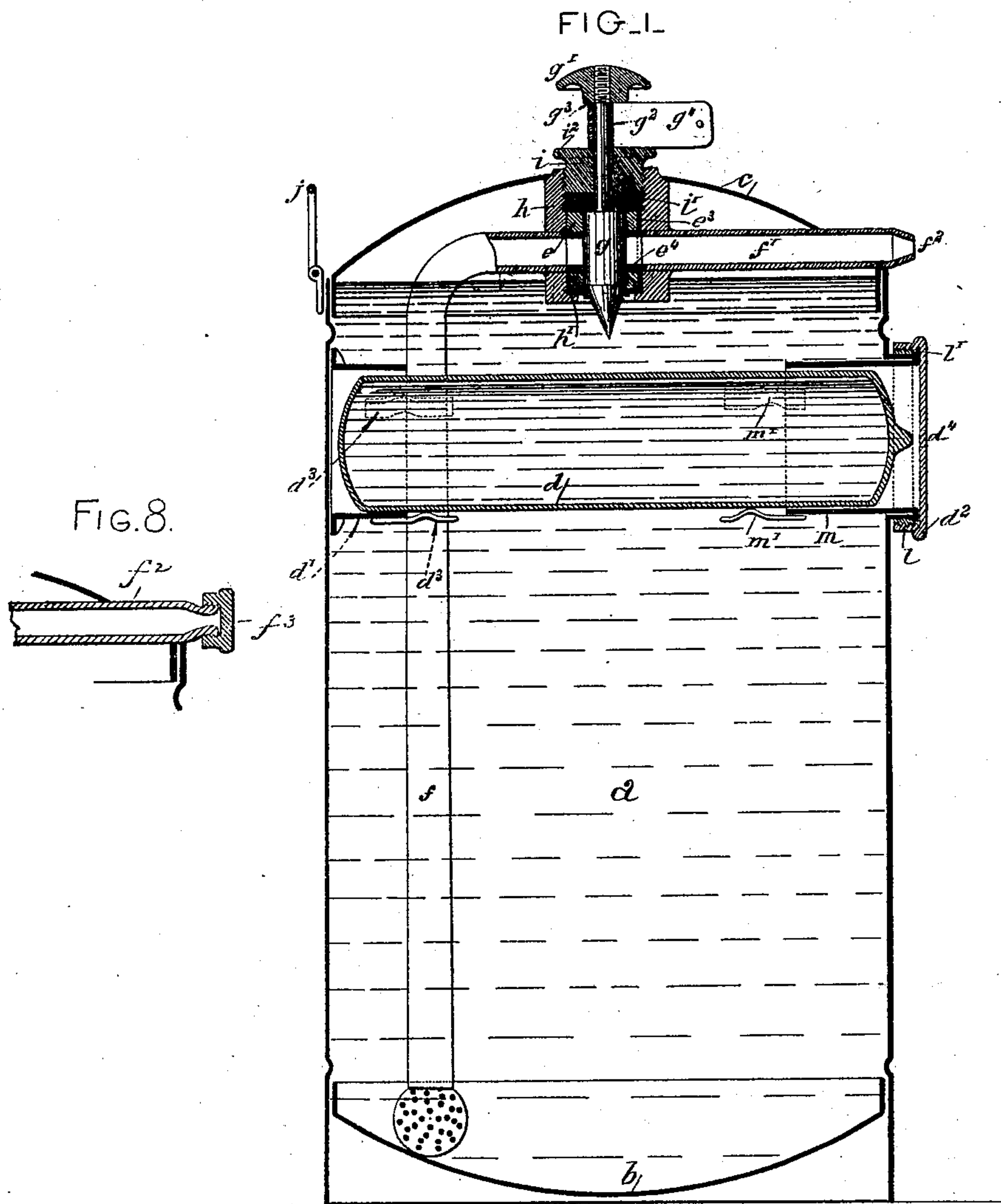
(No Model.)

2 Sheets—Sheet 1.

A. L. E. LECHARTIER.
FIRE EXTINGUISHING APPARATUS.

No. 518,258.

Patented Apr. 17, 1894.



Antoine Louis Eugène Lechartier *Investor*

Witnesses:

Georges Laurent
Eugène Watter

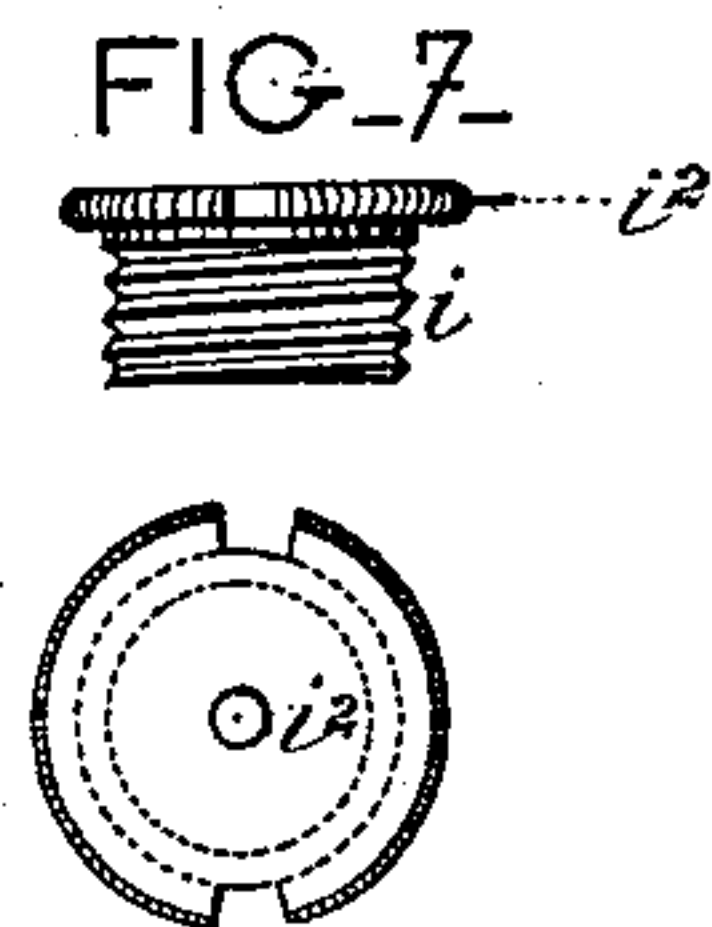
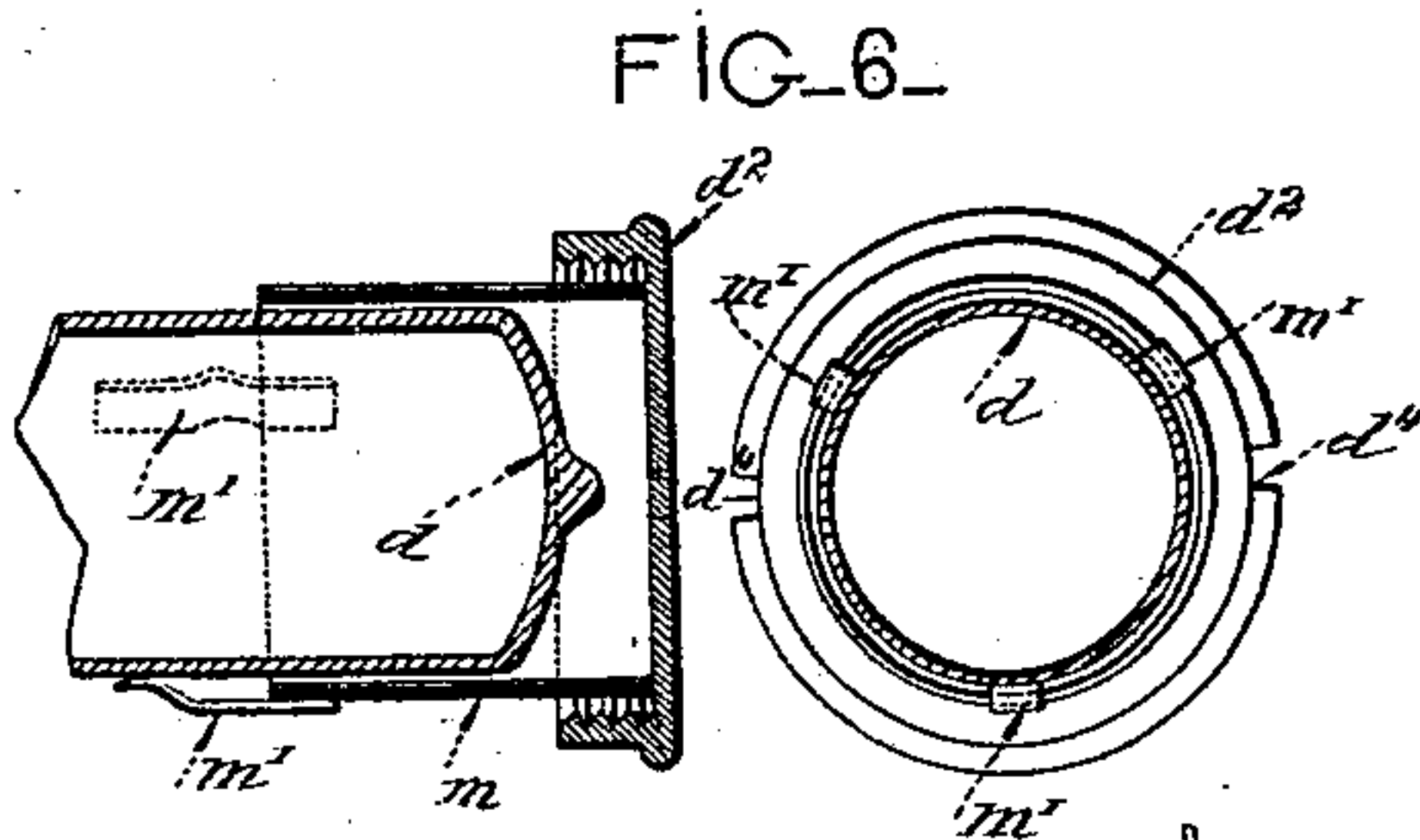
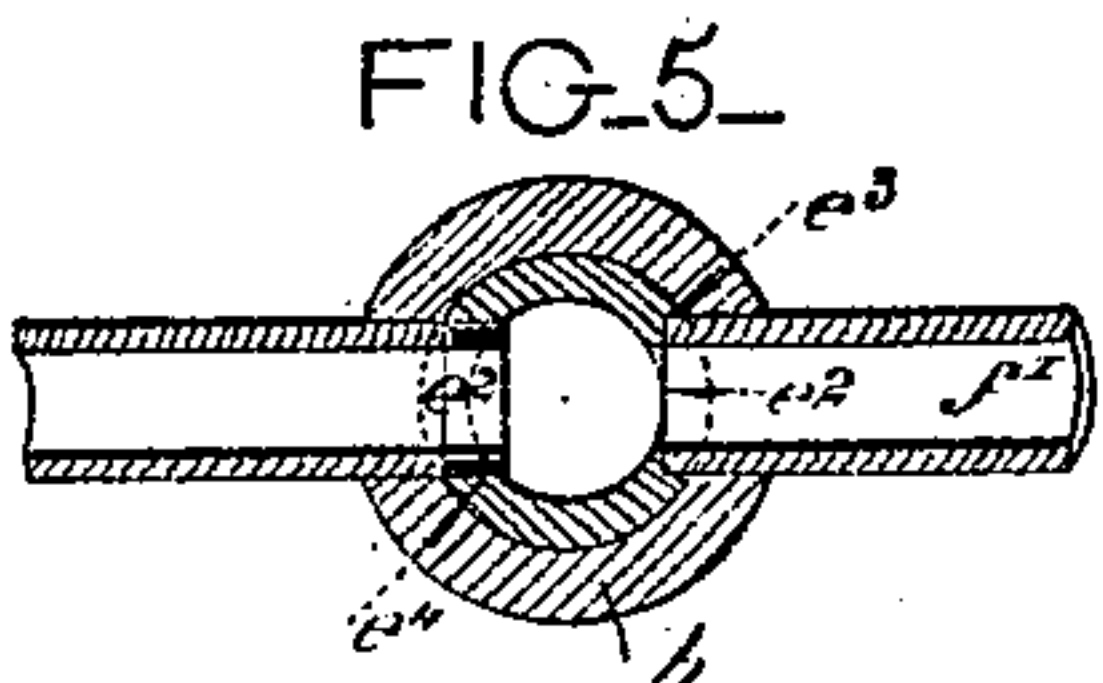
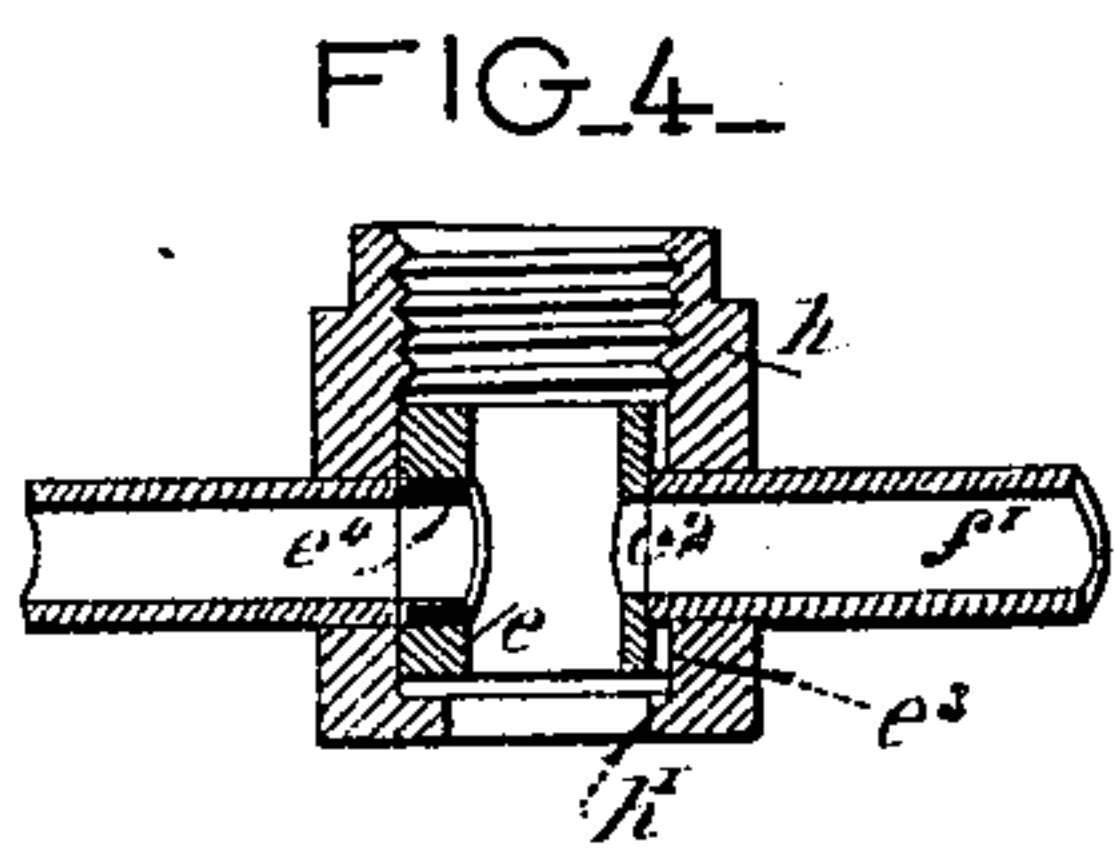
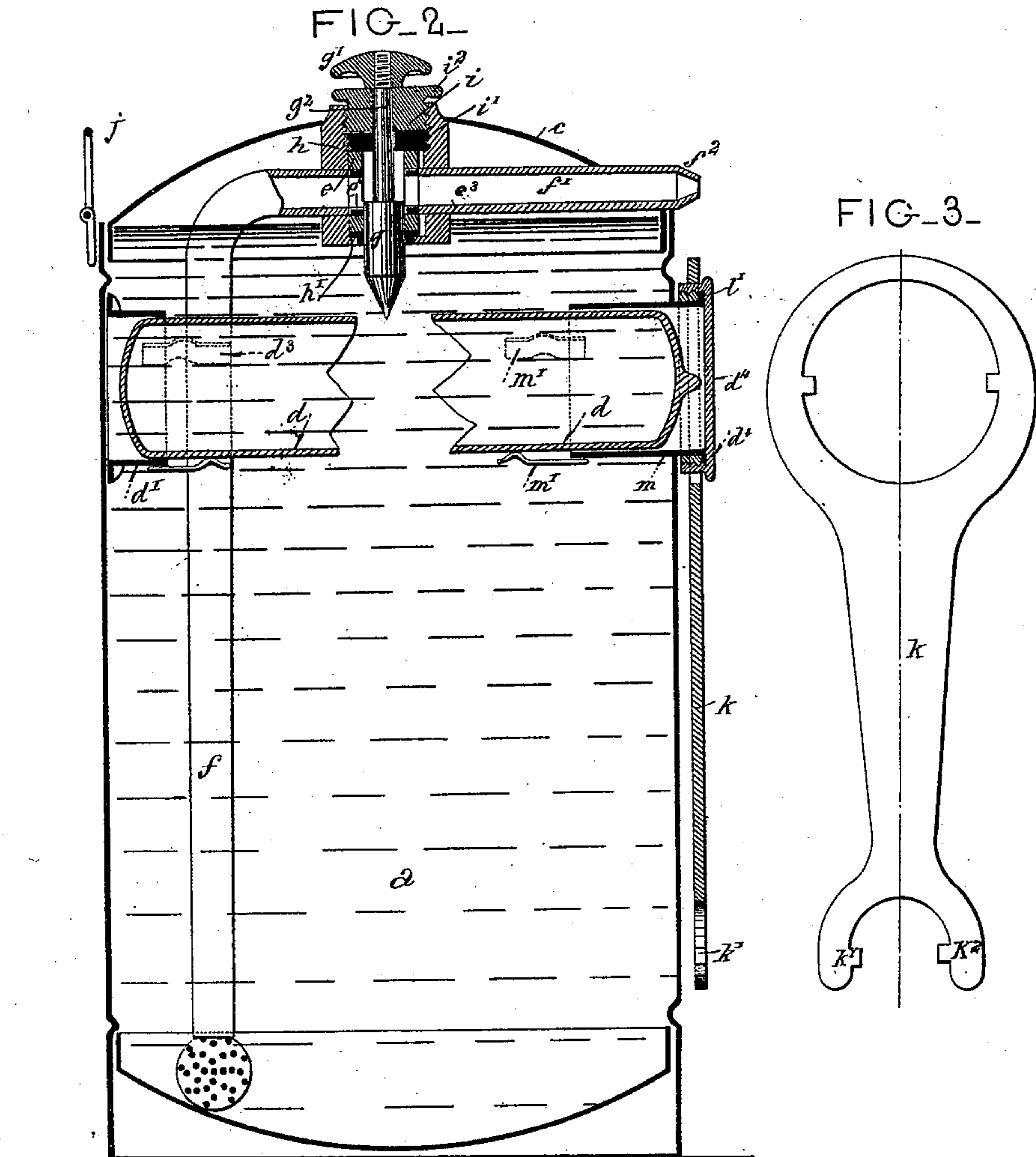
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Witnesses:
George H. H. H.
Eugene W. H.

Inventor
Antoine Louis Eugene Lechartier

UNITED STATES PATENT OFFICE.

ANTOINE LOUIS EUGÈNE LECHARTIER, OF PARIS, FRANCE.

FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 518,258, dated April 17, 1894.

Application filed December 20, 1893. Serial No. 494,226. (No model.) Patented in France May 31, 1893, No. 230,493.

To all whom it may concern:

Be it known that I, ANTOINE LOUIS EUGÈNE LECHARTIER, insurance agent, of 97 Rue de la Pompe, Paris, in the Republic of France, have invented a new and Improved Fire-Extinguishing Apparatus, (for which I have obtained Letters Patent of France for fifteen years, No. 230,493, dated May 31, 1893;) and I do hereby declare that the following is a full and exact description thereof, reference being made to the accompanying drawings.

My invention relates to a fire extinguishing apparatus, which is of extremely simple construction, the mechanical operation of which is sure, and which is easily charged. And indeed, my apparatus only comprises a vessel of cylindrical or other suitable form to hold water; a glass reservoir for containing acid; a tube extending down to the bottom of the said vessel and passing through a stuffing box fixed at the top and in the axis of the aforesaid vessel, the said tube extending outside the vessel; and, lastly, a kind of piston working in the stuffing box and adapted to close the passage in the tube, and capable when forced inward of breaking the glass acid reservoir placed beneath it, and at the same time opening the tube, in such a way that the apparatus is instantly put under pressure and in action; by drawing the piston outward, the communication in the tube between the branch extending to the bottom of the vessel and the atmosphere is stopped, and the operation of the apparatus ceases.

The acid reservoir is so arranged that it allows of the removal of the fragments of glass resulting from a previous operation and the subsequent insertion of a fresh charge. The apparatus will thus last indefinitely, it being only necessary to be provided with the necessary salt and reservoirs containing reserve charges of acid, which take up but little room, in order to attain the absolute certainty of being able to combat successfully against any outbreak of fire, and even against large fires.

The accompanying drawings show a specimen of my new fire extinguishing apparatus.

Figure 1 is a vertical sectional view of the apparatus when charged. Fig. 2 is also a vertical sectional view of the apparatus when in

operation. Fig. 3 is a front view of the key, which is represented partly in section and side view in Fig. 2. Fig. 4 is a detail view of the stuffing box, with the tube which passes through it. Fig. 5 is a horizontal section through the axis of the tube in Fig. 4. Fig. 6 is a detail view of the stopper of the main vessel and which supports one end of the acid reservoir. Fig. 7 is a detail view of the stopper of the stuffing box. Fig. 8 is a sectional detail hereinafter described.

The apparatus comprises the vessel *a*, which is preferably of cylindrical form but not necessarily so. This vessel is hermetically closed at the top and bottom by the parts *b* and *c*. In the vessel *a* is fixed the tube *f f'*—composed of a part *f* extending down to the bottom *b*, and of a horizontal part *f'*, both the said parts extending to a bronze piece *h* soldered to the top *c*. The said piece *h* constitutes a double stuffing box comprising a movable socket *e* put into the box and supported by a leather washer placed on its bottom *h'*, of a stopper *i* screwed into the box and pressing the leather washer *i'* onto the socket *e*. In the stuffing *e* is fitted the piston *g*, the rod *g²* of which passes through the washer *i'* and the stopper *i²*; beyond the said stopper *i²*, the rod receives the pusher-button or buffer *g'*. The socket *e*, which is pierced by openings *e² e²* corresponding to the tubes *f f'*, has a vertical recess *e³* on one side, into which projects, one end of the tube *f'* for the purpose of adjustment of said socket in relation to the tubes *f f'*. In the opening *e²*, which is a continuation of the tube *f*, I have fitted a leather washer *e⁴*, against which the said piston *g* comes and presses, so as to form on this side an absolutely water-tight joint.

The piston *g* is pointed at the lower end, and this pointed part, when the apparatus is charged (Fig. 1), comes very near the acid-reservoir *d*.

The acid reservoir *d* is made of glass; it is placed longitudinally in the vessel *a*, one of its ends being supported in a socket *d'* soldered to the inner wall of the box, the other end being in a cylindrical socket *m* soldered to the bottom of a stopper *d²*. The stopper *d²* is screwed into a stuffing *l* soldered to the vessel *a*. A leather washer *l'*, put in between

the edge of the stuffing l and the lower end of the stopper d^2 , secures a perfectly water-tight joint.

To prevent the glass reservoir d from moving, the socket m , of the stopper d^2 , is provided with spring clutches m' , which embrace the end of the said reservoir and prevent it from moving in any direction. On the other hand, the opposite socket d' carries clutches d^3 for the purpose of serving as a simple guide to the end of the reservoir when it is required to place the reservoir in the said socket d' .

The screwing and unscrewing of the stopper d^2 are operated by means of an annular-headed key k , the internal diameter of which is slightly larger than the external diameter of the stopper d^2 ; two recesses d^6 are cut diametrically out of the milled edge of the stopper, and two teeth are reserved in the interior of the annular head of the key, so that the said teeth fit into the said recesses d^6 of the stopper, thus making the said stopper and the said key integral with each other. The screwing or unscrewing can then be easily done. When the key is not in use, it can be suspended against the side of the vessel a , as shown by Fig. 2. The other extremity of the key k ends in two branches k' k^2 , which are designed for screwing and unscrewing the stopper i , of the stuffing box, the said stopper being provided with corresponding recesses, as shown by Fig. 7.

Operation: If we assume that the reservoir, filled with chlorhydric acid, for example, is put in its place, that the vessel a is filled with water and salts, such as bi-carbonate of soda or chloride of sodium, and that the double stuffing box is placed, with the piston g at its highest point, the apparatus will be ready for work (see Fig. 1). In this state the fire extinguishing apparatus may be shipped or kept without danger of its either running or being broken. In order to prevent accident, the piston is held in its highest position by means of a piece g^4 put in and fixed between the top of the stopper i^2 and the under side g^3 of the pusher button or buffer g' the end f^2 of the tube f' may also be covered with a suitable cap f^3 , as shown in Fig. 8 which will prevent accidental running.

To use the fire extinguishing apparatus, the piece g^4 is removed as well as the cap from the tube f' ; a blow is given on the buffer g' , whereby the acid reservoir d is broken, when immediately the chemical combination takes place, and internal pressure is carried to its highest point. Instantaneously, the extinguishing gush of water appears at the fitting f^2 , and all that has to be done is to di-

rect it where the fire is hottest to obtain prompt and efficient results.

After the operation, the broken glass is easily removed through the opening made by unscrewing the stopper d^2 .

The fire extinguishing apparatus can be placed anywhere and even suspended by a hook by means of the ring j soldered to the top of the vessel a .

I claim—

1. A fire extinguishing apparatus comprising a vessel of any suitable form and dimensions containing water and salts; an acid reservoir, made of glass, placed, for instance, horizontally within the said vessel and supported, on the one hand, by a seat or immovable socket, and, on the other hand, by the clutch socket of a stopper, which screws and makes a water-tight joint in the opening reserved at the top of the vessel for allowing the acid reservoir to be put in its place or replaced by another, a tube extending to the bottom of the vessel and also to the upper part of the same, where it passes through a double stuffing box, and issues from the vessel and forms a fitting, and, lastly, a double stuffing box, through which passes the hereinbefore mentioned tube, provided with a piston, which makes a water-tight joint in the said tube, and which, under the effect of an external blow, opens the communication in the tube, after its striking end has broken the acid reservoir and thereby put the apparatus in operation.

2. In a fire extinguishing apparatus the combination of a suitable vessel containing the extinguishing fluid having double stuffing box a tube passing therethrough and extending to the bottom of said vessel which tube is adapted to conduct the fire extinguishing liquid, said stuffing box also being provided with a piston, which forms a valve for said tube and is adapted to close the same as long as the apparatus shall remain charged, and adapted to open communication in the tube at the moment when the apparatus is to operate; an acid containing reservoir placed underneath said piston and arranged so as to be touched and broken by said piston when the latter reaches the lowest point in its downward stroke, said piston being adapted to be moved by percussion or otherwise, from its highest to its lowest position to break said acid reservoir, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ANTOINE LOUIS EUGÈNE LECHARTIER.

Witnesses:

GEORGES LAURENT,
EUGÈNE WATTILL.