

*J. B. Van Dyne,
Fire Annihilator.*

No. 105,279.

Patented July 12, 1870.

Fig.1.

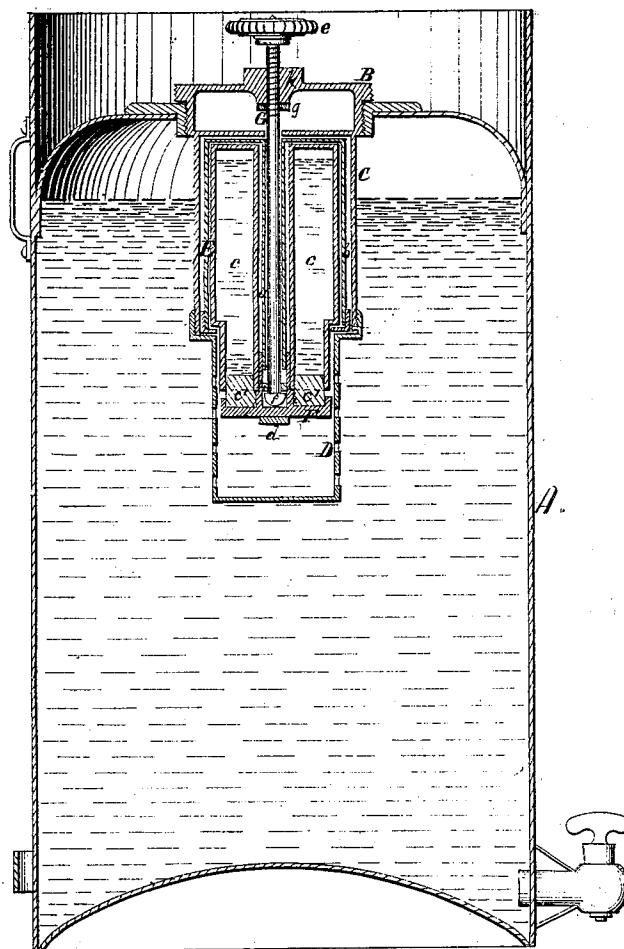


Fig.2.

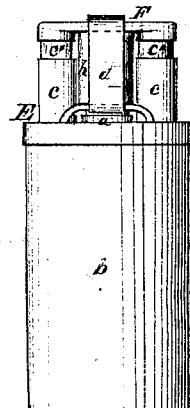
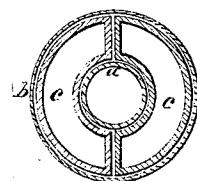


Fig.3.



Witnesses:

*H. V. Peck
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UNITED STATES PATENT OFFICE.

JACOB BRILL VAN DYNE, OF COVINGTON, KENTUCKY.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. 105,279, dated July 12, 1870.

To all whom it may concern:

Be it known that I, JACOB BRILL VAN DYNE, of Covington, in the county of Kenton and State of Kentucky, have invented a new and useful Improved Fire-Extinguisher; and I do hereby declare the following to be a full and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, making part of this specification, and to the letters and figures marked thereon.

The nature of my invention consists in the peculiar construction of the cartridge containing the cases or bottles of gas-generating acids, the formation of the cases themselves, the facility with which the cartridge can be discharged of its contents into the prepared water in the reservoir of the apparatus, and the apparatus reloaded or furnished with fresh cartridges.

In the drawing, Figure 1 is a longitudinal vertical section of my improved fire-extinguisher. Fig. 2 is an elevation of the cartridge, and Fig. 3 is a transverse section of the cartridge.

Similar letters of reference indicate corresponding parts.

The casing and reservoir A is made of any suitable material strong enough to withstand the pressure to which it may be subjected, and may be of any suitable form, preferably that of a cylinder. The top of the reservoir is a short distance below the top of the casing, so that a lid may be placed on it to protect the parts, and the apparatus may rest on either end, as desired. Fitting in the top of the reservoir is a flanged collar, B, formed with a cylindrical extension, C, projecting downward, as shown in Fig. 1, and having attached to its lower portion a cylindrical perforated screw-cap, D.

In the upper part of the flanged collar B is a hole, *k*, formed with screw-threads, through which passes a screw-plunger, G, having on its upper end a hand-wheel or knob, *e*, and on its lower end a ball or head, *f*. The hole *k* is provided with a packing, *g*, to prevent leakage and the escape of gas.

The cartridge E consists of a box or case, *b*, containing acid-bottles *c*, and provided with a stirrup-piece, F, and elastic band or spring

d. The case *b* is cylindrical in form and of a height nearly equal to the depth of the extension C.

The acid-bottles *c* may be made of any suitable material, but I prefer to make them of strong glass. They are segmental in form, and are placed in the case *b* so as to surround the screw-plunger G, as shown in Fig. 3.

The cartridge may be provided with the center tube *a* if desired.

The stirrup-piece F is formed with a center thimble or tube, *h*, intended to pass up into the annular opening formed by the inner sides of the acid-bottles, and with shoes on each of its ends, in which are secured the stoppers *c' e'* of the said bottles. It is placed over the bottles so that the stoppers enter their necks and is pressed and held in place by an elastic band or spring, *d*, passing over it and connecting with loops on the case *b*.

When the cartridge is completed and ready for use, it presents the appearance shown in Fig. 2. To place it in position the flanged collar B is removed and inverted and the perforated screw-cap D detached. The cartridge E is placed in the extension C, so that the screw-plunger will pass through the tube formed by the inner sides of the acid-bottles down to the thimble *h*, formed on the stirrup-piece F, which thimble *h* extends into and closely fits the base of the tube so formed. The perforated screw-cap D is then replaced, holding the parts securely in position, and the flanged collar B is screwed in the top of reservoir, as shown in Fig. 1.

The operation of my invention is as follows: The cartridge E being primed with the acid-bottles, and the water in the reservoir containing the proper solvents, by turning the wheel or knob *e* the plunger G is screwed down until its head *f* presses down the stirrup-piece F, thereby withdrawing the stoppers from the bottles and liberating the acid, which combines with the solvents and generates the desired quantity of gas. The water is discharged through a pipe attached to the bottom of the reservoir. The apparatus is reprimed by withdrawing the case C, inverting it, removing the perforated cap D, and withdrawing the discharged cartridge E and replacing it by a fresh one.

In all other fire-extinguishers great trouble

and care are required to preserve the bottles containing the gas-generating acids, and much delay occurs in priming the apparatus with the same.

The priming of my apparatus can be accomplished without any delay, and the acid-bottles being packed in the cartridges are perfectly protected from all liability to breakage in packing and transportation, &c., and each apparatus being provided with several of these cartridges the advantages which my device possesses over that of all other devices for similar purposes now in use will readily be seen.

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

1. The cartridge E, consisting of the box or case b, acid-bottles c c, stirrup F, shoes and stoppers c' c', tube a, and screw-plunger G, constructed and arranged as herein shown, and for the purpose described.

2. The arrangement by which the stoppers c' c' are retained in the throats of the acid-bottles c, by means of the elastic band or spring d, and expelled from them by the screw-plunger G, as herein shown, and for the purpose described.

JACOB BRILL VAN DYNE.

Witnesses:

H. D. PECK,
C. L. FISHER.