No. 829,425. PATENTED AUG. 28, 1906.

J. D. PENNOCK.

FIRE EXTINGUISHER.

APPLICATION FILED MAY 25, 1905.

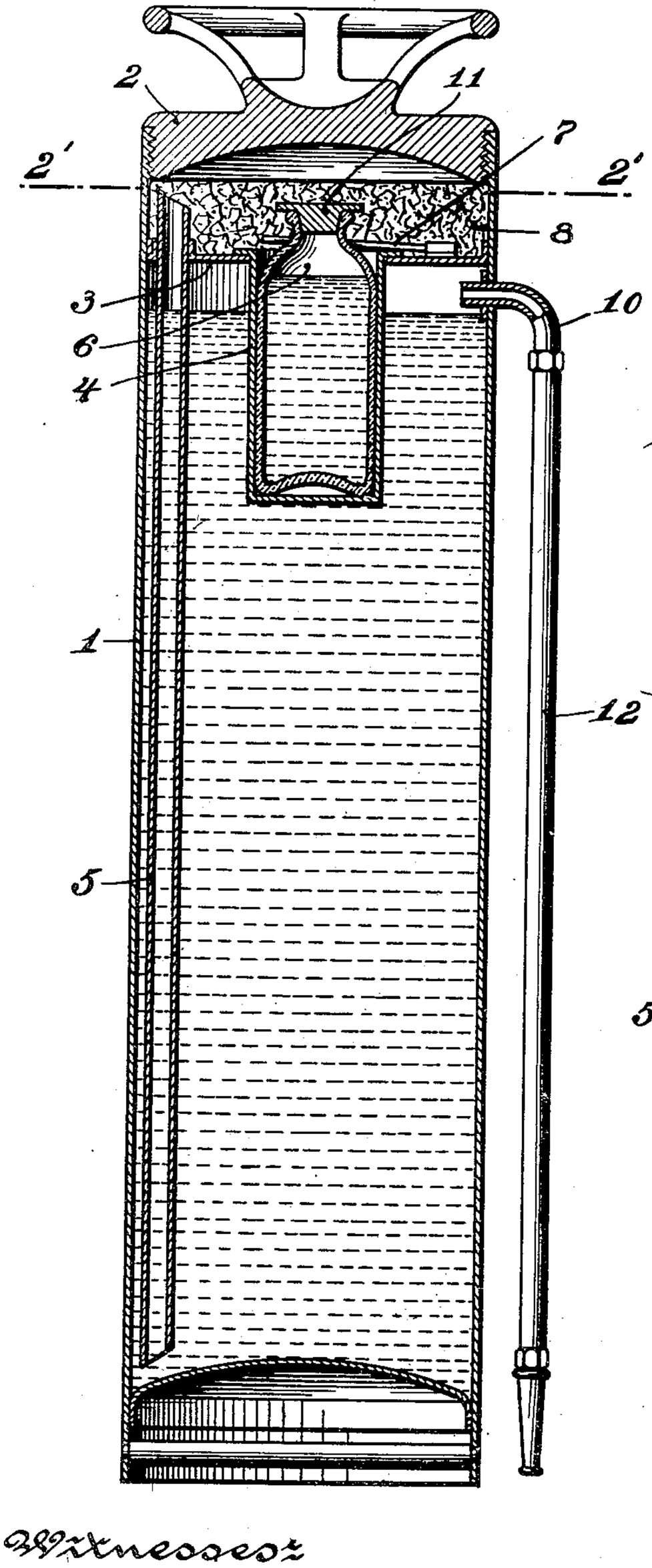
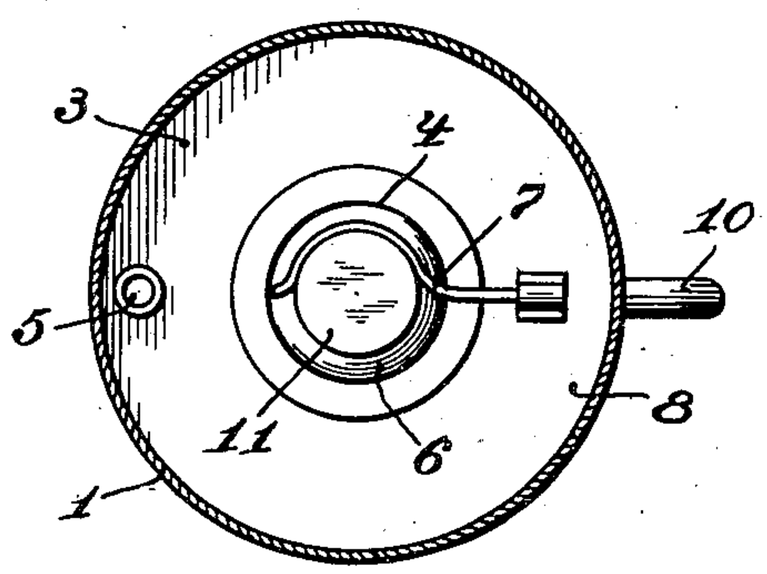


Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN D. PENNOCK, OF SYRACUSE, NEW YORK.

FIRE-EXTINGUISHER.

No. 829,425. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed May 25, 1905. Serial No. 262,125.

To all whom it may concern:

Be it known that I, JOHN D. PENNOCK, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Fire-Extinguisher, of which the following is a specification.

My invention relates to improvements in fire-extinguishers, my object being to provide improved means for extinguishing fires which shall not be subject to the temperature limitations common to similar devices now in use.

A common and well-known form of fire-extinguisher now in use comprises a metallic cylinder in which a solution of bicarbonate of soda is placed and also sulfuric acid contained in a bottle secured to the upper end of the cylinder, the elements being so arranged that when the cylinder is upset the acid and bicarbonate of soda are brought into chemical relation, resulting in the formation of a gas, whereby the solution is expelled with considerable pressure. Such extinguishers, however, cannot be used in storehouses, warehouses, and like places in northern climate, where there is no means of heating the place, as the solution in the extinguisher freezes at about 32° Fahrenheit.

My invention comprises means for the discharge of a chlorid solution of such strength (30° Baumé) that it will not freeze before a temperature of approximately 39° Fahrenheit is reached.

My invention comprises the use of an acid—for instance, muriatic or nitric acid—a carbonate or bicarbonate—for instance, bicarbonate of soda or bicarbonate of potassium—and a chlorid solution—for instance, chlorid of calcium, magnesium, strontium, or sodium. The said acid, bicarbonate, and chlorid solution are so arranged in a vessel that in one position of the vessel each shall be kept separate from the other, but upon inverting the receptacle the acid combines with the carbonate to form carbonic-acid gas, which is discharged into the chlorid solution, causing the said solution to be forced from said receptacle under considerable pressure.

Referring to the drawings, Figure 1 is a vertical section of my device. Fig. 2 is a horizontal section on line 2′ 2′ of Fig. 1.

Similar numerals refer to similar parts throughout both views.

The receptacle 1 is preferably a brass cylinder about two feet in length and seven inches in diameter and adapted to be closed at the top by a screw-cap 2. About one and a half inches below the top of the cylinder is provided the diaphragm 3, containing the centrally-located cup 4, projecting downwardly therefrom. Through the diaphragm 3 on the left-hand side of the cylinder extends the one-quarter-inch tube 5 from above said diaphragm to approximately the bottom of the cylinder. This tube is opened at both ends. The cup 4 is adapted to hold the bottle 6, containing acid, such as muriatic or nitric acid. This bottle 6 is provided with a lead cap 11, set into it with the crown downward, and a rather wide flange, which will prevent the swash of acid into the bicarbonate-chamber. The curved spring 7 is adapted to maintain said bottle in position. The chamber 8 above diaphragm 3 is filled with bicarbonate of soda, while chlorid solution is introduced through pipe 5 into the cylinder beneath said diaphragm 3 until the same is filled to within approximately three-quarters of an inch of the diaphragm. The usual pipe, such as 10, is provided projecting beneath the diaphragm 3 for securing the hose 12. When the chemicals are in the position above described, the screw-cap 2 is secured in position and the device is ready to be put into service. This is done by turning the cylinder in the reverse position from that shown in Fig. 1, whereupon the lead cap 11 will fall from the bottle and the acid will mingle with the bicarbonate of soda, from which is evolved carbonic-acid gas, which will pass through the tube 5 and mingle with the calcium chlorid, causing the same to be driven with pressure through the pipe 10 and hose secured thereto.

Such a device as above described may be exposed to the coldest weather without freezing. By such a device a pressure will be developed equal, if not superior, to that of any other similar extinguisher, and the stream of solution will consequently be thrown an equal or greater distance. The solution itself—that is, the calcium chlorid—is considered an especially efficient means for extinguishing fire.

What I claim is—

1. A fire-extinguishing apparatus, comprising a receptacle divided into two compartments by an intermediate partition, and a conducting-tube leading through said partition from near the top of one compartment to approximately the bottom of the other compartment.

2. A fire-extinguishing apparatus comprising a receptacle provided with two com-

partments separated by an intermediate partition, one compartment being larger than the other, a conducting-pipe leading from the smaller compartment through the partition to approximately the bottom of the larger compartment and a receptacle integral with the partition projecting into the larger compartment and opening into the smaller compartment.

3. A fire-extinguisher comprising a receptacle provided with two compartments, a discharge-conductor from one compartment to the outside atmosphere, a conductor extending from one compartment approximately to the bottom of the other compartment, an acid and a carbonate contained in one compartment normally separated from each other but capable of being brought together, and a chlorid solution in the other compartment.

4. A fire-extinguishing apparatus comprising a receptacle provided with two compartments separated by an intermediate partition, one compartment being larger than the other, a conducting-pipe leading from the smaller compartment through the partition to approximately the bottom of the larger compartment, a receptacle integral with the partition projecting into the larger compartment and opening into the smaller compartment, and a retaining-spring projecting over the said opening.

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