No. 91,304.

John F. Boynton

Rail-Road Fire Extinguisher.

Patented, June 15th 1869.

Fig. 1

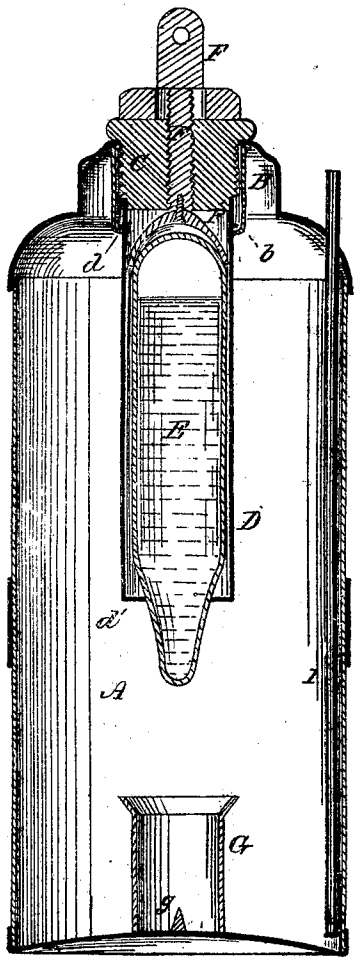


Fig 2.

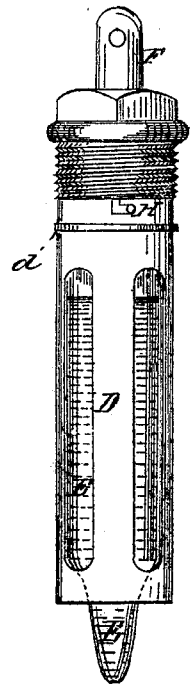


Fig 3.



Witnesses

F. Smith

Jos. Sloomis

Inventor.

John F. Boynton.

UNITED STATES PATENT OFFICE.

JOHN F. BOYNTON, OF SYRACUSE, NEW YORK.

IMPROVED APPARATUS FOR EXTINGUISHING FIRES.

Specification forming part of Letters Patent No. 91,304, *dated June* 15, 1869.

To all whom it may concern:

Be it known that I, JOHN F. BOYNTON, of Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Apparatus for Extinguishing Fires; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to that class of apparatus in which water charged with carbonic-acid gas is thrown by the expansive force of the gas generated upon the fire.

In order to enable those skilled in the art to make and use my invention, I will proceed to describe it, reference being had to the annexed drawings, making part of my specification, in which—

Figure 1 is a sectional view of my apparatus, and Fig. 2 a view of the tube containing the acid-chamber.

The body of the apparatus is made of any desirable material of suitable strength to resist the pressure of the gas generated within it. In the top is an opening, from which extends a collar, B, within the generator, at the lower edge of which is an annular flange, *b*, projecting inwardly. The upper part of said collar is formed with a screw-thread, to engage the thread on the screw-plug C, which is intended to close the opening. From the said collar B a tube, D, extends into the generator, being supported by a shoulder, *d*, on its upper part, which rests on the flange *b* of the collar B. This tube is designed to contain the acid chamber or vessel E, and is perforated or provided with longitudinal openings, as shown in Fig. 2.

The acid-chamber consists of a glass bottle or capsule, filled with acid, and hermetically sealed, or otherwise securely closed by a stopper; or it may be made of lead, and the apparatus so constructed and arranged that pressure upon the upper end will cause the lower end to be perforated, so as to discharge the acid into the generating-chamber; but I prefer it made of glass and hermetically sealed.

Through the screw-plug C passes a screw-rod, F, having attached to its lower end an inverted cup-shaped disk, F′. The upper part of said screw-rod is provided with an eye or nut, in order that it may be turned by means of a rod or key. Instead of supporting the tube D by the shoulder *b*, it may be attached to the screw-plug C by means of a bayonet-joint, as shown at H, Fig. 2, or by a screw-thread, or in any other suitable manner. It is in all cases so arranged that it may be removed from the generator in order to insert the acid bottle or capsule.

The solution is discharged through a pipe, I, extending from the bottom through the top of the apparatus.

When the apparatus is designed for use on railroad-cars, &c., in order to insure the acid bottle or capsule against breakage from shocks and jars, I encircle it with rubber bands, or other equivalent elastic substance, and also arrange a spiral or other suitable spring in the bottom of the tube D, for the acid-vessel to ride upon.

I sometimes find it desirable to increase the size of the acid-chamber; and in that case I attach to the bottom of the generator a short tube, G, in which the end of said acid-vessel rests, and the tube D is made without the flange *d′* upon the lower end. A spiral or other suitable spring may be placed in this tube, and a metallic projection, *g*, may be attached to the bottom of the generator, within the tube, for the acid capsule or bottle to break upon; or a similar projection for that purpose may be placed in the lower end of tube D.

To prepare the above apparatus for use, the screw-plug C and tube D are removed, and the solution of carbonated salts or other chemical filled in through the opening. The acid bottle or capsule E is then inserted in the tube D, and the whole properly inserted in the generator, which is then closed by means of the screw-plug.

When it is desired to use the apparatus, it is only necessary to turn the screw-rod F, which forces the disk F′ upon the acid bottle or capsule, and breaks the neck against the flange *d′*, or breaks or punctures the lower end by pressing it upon the projection *g*. The acid, mixing with the solution of carbonate, decomposes it, disengaging carbonic-acid gas, which generates the pressure necessary to discharge the contents of the generator.

The acid-vessel should be so constructed or arranged that when pressure is brought to

bear upon it for the purpose of breaking or piercing it, the rupture will take place at the lower end.

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

1. In combination with the generator of a fire-extinguisher, constructed to operate as described, the hermetically sealed or securely-closed acid bottle or capsule, arranged therein substantially as herein described.

2. In combination with the acid bottle or capsule, the tube D for holding the same, substantially as described.

3. The method of liberating the acid by breaking or piercing the acid bottle or capsule, substantially as described.

4. The employment of rubber bands, or equivalent elastic substance, and spring, in combination with the acid bottle or capsule, for the purpose herein described.

5. As a new article of manufacture, the hermetically-sealed capsules, containing acid, as herein described.

JOHN F. BOYNTON.

Witnesses:
JOS. L. COOMBS,
EDM. F. BROWN.