

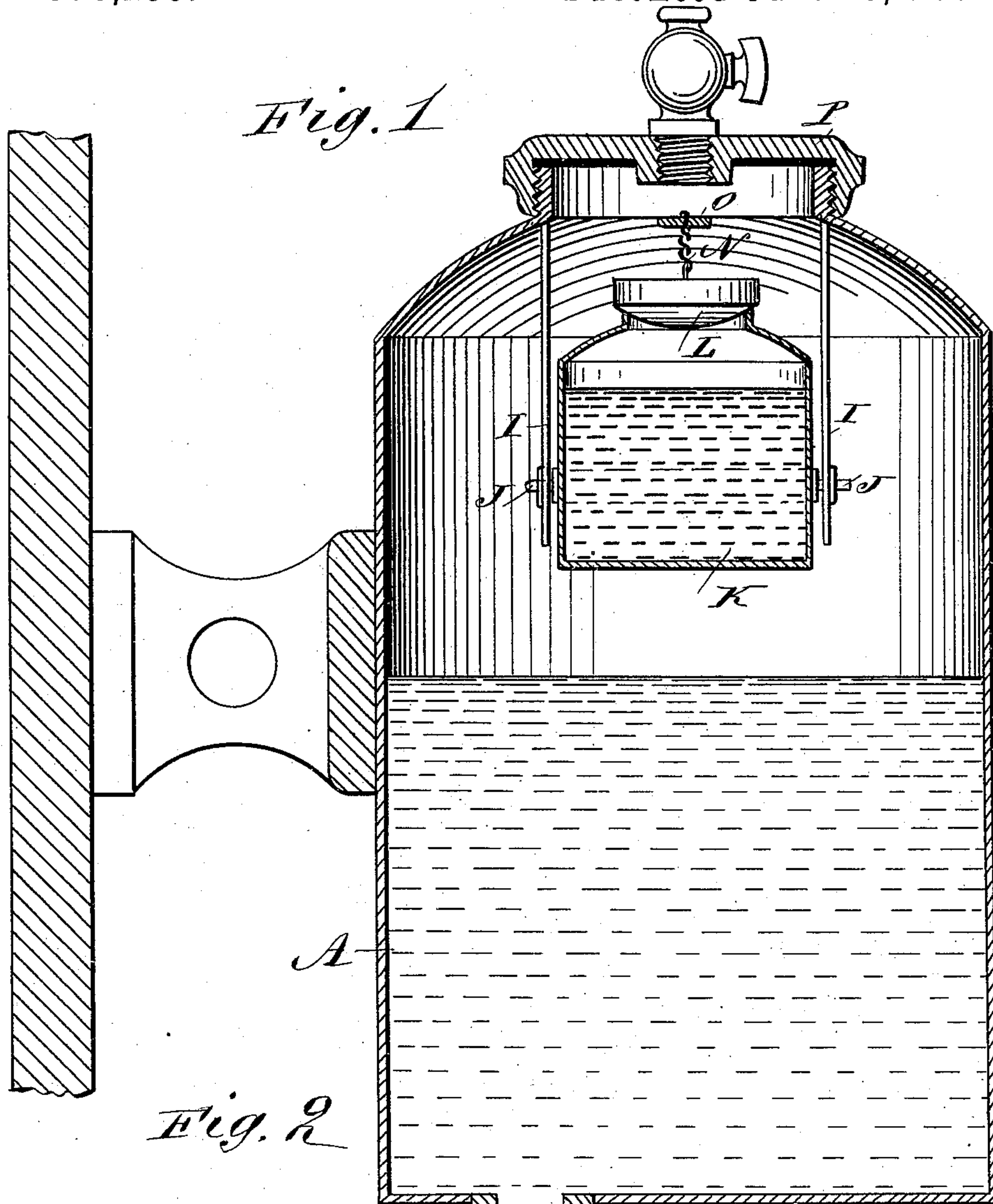
(No Model.)

W. H. DURANT.  
FIRE EXTINGUISHER.

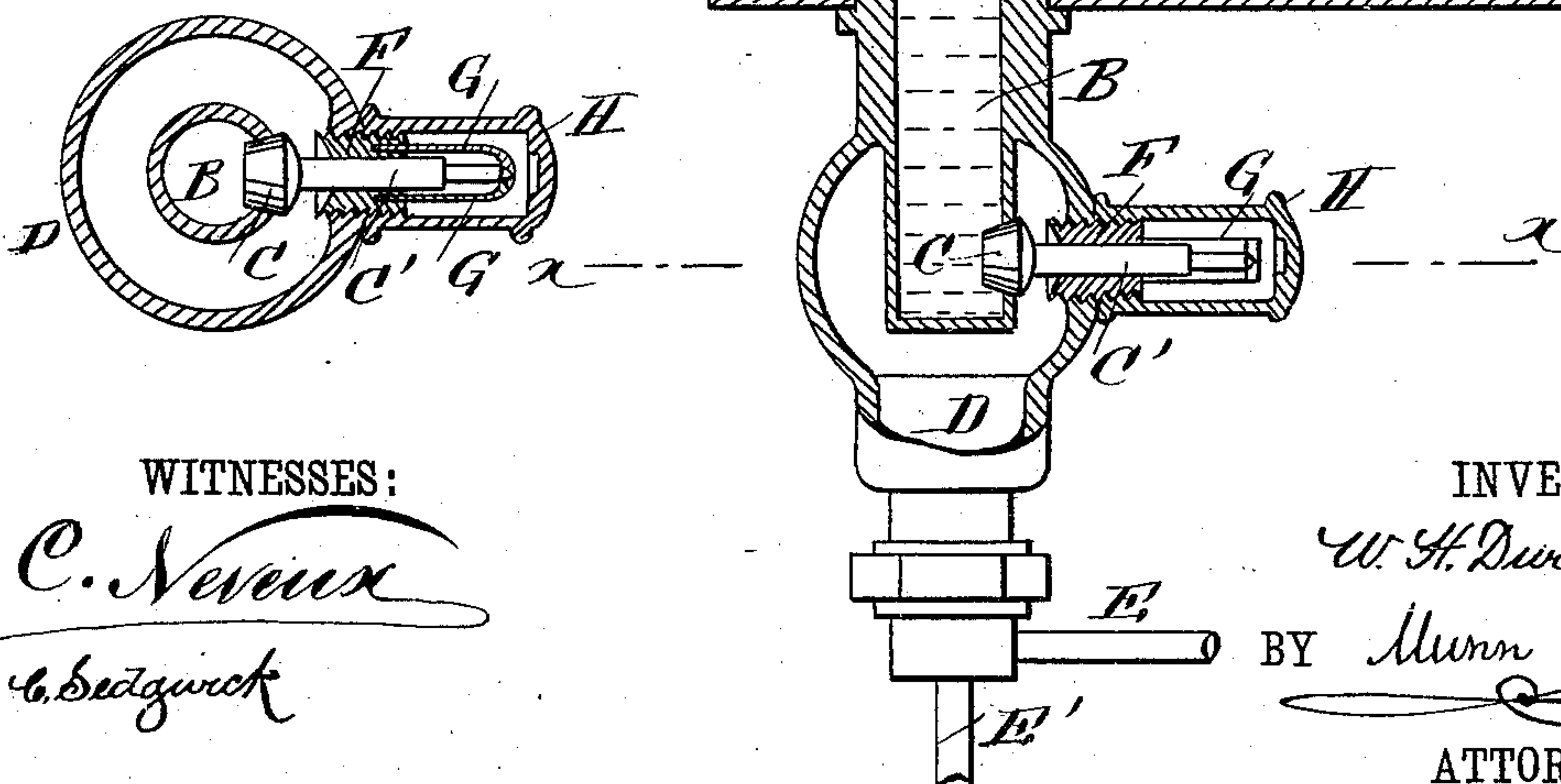
No. 376,239.

Patented Jan. 10, 1888.

*Fig. 1*



*Fig. 2*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM HOAR DURANT, OF CONCORD, NEW HAMPSHIRE.

## FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 376,239, dated January 10, 1888.

Application filed June 29, 1887. Serial No. 242,876. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HOAR DURANT, of Concord, in the county of Merrimack and State of New Hampshire, have invented a new and Improved Fire-Extinguisher, of which the following is a new, clear, and exact description.

The object of my invention is to provide a new and improved fire-extinguisher for instantly extinguishing the fire in a car-heater when the car is upset by a collision or other accident.

The invention consists of a tank containing a solution of bicarbonate of soda dissolved in water, said tank being provided with a valve in its bottom leading to pipes connected with the interior of the car-heater, and of a small vessel turning on trunnions inside of the tank and containing sulphuric acid, which, when emptied into the bicarbonate of soda, produces carbonic-acid gas.

The invention consists in the construction and arrangement of certain parts and details, and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional side elevation of my improvement, and Fig. 2 is a sectional plan view of part of the same on the line *xx* of Fig. 1.

The tank A, of suitable dimensions and material, is located in the neighborhood of the car-heater in a car, and is about one-half filled with a solution of bicarbonate of soda, dissolved in water. From the bottom of the tank A extends a tube, B, in the side of which is held a valve, C, connecting said tube B with the tube D, provided with the pipes E and E', leading into the interior of the car-heater, above and below the grate-bars.

The valve C is provided with a valve-stem, C', having its bearing in a nut, F, screwing into the tube D, and against the outer pointed end of the valve-stem C' press the ends of springs G, secured to said nut F. The ends of the springs G abut against each other, so that the pointed end of the stem C receives an inward pressure from said springs, thus holding the valve C in its seat on the tube B. The

outer parts of the valve-stem C' and the springs G are inclosed in a cap, H, screwing on said nut F.

To the upper end of the tank A are secured the inwardly and downwardly projecting rods I, in the lower ends of which are held, to turn, the trunnions J, secured at opposite points to the small vessel K, containing sulphuric acid. The mouth of the vessel K is closed by a stopper, L, hung by a chain, N, secured to the cross-piece O, fastened to the interior of the tank A, near its upper end. The mouth of the tank A is closed by a cap, P.

The operation is as follows: When my improvement is in the position shown in Fig. 1, the bicarbonate of soda is held in the tank A as long as the valve C closes the opening in the tube B, and said valve C is held in place by the springs G.

If the car in which my improvement is located is upset by a collision or other accident, the small vessel K will turn on its trunnions J, so that the stopper L, hung on the chain N, will be drawn from the mouth of said vessel K, and the contents of the vessel will be emptied into the bicarbonate of soda, so as to produce carbonic acid gas. The pressure of the latter forces the valve C outward, so that the carbonic-acid gas will pass from the tank A, through the tube B, into the tube D, and from the latter, through the pipes E and E', into the car-heater above and below the grate-bars, thus extinguishing the burning fuel on said grate-bars.

When the pressure of the carbonic-acid gas is exerted against the valve C, the pointed end of the valve-stem C' forces the two free ends of the springs G apart, so that the valves C can open.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a fire-extinguisher, the combination, with a tank containing a solution of bicarbonate of soda dissolved in water, a tube extending from the lower end of said tank and provided with pipes leading to the interior of the car-heater, and a valve held in said tube and connecting the latter with the interior of the tank, of a small vessel hung on trunnions in the interior of said tank above said solution of bi-

carbonate of soda and water, said small vessel containing sulphuric acid, and a stopper closing the mouth of said small vessel and hung on a chain secured to the upper end of said tank, substantially as shown and described.

2. In a fire-extinguisher, the combination, with a tank containing a solution of bicarbonate of soda in water, of a small vessel hung on trunnions in said tank above said solution of bicarbonate of soda and water, said small vessel containing sulphuric acid, which, when said tank assumes an inclined position, is emptied

into said solution in the tank, so as to produce carbonic acid gas, and a stopper held on the mouth of said small vessel and hung on a chain secured to the upper end of the said tank, so that when said vessel turns on its trunnions the stopper is removed from the mouth of said vessel, substantially as shown and described.

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Witnesses:

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