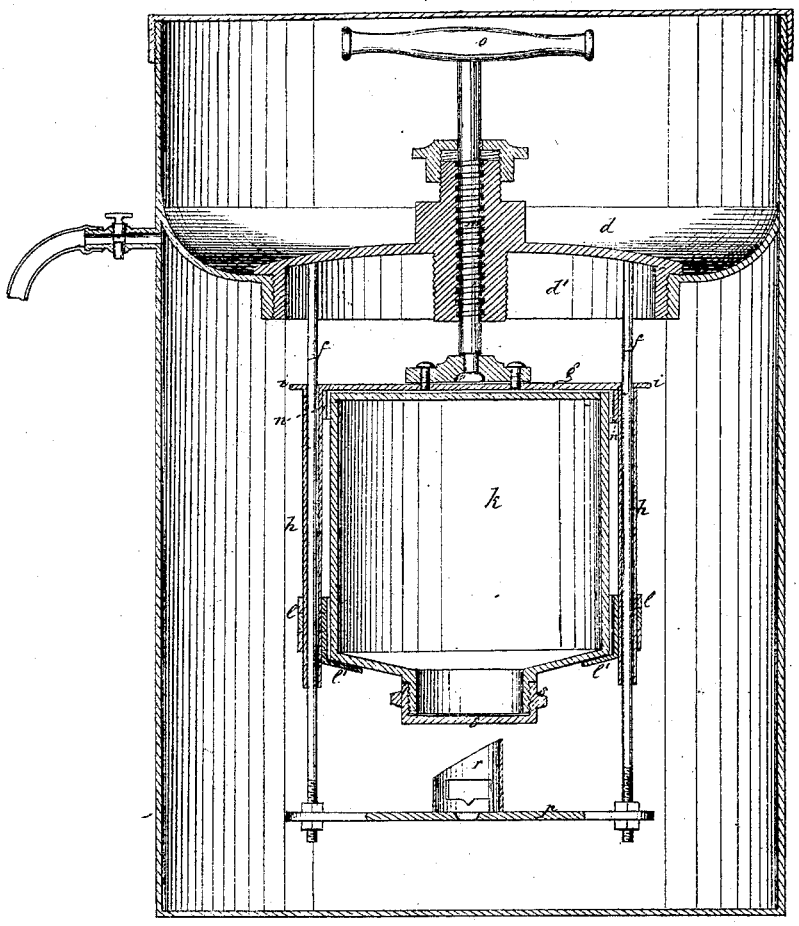
J. B. VAN DYNE.

Improvement in Fire-Extinguishers.

No. 114,627. Patented May 9, 1871.




Witnesses:

H. J. Streb

Thos. D. D. Outland.

Inventor:

Jacob B. Van Dyne.

PER

Attorneys.

# UNITED STATES PATENT OFFICE.

JACOB B. VAN DYNE, OF COVINGTON, KENTUCKY, ASSIGNOR TO THE NORTH WESTERN FIRE EXTINGUISHER COMPANY, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN FIRE-EXTINGUISHERS.

*Specification forming part of Letters Patent No.* 114,627, *dated May* 9, 1871.

*To all whom it may concern:*

Be it known that I, JACOB B. VAN DYNE, of Covington, in the county of Kenton and State of Kentucky, have invented a new and Improved Fire-Extinguisher; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, in which the figure is a sectional elevation.

This invention relates to a portable fire-extinguisher of that class in which, by the action of an acid upon an alkali held in solution within a reservoir, carbonic-acid gas is generated, which both aerates the water in the reservoir and, by its expansive force, ejects from the reservoir a carbonated stream that, when thrown upon fire, completely smothers it.

Referring to the drawing, *d* is a cast-metal disk having a downwardly-projecting flange, *d'*, near its perimeter, on the outside of which flange is cut a screw-thread, which enables the disk *d* to be screwed into an annular flange that extends inward from the inside of the reservoir which contains the alkaline solution, the said ring forming, with the disk *d*, a complete diaphragm across the reservoir.

Into the lower side of the disk *d* are screwed the upper ends of vertical guide-rods *f*, and on these guide-rods is placed a disk, *g*, having orifices through which the guide-rods pass.

To lugs *i*, extending from opposite sides of the disk *g*, are attached the upper ends of tubes *h*, which inclose the guide-rods *f*.

On the under side of the disk *g* is an annular flange, *n*, and this flange serves as a support for the bottom of the acid-jar *k* when the latter is inverted, and placed between the tubes *h* and upheld in contact with the disk *g* by means of a ring, *l*, having ears that inclose and are fastened to the tubes *h*, and having a flange, *l'*, that extends inward nearly to the neck of the acid-jar *k*.

The ring *l* is made in three parts, whereof one part is rigidly attached to the tubes *h*, and the other two parts are each hinged to one of the tubes *h* so as to turn back and admit the jar and then close upon it, the free end of the hinged parts having outstanding lips, through which passes a screw to connect them.

With the top of the disk *g* is suitably connected the bottom of a screw, *m*, which passes upward through the disk *d*, and is provided with a handle, *o*, at its upper extremity, by which to turn the screw.

It is obvious that when the screw *m* is turned it will either raise or lower the disk *g* and the acid-jar, according to the direction in which the screw is rotated.

To the lower ends of the rods *f* is secured a cross-bar, *p*, to the upper side of which is attached an annular inclined cutter, *r*, situated directly beneath the lead cap *c* of the acid-jar, which cap is screwed upon the neck of the jar before the latter is placed between the tubes *h*.

The office of the cutter *r* is to pierce said cap when the acid-jar is lowered into contact with the cutter, and thus allow the acid to escape from the jar and mingle with the surrounding alkaline water.

The inclination of the cutter causes the piercing of the cap to take place gradually, and, therefore, more easily.

I am aware that the broad idea of crushing or piercing the acid-jar is not new, the same being found in a patent granted to John Boynton July 15, 1869. I therefore disclaim such invention, broadly; but,

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

1. The combination of the screw *m*, disk *d*, guide-rods *f*, cross-bar *p*, and cutter *r* with the disk *g*, acid-jar *k*, and ring *l*, substantially as described.

2. The combination of a soft-metal cap for the cartridge with a perforative instrument, substantially as and for the purpose specified.

J. B. VAN DYNE.

Witnesses:

SOLON C. KEMON,

CHAS. A. PETTIT.