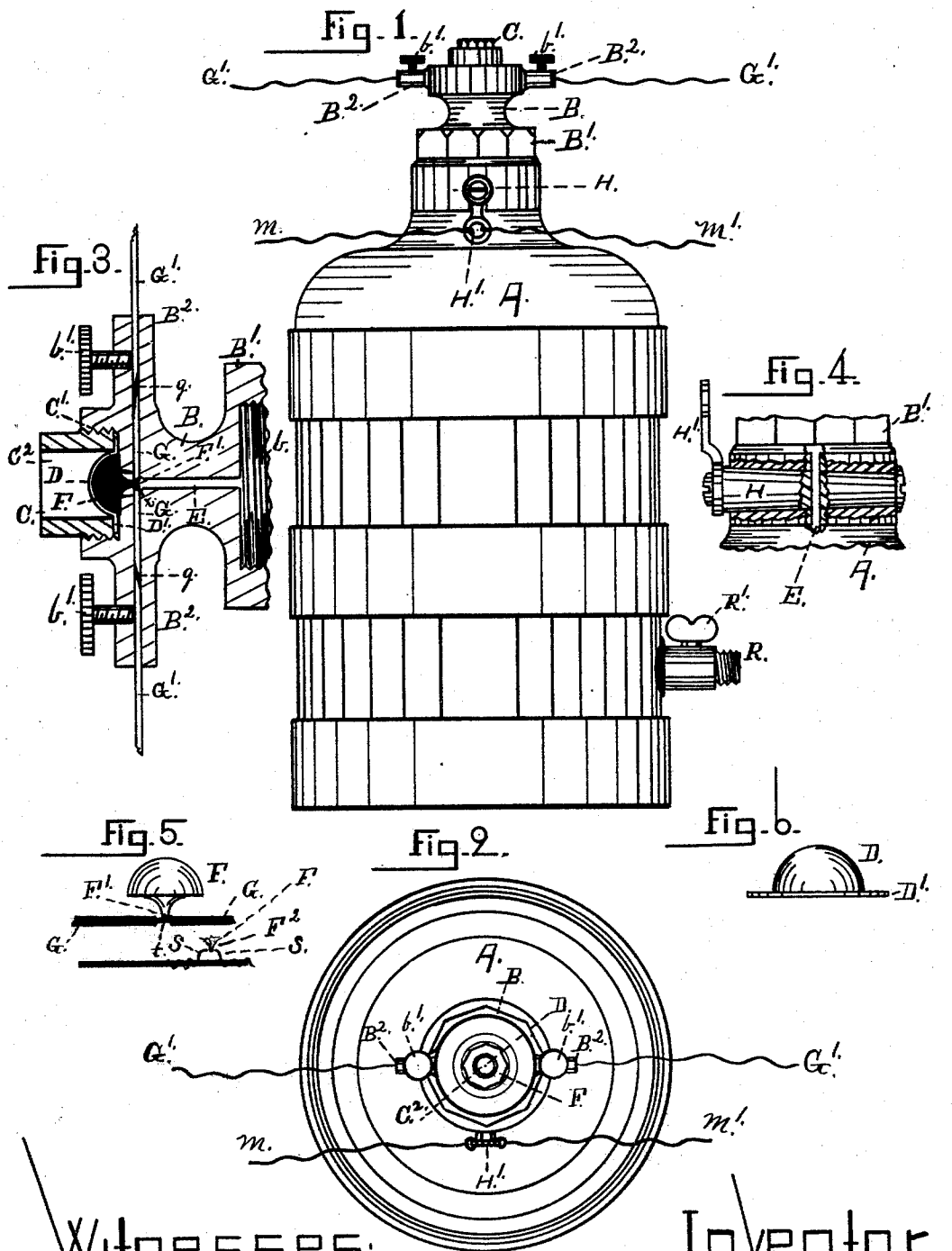


O. J. AVERELL.
FIRE EXTINGUISHER.

No. 483,522.

Patented Oct. 4, 1892.



Witnesses:

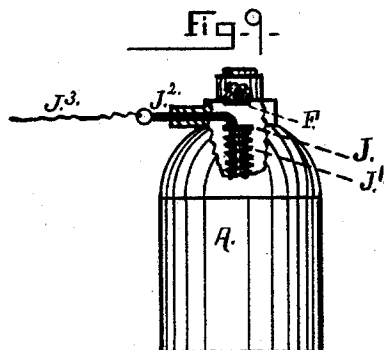
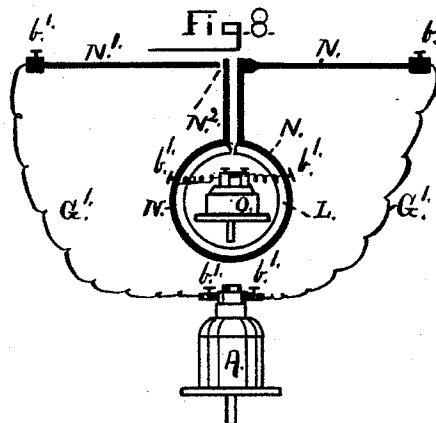
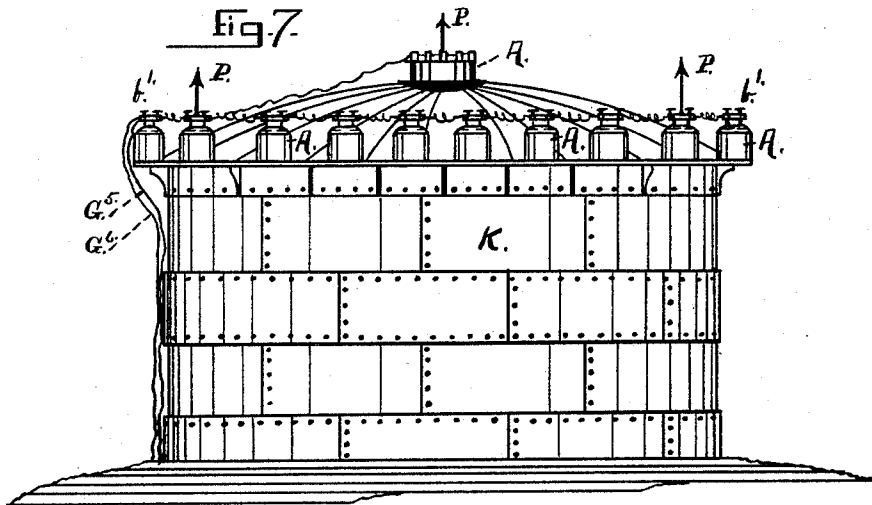
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UNITED STATES PATENT OFFICE.

OSCAR J. AVERELL, OF NEW YORK, N. Y.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 483,522, dated October 4, 1892.

Application filed March 11, 1890. Serial No. 343,446. (No model.)

To all whom it may concern:

Be it known that I, OSCAR J. AVERELL, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Fire Preventers and Extinguishers, of which the following is a specification.

The object of this invention is to extinguish fire instantaneously.

The invention consists in a fire-extinguishing apparatus having certain features, as specified hereinafter in the claims.

Figure 1 is a general view of my "fire-extinguisher." Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a vertical sectional view of the gas-receptacle cap. Fig. 4 is a sectional view of the stop-cock. Fig. 5 is the fulminate or cartridge for blowing the seal off and connecting-wires for exploding it. Fig. 6 is the seal for confining the gas. Fig. 7 is a series gas-receptacle as applied to an oil-tank. Fig. 8 shows the method of forming an electrical circuit by expansion, and Fig. 9 shows how the cartridge or fulminate may be exploded by concussion.

Previous to my invention seals confining carbonic-acid gas under great pressure have been destroyed by fusion, in which case the fire had to heat the room to a certain temperature before the seal melted. This allowed the fire to destroy the surrounding property and only permitted the gas to escape after the damage had been done.

A in the several drawings represents a reservoir made sufficiently strong to resist a high pressure, as the gas must be compressed in order to act properly.

B is a cap screwed on the receptacle A and supports the necessary devices.

B' is a nut-head by which the cap B can be firmly screwed down.

B² B² are arms supporting and holding the conducting-wires.

C is a tubular holder for holding the seal in place.

H is a valve, and H' is a valve-lever provided with cords *m m'*.

R is a pipe leading into the chamber, through which the gas is forced as the reservoir is filled, and R' is a valve for preventing

the gas from escaping. The cap B is provided with a small needle-passage E, leading up to the seal-cap C, through which the gas escapes after the seal D has been blown off. On the size of this needle-passage depends the flow of gas and its value in displacing the air.

G G in Fig. 3 are insulated conductors having the platinum connection *t*, as shown in Figs. 3 and 5.

G' G' are insulated conducting-wires connecting to the battery and joining the fixed conductors G G at *g g* and held in place by the thumb-screws *b' b'*, as shown in Fig. 3. The seal-cap C has an opening C², Figs. 2 and 3, which exposes the seal and allows the gas to escape when the seal has been broken.

D in Figs. 3 and 6 is a seal for holding the gas in the receptacle and may be made of any suitable material of sufficient strength to hold the gas when under high pressure. This seal is provided with a rim D', which forms a seat C' for the seal-screw C to rest on and hold the seal D in place, preventing any gas from escaping. The holder C can be removed when it is necessary to replace the seal D and explosive F.

F, Figs. 3 and 5, is an explosive cartridge or fulminate having the point F', which rests on the platinum *t*, which connects the conductors G G, or is placed between two conductor-points, as at S S, Fig. 5.

The close proximity of the explosive pellet or cartridge to the conductors is necessary, as the heating of the platinum by the current causes the explosion, or the emitting of the spark from one conductor to the other produces the same result.

The stop-cock H, Fig. 4, has a passage E through it, which corresponds with the needle-hole of the cap B, allowing the gas to pass through when needed to extinguish fire; but when it is not all required and to prevent waste the cord *m*, which is secured to the arm H', is drawn, shutting off the flow.

The conductor G' can be connected with several extinguishers, as shown in the application, to an oil-tank K in Fig. 7, the platinum *t* completing the circuit from one conductor to the other, or the separated conductors S S may be used, as in Fig. 5.

The number and capacity of the receptacles

used depends upon the size of the room, and should be placed near the top of the room, as the gas, being heavier than the atmosphere, settles.

5 In the plan described the cartridge is exploded by completing the circuit on discovering the fire, while in Fig. 8 I show how the circuit can be closed automatically by heat expansion, which will act before fusion.

10 N is a ring provided with arms N' and having an inner ring L, made of more expansible metal than the outer one. N² is a stationary conductor, one arm of which is separated from N' by the open space N². The conducting-
15 wires G' G' are secured to the parts N² and A by thumb-screws b' b'. When a fire occurs, the heat expands the metal L, forcing the arm of the ring N out until it closes the space N² and forms the circuit to the receptacle, ex-
20 ploding the cartridge.

Fig. 9 is a modified form of exploding the cartridge by concussion. J is a sliding ham-
mer having the spring J'. J² is a trigger, which, being drawn back by the cord J³, al-
25 lows the hammer to ascend and by concussion explode the cartridge F.

P P P in Fig. 7 are conducting-rods for lightning to strike, and, being connected to the wires G⁵ and G⁶, cause the cartridge to
30 explode and immediately puts out the fire caused by the stroke of lightning.

The application of my invention can be used to prevent and extinguish fire in all structures, some of which are oil-tanks, cotton-
35 seed-oil factories, vessels, stores and storage-houses, postal and express cars, safes, vaults, arsenals, and all property exposed to fire.

I am well aware that explosives have been used to break glass vessels containing acids
40 under their normal pressure for extinguishing fire, which necessitated the replacing of new vessels in case of a fire or false alarm and caused the total loss of all the acids in case of a false alarm or a small fire. I am
45 also aware that non-destructible steel vessels have been used to confine compressed carbonic-acid gas, which was released by the fus-

ing of a seal by heat. To these I make no claim.

Having thus fully described my invention, 50 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a receptacle for fire-extinguishing fluid, provided with a suitable discharge-tube having a recess in its
55 outer end and a shoulder surrounding the discharge-passage, of a seal covering the discharge-passage and bearing against the shoulder, a tubular holder secured in said recess and clamping said seal against the shoulder, 60
a cartridge beneath said seal, and means for exploding said cartridge, substantially as described.

2. The combination of a discharge-nozzle for a fire-extinguishing apparatus, consisting
65 of a neck provided with a longitudinal bore for the passage of fluid and a receptacle containing explosive in the end thereof, with a seal covering the end of said bore and said explosive and a conductor for electricity pass-
70 ing through said neck to the explosive for igniting the latter, substantially as described.

3. The combination of a discharge-nozzle for a fire-extinguishing apparatus, consisting
75 of a neck provided with a longitudinal bore for the passage of fluid and a receptacle containing explosive in the end thereof, with a seal covering the end of said bore and said explosive and means for igniting the explo-
80 sive, substantially as described.

4. The receptacle A for containing a fire-extinguishing element, a cartridge F to blow
off the seal D, and the conductors G and G', in combination with the lightning-rod P to fire
85 the cartridge F, as and for the purpose specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 5th day of August, 1889.

OSCAR J. AVERELL.

Witnesses:

E. D. THOMAS,

CHAS. W. BOLLES.