

(No Model.)

2 Sheets—Sheet 1.

C. W. CARYL.
FIRE EXTINGUISHER.

No. 300,948.

Patented June 24, 1884.

FIG. 1.

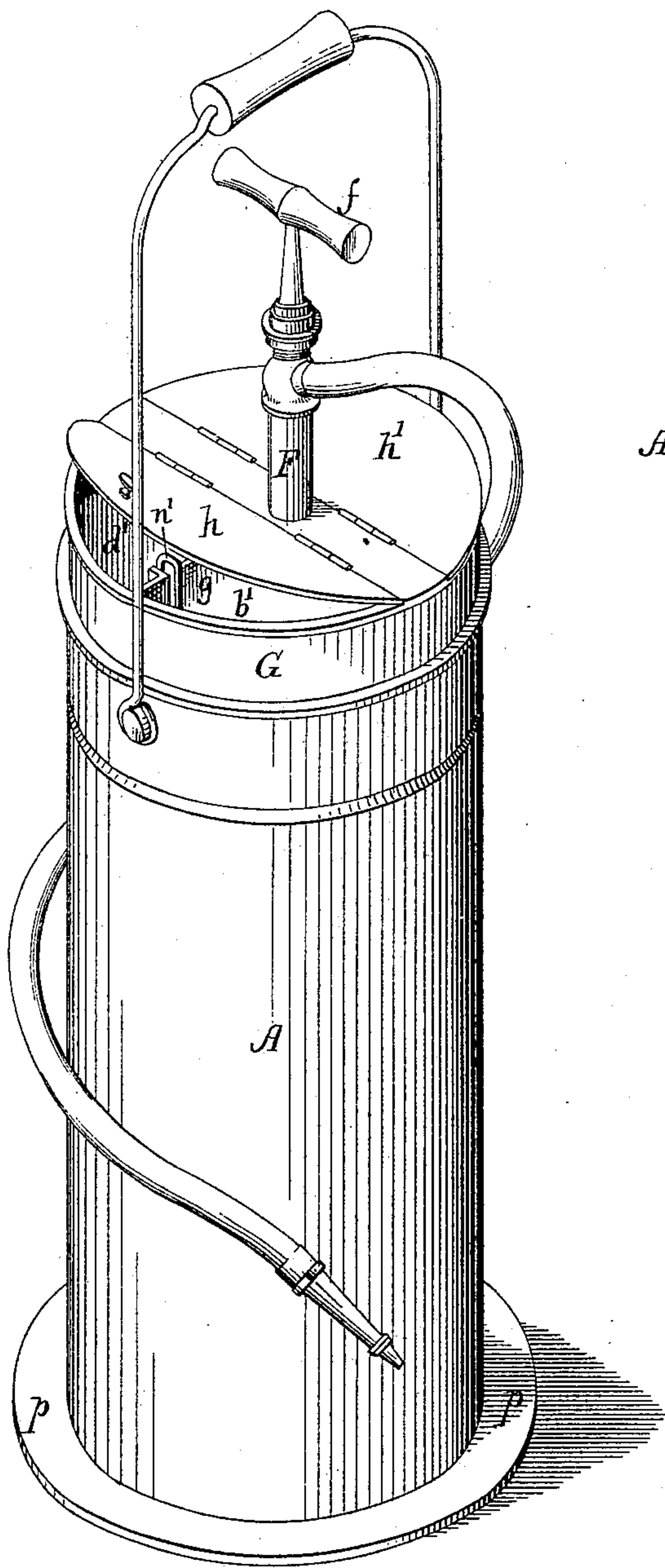


FIG. 5.

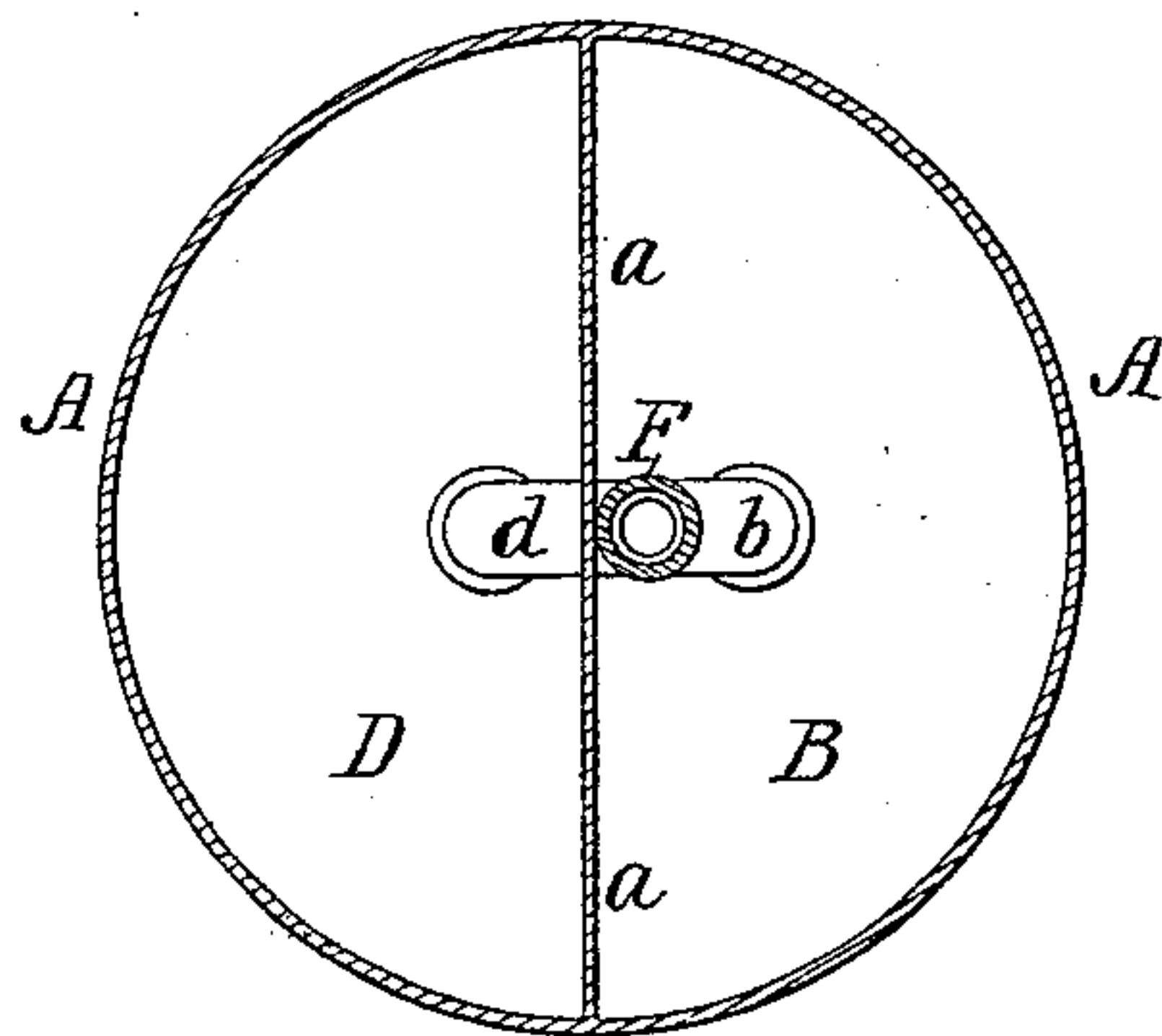
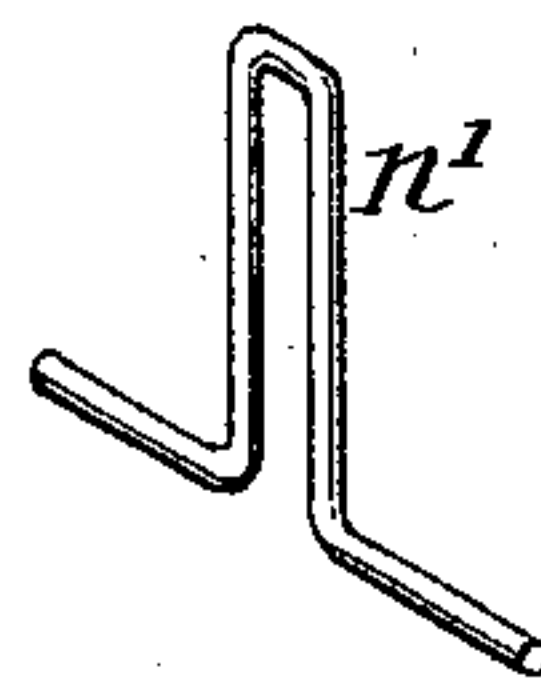


FIG. 6.



WITNESSES:

David Williams
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INVENTOR:

Charles W. Caryl.
by his Attorneys.
Howson & Sons

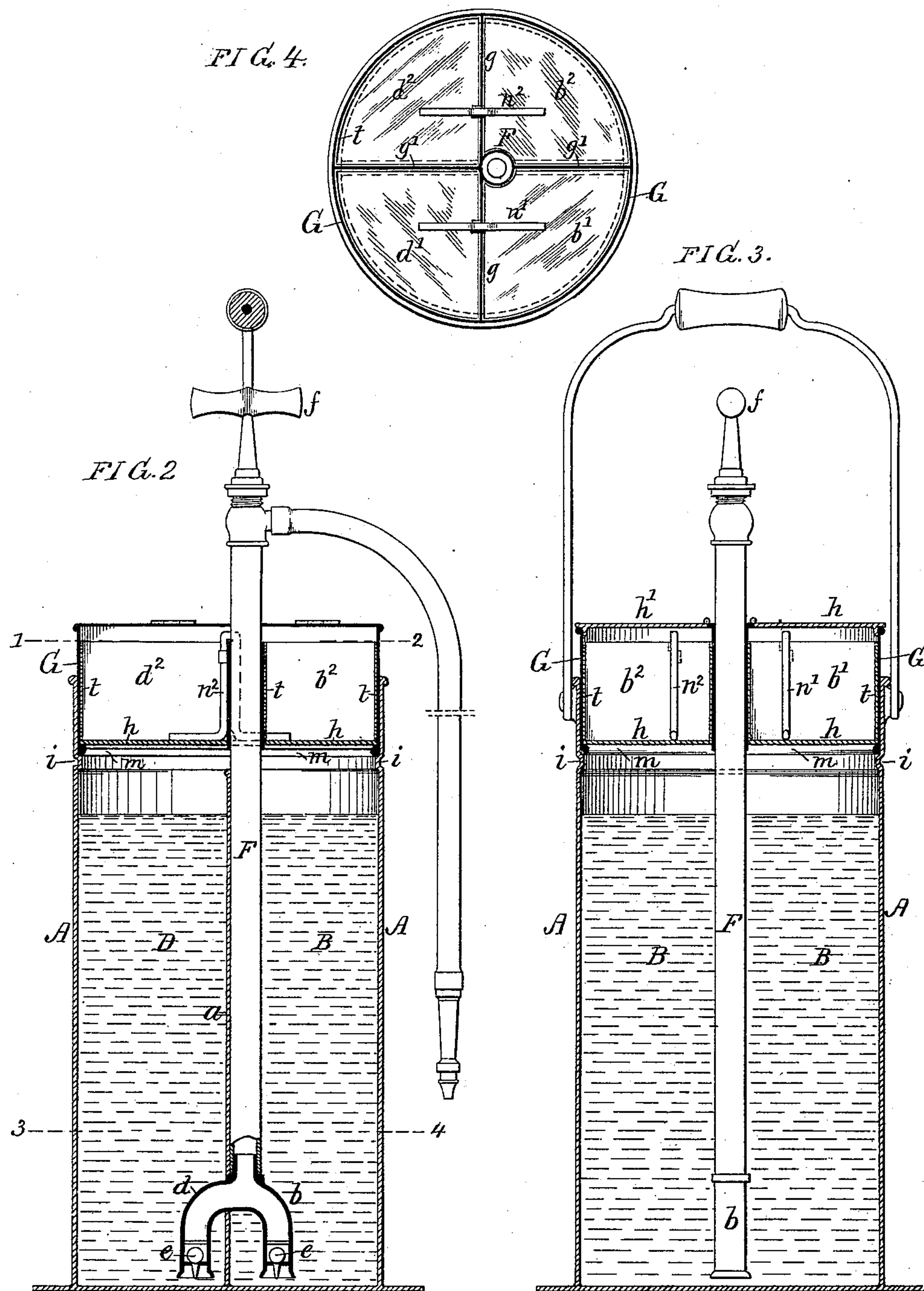
(No Model.)

2 Sheets—Sheet 2.

C. W. CARYL.
FIRE EXTINGUISHER.

No. 300,948.

Patented June 24, 1884.



WITNESSES:

David Williams
John G. Parker

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UNITED STATES PATENT OFFICE.

CHARLES W. CARYL, OF PHILADELPHIA, PENNSYLVANIA.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 300,948, dated June 24, 1884.

Application filed July 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. CARYL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Fire-Extinguishers, of which the following is a specification.

My invention relates to certain improvements in that class of fire-extinguishers in which the acid and alkali solutions are mixed by means of a pump, and then projected onto the fire, the objects of my improvements being to simplify and cheapen the construction of the extinguisher, to prevent the charging of the extinguisher by meddlesome persons, to insure the charging at the proper time, and to dispense with the two pumps usually employed.

In the accompanying drawings, Figure 1, Sheet 1, is a perspective view of my improved fire-extinguisher; Figs. 2 and 3, Sheet 2, vertical sections of the same on a larger scale; Fig. 4, a sectional plan on the line 1 2, Fig. 2; Fig. 5, Sheet 1, a sectional plan on the line 3 4, Fig. 2; and Fig. 6, a detached view of the break-bar.

The main receptacle of the extinguisher consists of a cylindrical vessel, A, the interior of which is divided by a central transverse partition, *a*, into two chambers, B and D. A single-barreled pump, F, is secured to the partition *a*, this pump having at the lower end two branches, *b* and *d*, the former communicating with the chamber B, and the branch *d* with the chamber D, and both branches having valves *e*. The pump is provided with the usual valved piston, which has at the upper end an operating-handle, *f*, and at the upper end of the pump-barrel is a discharge branch furnished with a short length of hose, as usual.

The partition *a* does not extend to the top of the vessel A, and to the latter, above the partition, is snugly fitted a cover, G, the vessel A being preferably constructed with an internal shoulder, *i*, on which said cover rests.

The interior of the cover G is divided by right-angled partitions *g g'* into four compartments, *b' b² d' d²*, the compartments *b' b²* being above the chamber B, and the compartments *d' d²* above the chamber D, and the cover has two hinged lids, *h h'*, the former covering the compartments *b' d'*, and the lid *h'* covering the

compartments *b² d²*. The bottom of each compartment consists of a plate of glass, *h*, resting on a shoulder, *m*, and on the partition *g* are hung two forked bars, *n' n²*, the lower bent ends of the bar *n'* resting on the glass bottoms of the compartments *b' d'*, and the ends of the bar *n²* on the bottoms of the compartments *b² d²*, and each bar extending slightly above the top of the partition *g*.

The chambers B and D are filled with water, and the compartments *b' b²* and *d' d²* have deposited in them, in dry-powdered form, the charges with which the water is to be impregnated, the charges in the compartments *b' b²* being an alkali, preferably bicarbonate of soda, and those in the compartments *d' d²* being of an acid character, preferably as described hereinafter. The extinguisher being charged in this way is prepared for action as follows: One of the lids *h h'*—say the lid *h*—is raised, and a sharp blow is struck upon the projecting upper end of the bar *n'*, thus causing the descent of the bar and the fracture of the glass bottoms of the compartments *b' d'*, the charges in which are discharged, respectively, into the chambers B and D. The pump being then operated draws its supply from the two chambers, and the acid and alkali solutions are mixed in the barrel of the pump, thus generating carbonic-acid gas, so that a mixed stream of gas and water is projected by the pump upon the fire. Should the solutions be exhausted before the fire is extinguished, fresh supplies of water are poured into the chambers B and D through the compartments *b' d'*, and the charges in the compartments *b² d²* are then discharged into the chambers by striking the bar *n²*, these operations requiring but a very short time.

The vessel A has at the bottom a projecting flange, *p*, which forms a foot-rest for the person operating the pump, thus imparting the desired stability to the structure.

Twin tank-extinguishers as usually constructed have two connected cylindrical tanks and a double-barreled pump, whereas I use but a single vessel with transverse partition—a much more economical method of construction—and I further reduce the expense of construction by using but a single-barreled pump, with single piston and piston-rod.

The means for emptying the charges into the chambers B and D are not exposed; hence there is very little risk of their being tampered with by meddlesome persons; and for still further security the lids *h h'* may be furnished with suitable locks or a piece of glass may be inserted in the cover over the bar, to be broken in case of emergency.

As the top G fits snugly to the vessel A, and the glass bottoms form a tight joint, the access of water to the dry charges in the compartments *b' b² d' d²* is rendered impossible, and the gradual evaporation of said water is prevented, thus overcoming an objection to apparatus in which the water-tanks are not so tightly closed.

The compartments *b' b²* and *d' d²* in the cover G are lined with glass or lead *t*, in order to prevent the dry charges from sticking to the sides of the compartments and becoming caked therein.

I am aware that a single-barreled pump with two suction branches is not new in itself; but in the combination in which I use it such a pump possesses a new function—that is to say, it insures such a thorough admixture of the acid and alkali solutions as they are being drawn through the long single barrel of the pump that the effective generation of gas is insured before the point of discharge is reached, thus overcoming an objection to extinguishers in which two pumps are used, and the solutions brought together almost at the point of discharge.

I claim as my invention—

1. The combination, in a fire-extinguisher, of a tank having two chambers, chemical charges for said chambers, and a single-barreled pump having suction branches communicating with both chambers, as set forth.

2. A fire-extinguisher tank having two chambers, B D, and charging compartments located above said chambers and having glass bottoms, as set forth.

3. A fire-extinguisher tank having two chambers, B D, and charging-compartments located above said chambers and having glass bottoms, in combination with the break-bars, as set forth.

4. The combination of the tank having a vertical transverse partition, *a*, with a charging-vessel having two partitions at right angles to each other, so as to divide it into four compartments—two above each chamber of the tank—as set forth.

5. The combination of the tank with a charging-vessel having its compartments lined with lead or its equivalent, as described, to prevent caking of the charges therein, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. W. CARYL.

Witnesses:

HARRY DRURY,
HARRY SMITH..