P. M. DOUGHTY.

Fire-Extinguisher.

No. 168,627. Patented Oct. 11, 1875.

Fig. 1.

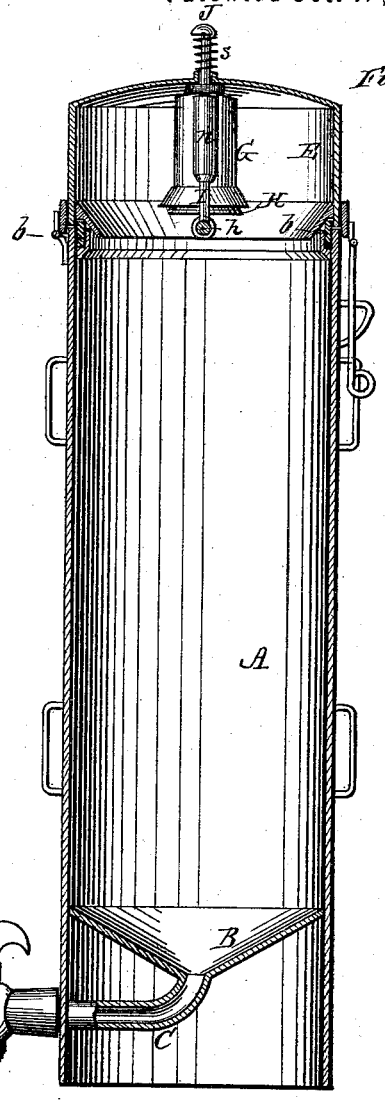
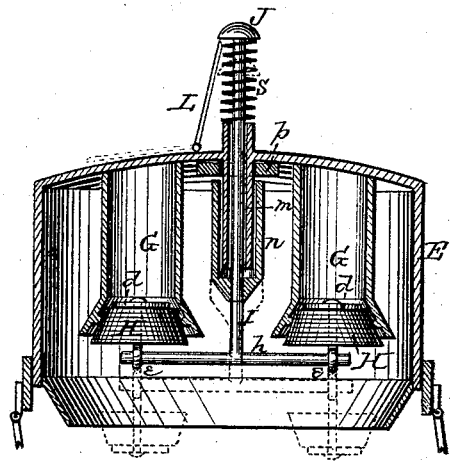


Fig. 2.



WITNESSES:

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PHILANDER M. DOUGHTY, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **168,627**, dated October 11, 1875; application filed March 18, 1875.

To all whom it may concern:

Be it known that I, PHILANDER M. DOUGHTY, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Fire-Extinguishers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a chemical fire-extinguisher, as will be hereinafter more fully set forth.

In the annexed drawing, Figure 1 is a longitudinal section of my fire-extinguisher, and Fig. 2 is an enlarged section of the lid of the tank with the devices attached thereto.

A represents the tank of my fire-extinguisher, constructed of any suitable material and of any desired form and dimensions, whether portable or to be mounted on wheels. The bottom B of the tank is made funnel-shaped, and from its center extends the outlet-pipe C through the side of the tank. In this pipe is arranged a stop-cock, *a*, and a flexible hose, D, with nozzle, is connected thereto in the usual manner. The upper end of the tank is entirely open, and provided with a lid or cover, E, which may be hinged or otherwise jointed to the tank on one side, and, when closed, is fastened thereto by any suitable means. The upper edge of the tank and lower edge of the lid are constructed to receive and hold packing *b*, of rubber or other material, so that when the lid is closed a perfectly gas and water tight joint will be formed. By means of the lid E the entire upper end of the tank A may be thrown open, so as to facilitate the filling and refilling of the tank in whatever place the same may be. To the under side of the lid E are attached two bottles or receptacles, G G, of any suitable material, for containing the acid and soda. The lower ends of these bottles are open and provided with flaring mouths, which are closed by stoppers H H, made of rubber or other suitable material, and each provided with a metallic disk, *d*, on its upper or inner side. On the outer or lower side of each stopper H is an eye, *e*, through which passes the end of a rod, *h*, the other end of said rod passing through the eye on the other stopper. From the center of the rod *h* another rod, I, extends upward through a central tube, *m*, attached in the lid E. To the rod I is fastened a tube, *n*, which is open at its upper end and surrounds the tube *m*, the upper end of the exterior tube *n* pressing against a packing-ring, *p*, when the stoppers are in place. On the upper end of the rod I is a knob, J, between which and the upper end of the tube *m* is a spiral spring, *s*, surrounding the rod I, which spring holds the stoppers tightly in their respective bottles. The bottles G G are filled when the lid E is thrown open, and the stoppers then put in their place. The tank A is filled with water and the lid E closed, when the machine is ready for operation.

When it is desired to use the machine it is only necessary to press down upon the knob J, when the rod *h* will at once remove the stoppers from the bottles; and said stoppers being, by their eyes *e*, hung on said rod, they will turn and hang in the position indicated by dotted lines in Fig. 2. The soda and acid are thus simultaneously precipitated into the water, and generating carbonic-acid gas, so that by opening the stop-cock *a* the water and gas will be forcibly ejected from the tank.

It will be observed that the three elements—water, soda, and acid—are kept entirely separate until needed for use, which is of great importance for many reasons. The water, being alone in the tank, will not corrode the stop-cock *a*, no matter how long it stands therein, which is always the case when the soda is held in a more or less perfect solution in the water. Cold water will not properly dissolve the soda; hence the full effect can never be obtained. By precipitating the soda and acid at one time into the water, the acid will heat the water and also create an agitation therein, thereby facilitating the dissolution of the soda, so that the full effects of the soda and acid are obtained.

A latch, L, may be arranged on the lid to lock the rod I, to prevent the accidental removal of the stoppers H.

The object of the funnel-shaped bottom is

to concentrate the pressure, so that the liquid can be thrown to a greater distance by the use of said bottom than by any other kind.

By the acid and soda coming into the water at the same time, no agitator is required, as a commotion immediately takes place, thereby more effectively dissolving the soda. By said commotion, in addition to the advantage gained by the soda's being mixed with the water at the time of its becoming warm by the acid, the strength of the acid is more thoroughly obtained by this method than has been heretofore obtained in other machines, owing to its coming into contact with the bulk of the soda, thereby producing the greatest possible commotion, thus sending the acid, as also the soda, instantaneously in every direction through all parts of the machine, producing the best results possible to obtain.

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

1. The tank A, provided with funnel-shaped bottom B and outlet-pipe C, with stop-cock *a*, as and for the purposes herein set forth.

2. The combination of the stoppers H, with eyes *e*, rods *h* I, tubes *m n*, packing *p*, knob J, and spring *s*, all constructed substantially as and for the purposes herein set forth.

3. The tank A, in combination with the hinged cover E, provided with bottles for the soda and acid, the said cover being arranged to open and uncover the entire top of the tank, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

PHILANDER M. DOUGHTY.

Witnesses:
H. C. SCOTT,
C. H. WATSON.