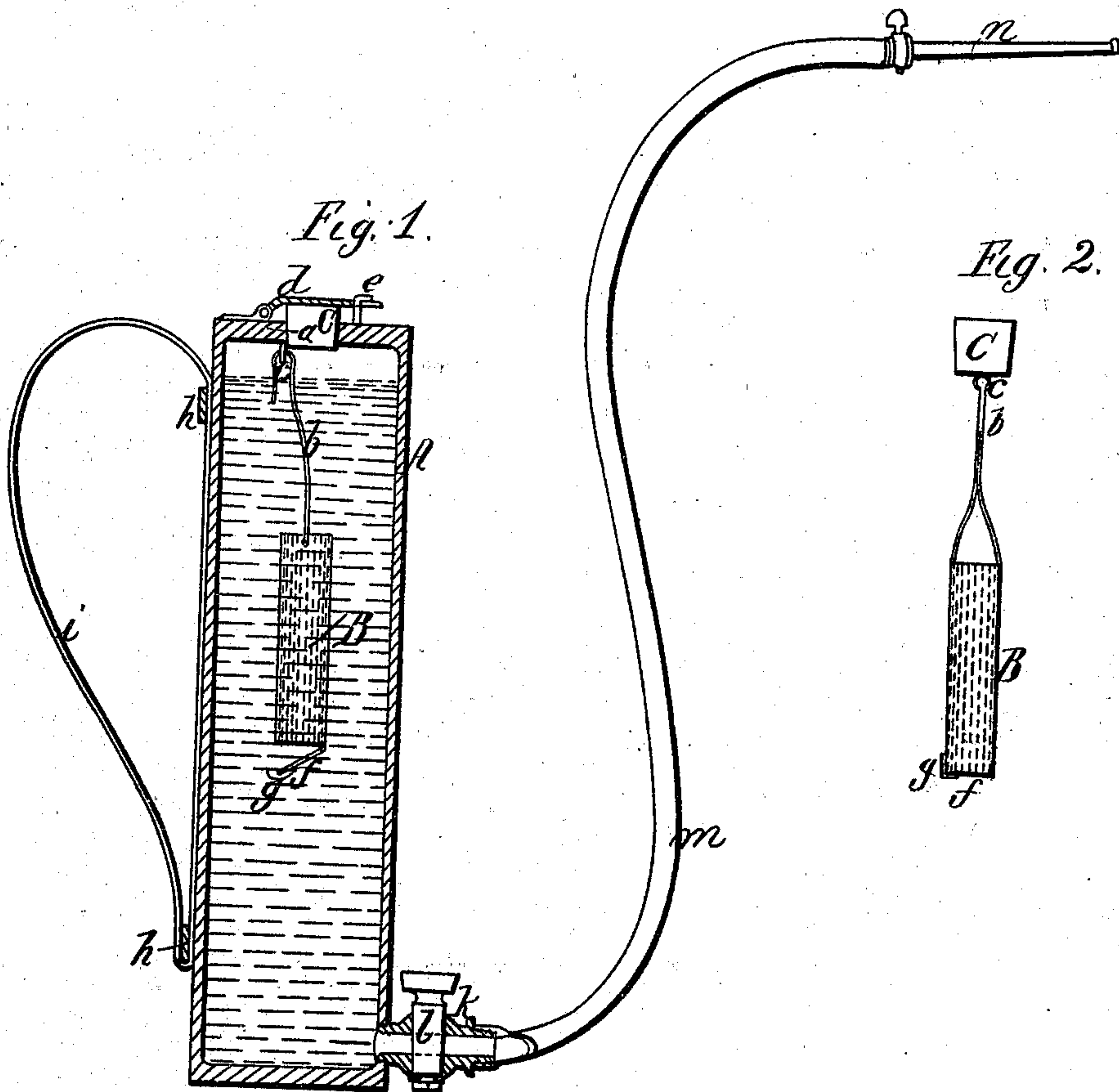


G. Clark, Jr.

Fire Extinguisher.

Nº 87,544.

Patented Mar. 9, 1869.



Witnesses;
E. S. Hayward
B. R. Knapp

Inventor;
Geo. Clark, Jr.

UNITED STATES PATENT OFFICE.

GEORGE CLARK, JR., OF BOSTON, MASSACHUSETTS.

IMPROVED FIRE-EXTINGUISHER.

Specification forming part of Letters Patent No. 87,544, dated March 9, 1869.

To all whom it may concern:

Be it known that I, GEORGE CLARK, JR., of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Fire-Extinguishers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a sectional elevation of a fire-extinguishing apparatus constructed in accordance with my improvement; and Fig. 2, a view, in elevation, of the perforated charger used in said extinguisher, showing the same closed and as attached to the stopple of the apparatus.

Similar letters of reference indicate corresponding parts.

This my improvement relates to apparatus for subduing or extinguishing fires, whether on sea or land, which is of a portable character, and from which, when in use, water impregnated with carbonic-acid gas is discharged at the will of the operator, the pressure to effect the discharge being produced by the generation of the gas in the water within the apparatus.

In such apparatus it is usual to employ a perforated charger, holding one of the chemicals, and which is entered by a screw-threaded construction of it within a water vessel or receiver, in which the gas is generated, on the charger (which also acts as a stopple to the receiver) being screwed home, and a valve in its bottom opened by striking a pin projecting upward from the bottom of the receiver, which effects the necessary admixture of the chemicals and water.

My invention in fire-extinguishers of such character consists in a novel mode of hanging or attaching the perforated charger within the receiver, including the use of an independent stopple to the latter, and peculiar manner of liberating the chemical or chemicals within the charger by the moistening on immersion in the receiver of a seal to the charger-valve.

By this my improvement not only is there an economy in construction, but greater security insured against explosion or premature generation of the gas—that is, before the opening through which the charger has been in-

serted has been stopped—and other facilities or advantages secured.

Referring to the accompanying drawing, A represents the receiver, which is a strong metallic vessel; and B, the perforated metallic charger. This charger is inserted through a contracted mouth or opening, *a*, of a tapering character, in the top of the vessel A.

Said charger is provided with a hook, *b*, for the purpose of effecting its suspension of or from an eye, *c*, arranged within the receiver at its top, or, as shown in Fig. 2, attached to the conical stopple C, made, say, of rubber, and which serves, after the charger has been inserted, to close the mouth or opening *a*, and that is held down or in place by a metallic hasp, *d*, pressed firmly down upon the rubber stopple by a button, *e*, the hasp being hinged to the top of the vessel A, so as to admit of the latter being easily and quickly closed airtight.

The charger B is made with a hinged bottom, *f*, constituting a valve, that is closed by a piece of cloth, *g*, one end of which is permanently fastened to the hinged bottom *f*, and the other end secured to the side of the charger, so that after a short but timely immersion, to prevent premature escape of the charger's contents, the water in the receiver A will loosen the seal or cloth *g* and open the bottom *f*.

The vessel A is constructed with metal loops *h*, through which shoulder-straps *i* are passed, to facilitate transportation and use of the apparatus. Said vessel is constructed, at or near its bottom, with a discharge-aperture, into which is fitted a tube, *k*, that carries a stopcock, *l*, and to this tube is connected a flexible hose, *m*, carrying at its end a nozzle, *n*, suitable for directing and delivering the jet of gasified fluid upon a fire when discharged from the apparatus.

To charge the vessel A according to one method or mode, a quantity of bicarbonate of soda, or its equivalent, is put into it through the opening *a* at the top, and said vessel nearly filled with water. The charger B, having been previously removed from the vessel A, is filled, or nearly so, with tartaric acid, or its equivalent, the hinged bottom *f* being closed by pasting on the cloth *g*. Said charger is then quickly inserted through the opening *a*, and

suspended by its hook *b* to the eye *c* in the receiver; or it may have been previously attached to the eye in the stopple *C*, and the stopple afterward made to immediately close tight the opening *a*, after which the hasp *d* and button *e* are adjusted to securely hold the same down or in place. This done, the water in the receiver loosens the paste on the cloth *g*, when the weight of the contents of the charger forces open the bottom *f*, and so establishes the necessary admixture of the two chemicals. A volume of carbonic-acid gas is thus generated, and the apparatus at once ready for use.

The gas remains in the vessel *A* until the cock *l* is opened, when the expansion of the gas will force out the aerated water in a powerful jet, that may be directed upon a fire, which will be quickly extinguished, and further combustion prevented, and the apparatus be brought to bear upon smoldering remains at a considerable distance from it.

Another method of charging the apparatus consists in placing the tartaric acid into the bottom of the receiver or vessel *A*, and the bicarbonate of soda within the charger; or another method is to place both chemicals in the charger. By adoption of this latter method the vessel *A* may be kept standing open and the chargers ready for immediate use, which can be done quickly by the mode here-

in described of suspending the charger and closing the receiver without risk of explosion or premature escape of the charger's contents into or within the water in the receiver, the sealed valve or hinged bottom not opening until the stoppage of the receiver has been perfectly effected.

By constructing the apparatus as described the cost is most materially reduced.

I do not herein claim extinguishing fires by means of carbonic-acid gas and water, as I am informed that that has been patented in this country and in Europe.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the perforated charger *B*, hook *b*, eye *c*, and stopple *C*, the latter being made to fit the aperture *a* in the receiver, and secured, when in its place, by hasp and button, or their equivalents, substantially as specified.

2. The charger *B*, provided with a hinged bottom or valve, secured, when closed, by paste or cement soluble in water, applied to a cloth or other equivalent seal, made to unite the free end of the valve with the body of the receiver, essentially as herein set forth.

GEO. CLARK, Jr.

Witnesses:

B. R. KNOPP,

E. S. HAYWARD.