

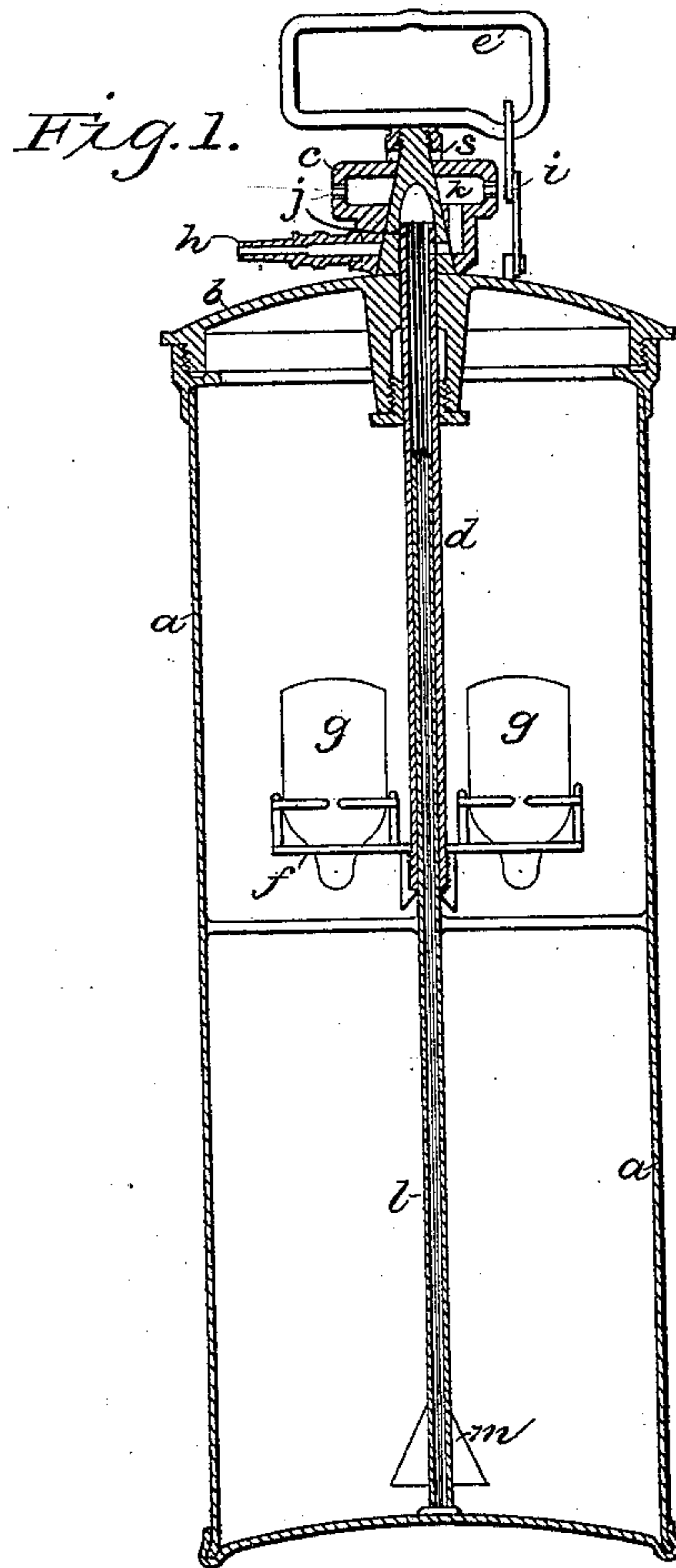
(No Model.)

2 Sheets—Sheet 1.

S. G. OTIS & C. F. PEIRCE.
FIRE EXTINGUISHER.

No. 429,053.

Patented May 27 1890.



WITNESSES

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INVENTOR
Samuel G. Otis.
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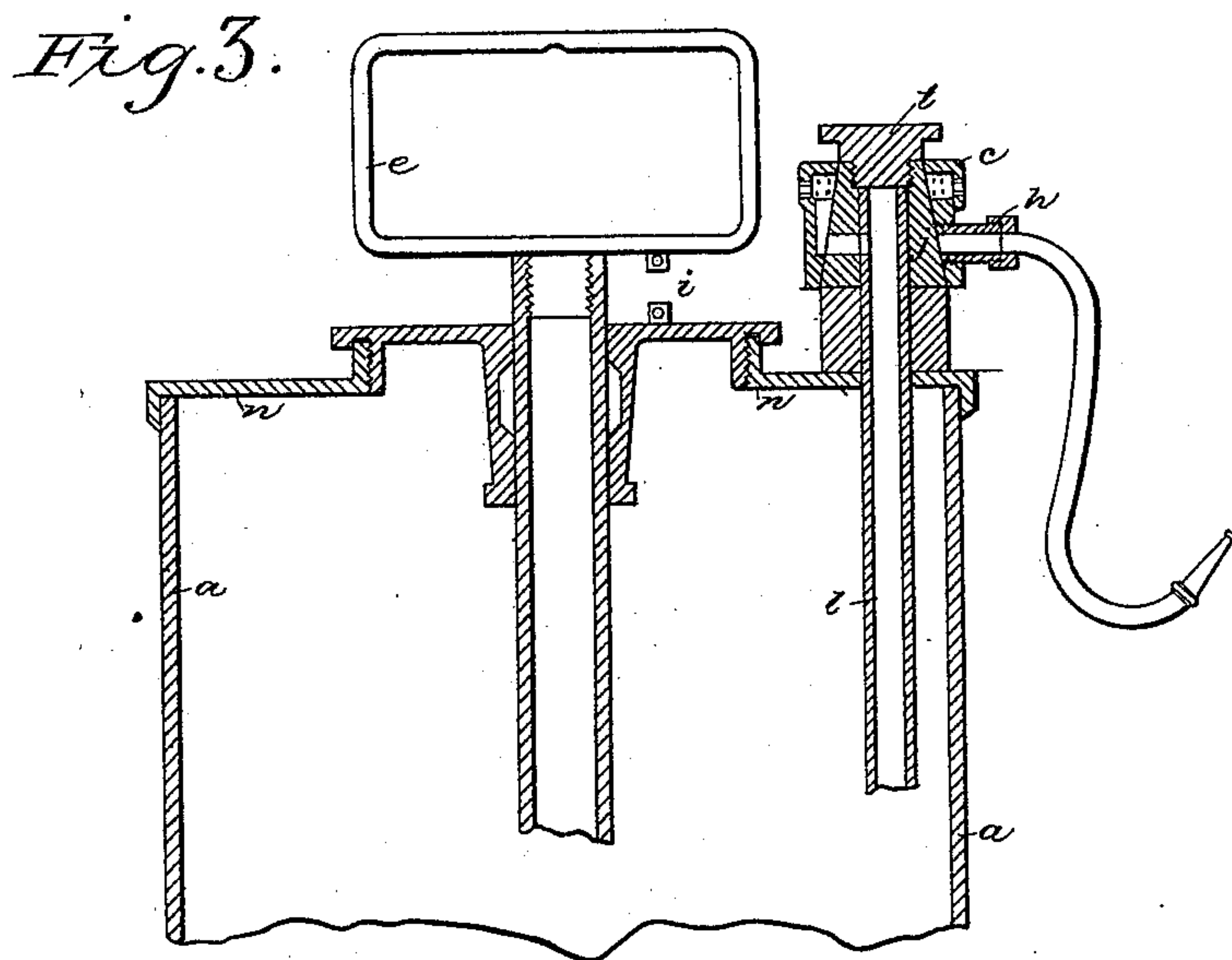
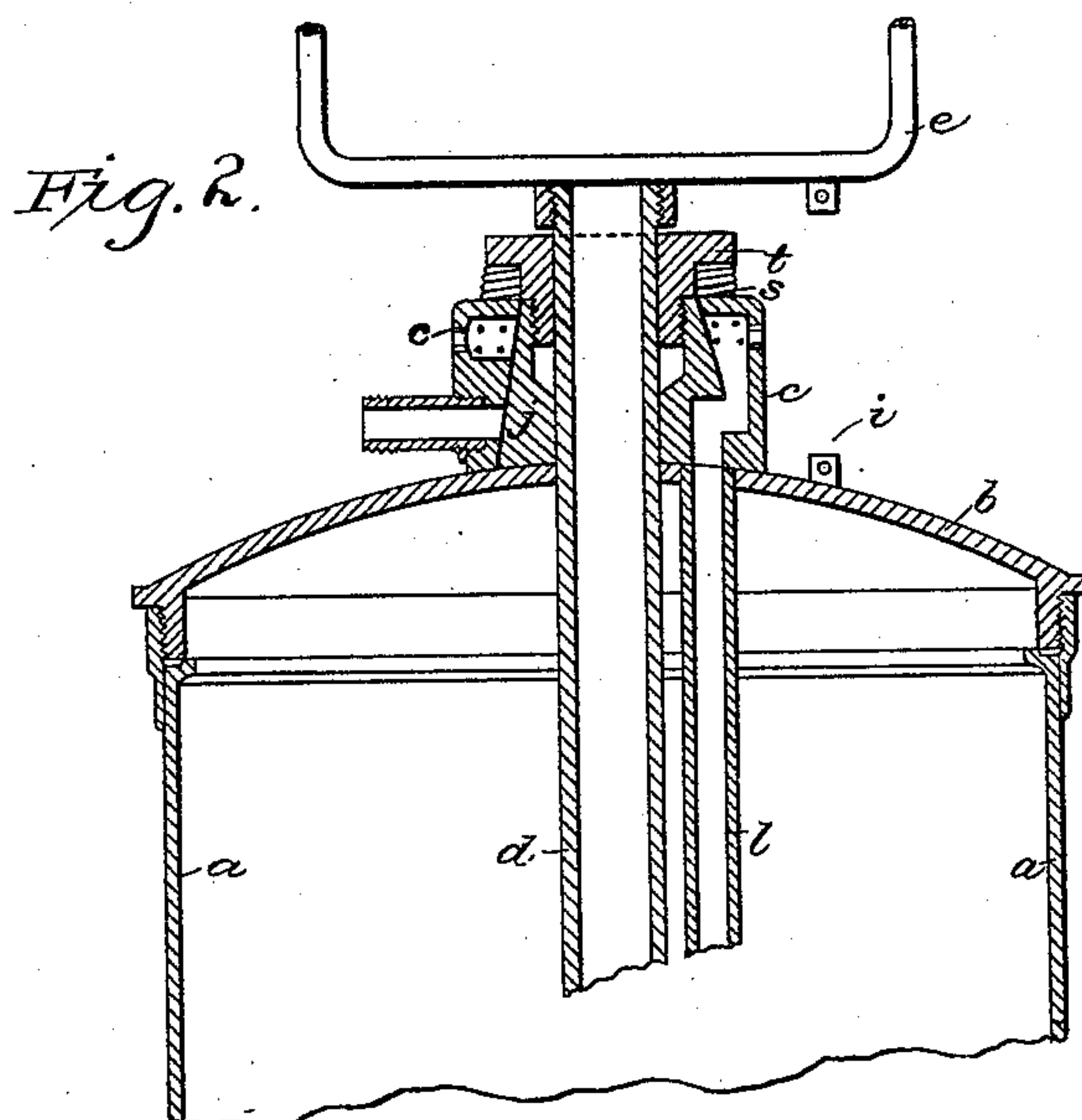
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Wm. Mousser.
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UNITED STATES PATENT OFFICE.

SAMUEL G. OTIS, OF SPRINGFIELD, AND CHARLES F. PEIRCE, OF LYNN,
MASSACHUSETTS; SAID PEIRCE ASSIGNOR TO SAID OTIS.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 429,053, dated May 27, 1890.

Application filed March 4, 1887. Serial No. 229,724. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL G. OTIS, of Springfield, in the county of Hampden and State of Massachusetts, and CHARLES F. PEIRCE, of Lynn, in the county of Essex and State aforesaid, both citizens of the United States of America, have jointly invented new and useful Improvements in Fire-Extinguishers, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to the construction of the kind of fire-extinguisher known as "chemical" fire-extinguisher.

The object of our invention is to provide simple and effective means for holding and releasing the chemical agents used for extinguishers; and it consists in the novel construction of parts and their combination, as herein-
after described and specifically claimed.

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is a sectional elevation of our preferred form of construction, and Figs. 2 and 3 illustrate modifications of the same.

In detail, *a* indicates a can or shell; *b*, a cover for the same; *c*, a valve mechanism; *d*, a rod or tube passing through the same; *e*, a handle by which the device is carried or suspended; *f*, a bottle-holding device; *g*, bottles containing chemicals; *h*, an outlet-nozzle, and *i* a fusible latch.

The construction will be readily understood on reference to the drawings.

The case or can *a* may be of any convenient form, a metal shell of the shape shown being preferred.

The handle *e* is secured to the rod or tube *d*, which rod passes downward through the cover *b* and is provided with bottle-holding means *f*. The rod *d* is adapted to slide through the cover and such other mechanism as may be located at the point of its passage through the cover, suitable packing-rings being provided to render the same tight.

A locking means, as a hook *i*, is provided, which engages the handle or rod and retains the same in its normal position, and upon being released by the disengaging of the retaining means the rod and handle will move upward; or if the device be suspended by the

handle the same result will be accomplished by the moving of the can downward until the bottles are brought in violent contact with the cover or with projections designed to come in contact with the bottles, and they be thus broken and their contents discharged into the can. At the same time the bottle-holding apparatus operates in its upward movement to agitate the fluids in the can, this being a very desirable and beneficial element in the most successful operation of this class of apparatus.

This construction of breaking means, it will be seen, may be applied with various kinds of apparatus for allowing the escape of the gas, and that other mechanical structures may be devised to utilize the principle invented by us of utilizing the weight of the device directly to cause the breaking of the bottles without departing from our invention, and we do not wish to be understood as limiting ourselves to the exact construction shown.

We do not, however, wish to be understood as claiming, broadly, to cover devices in which a weight or spring is released by a change of position of the can, which weight or spring operates to break the bottles, nor to cover devices in which the weight of the can causes an interior receptacle to tip or a valve to open, allowing the contents of two compartments to intermix, although our special mechanism may be used to bring such apparatus into operation. Our preferred construction is such that the weight of the can and contents operates directly to cause the breaking of the bottles.

The outlet-valve construction preferred by us is that shown in Fig. 1 of the drawings, the rod or tube *d* having an opening extending to the valve. The valve mechanism preferred consists of a shell *c*, fitting a core *j*, the shell *c* having one outlet which opens into a tube or nozzle *h* and another outlet or chamber *k*, this portion of the shell *c* being perforated with small openings to produce a spray when the fluid or gases escape therefrom, causing the same to be distributed over a large extent and in all directions. There being but one opening from the tube *d* into the valve, it will be seen that the position of the shell *c* upon the core *j* will determine the di-

rection of the outlet. For instance, if the shell occupy the position shown in the drawings in Fig. 1, the contents will pass into the chamber *k* and be discharged through the small perforations in the form of spray. If now the shell *c* be turned so the opening from the pipe *d* is opposite the opening in the nozzle *h*, then the contents will be discharged in a stream through the nozzle or through a pipe which may be connected therewith, and when the shell is turned so the opening in the tube *d* is not opposite either of the openings in the shell, then the contents will be confined and cannot escape until the shell be turned to the desired position, as above pointed out. As it is desirable that the contents be discharged from the bottom, we provide a pipe *l*, which telescopes with the tube *d*, as shown, its lower end being provided with a strainer *m*, the place of connection between the two pipes being of course provided with a suitable packing-ring.

The catch *i* is made in two parts united by soft solder, and the application of heat in any manner of sufficient degree will melt the solder and cause the parts to separate, and the whole device being suspended by the handle *e* it will be seen that when the latch is separated the weight of the can and contents will cause it to descend and the device be set in operation, as before described. When the device is suspended for automatic operation, the valve should be set to open the spray-outlet. The breaking of the bottles and discharge of their contents into the liquid in the can will cause chemical action in the well-known manner and force the gas or spray onward through the discharge-outlet. When the device is to be used and operated by hand, it is simply necessary to unhook the catch *i* from the handle, leaving it free to be controlled by the hand of the operator.

The construction may be varied, if desired, by extending the tube *l* directly to the cover, and there connecting it with the valve in the manner shown in Fig. 3. In this event the part *d* may be a solid rod and the opening from the valve be extended downward through the top and the pipe *l* carried to the opening, as shown in this figure, instead of opening at the side, as first described.

It will be seen, also, that the valve may be located at one side of the center and near the outside of the device, as shown in Fig. 4. In

this case the cover may be made to extend over only a part of the shell, the valve being attached to a ring *n*, permanently secured to the shell at the top, the method of operation in each case being the same.

It will be seen that the bottles may be secured at the top of the can and a breaking device be attached to the rod or tube *d*, and that when the handle and can are separated the bottles will be broken by the same operation as first described.

A spiral spring *s* is interposed between the cap *t* and shell *c* to maintain a uniform pressure of the cap upon its core *j*, and thus keep the same tight at all times.

It will be seen that by this construction we may use any of the suitable chemical compounds, as well as compressed air or other means of expelling the gas or liquid, the weight of the can and contents operating directly to cause the breaking of the bottles or intermingling of the chemicals after the fusing of the latch or its disengagement by the operator.

Having therefore described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a fire-extinguishing apparatus, the combination of a vessel *a*, provided with a cover, a sliding discharge-tube projected through the cover into the vessel, bottle-holding devices secured to the sliding tube in the vessel, and a latch to hold the sliding tube and vessel in normal relations, substantially as described.

2. In a fire-extinguishing apparatus, the combination of a vessel *a*, provided with a cover, a sliding telescoping discharge-tube projected through the cover into the vessel, a latch to hold the tube down in the vessel, and brackets on the tube within the vessel to hold the extinguishing-agent vessels, substantially as described.

3. The combination of the vessel *a*, provided with a cover, a valve-controlled discharge-nozzle in the cover, and a sliding rod provided with bottle-holding device projected through the cover into the vessel, substantially as described.

SAMUEL G. OTIS.
CHAS. F. PEIRCE.

In presence of—

SAMUEL M. BUBIER,
NATHAN M. HAWKES.