

No. 620,883.

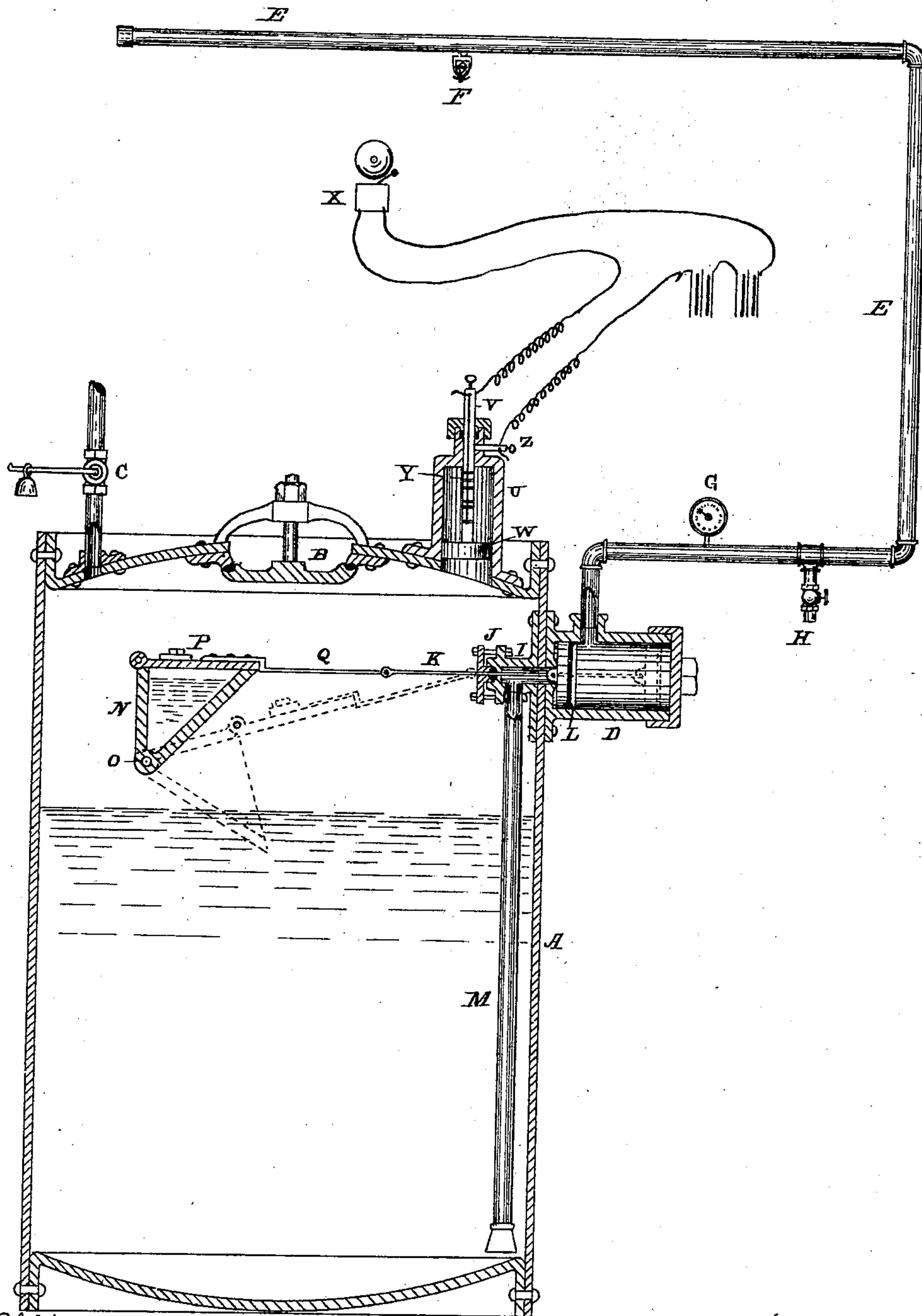
Patented Mar. 14, 1899.

J. L. BUTLER.

AUTOMATIC FIRE EXTINGUISHER.

(Application filed Nov. 13, 1897.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES L. BUTLER, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO RUSSELL T. DOBSON, OF SAME PLACE.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 620,883, dated March 14, 1899.

Application filed November 13, 1897. Serial No. 658,505. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. BUTLER, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Automatic Fire-Extinguishers, of which the following is a specification.

My invention has a general relation to improvements in automatic fire-extinguishers in which a system of pipes connected with a source of supply of water or fire-extinguishing gas is extended through the buildings or apartments to be protected and provided with a number of vents closed by devices fusible at a low temperature; and it has especial relation to that class of extinguishers in which a system of pipes having the fusible vents is charged with fluid under pressure that by its escape relieves the pressure and causes gas-generating mechanism to be actuated to create a fire-extinguishing gas, open a gate to the pipe-system, and force the gas through the pipes and out of the open vents or vent.

The objects of my invention are to produce an improved gas-generating apparatus of the kind specified in which the acid-tank shall operate to open the gate to the pipe system and simultaneously automatically discharge its contents into the alkaline solution in the generating-tank. Its further object is to provide devices whereby certain determined signals shall be given upon the operation of the apparatus.

To the aforesaid objects my invention consists in the peculiar and novel construction, arrangement, and combination of parts hereinafter described and then specifically pointed out in the claims, reference being had to the accompanying drawing.

The figure is a view in section of my improved automatic fire-extinguisher.

Referring to the figure, A is a metallic tank partially filled with a solution of soda, provided with a manhole B, closed with a cap and clamp, and a safety-valve C. Fastened near the top of the tank is a cylinder D, internally connected with the pipe E of the pipe system and provided with fusible vents F (one only of which is shown) and a safety-valve G and a hose-tip H, by which means a hose may be used to direct the fire-extinguishing gas to any

particular point. Extending into the tank A from the cylinder D is a pipe I, guarded by a stuffing-box J, through which slides a piston-rod K, connected with the piston L. A branch pipe M extends from the pipe I nearly to the bottom of the tank. A cup N, of lead or other material impervious to the action of acid, containing sulfuric acid is pivoted at the point O inside the tank and has a hinged cover P, to which is rigidly secured a rod Q, hinged to the rod K.

In operation the pressure of air in the cylinder D and pipes E forces the piston and piston-rod outward, and through the rod Q maintains the acid-cup N upright. When a brace or a part of any of the vents gives way from the fusing of the solder, the pressure in the pipes E and in the cylinder back of the piston is reduced. This permits the acid-cup to swing down and empty its contents into the soda solution to generate gas, and simultaneously the cover P and rod Q, acting as a single piece, force the piston into the cylinder beyond the pipe E, thus enabling the contents of the tank to be forced by the gas-pressure through the pipe M into the pipe system.

In the top of the tank A and having internal connection therewith is a cylinder U, closed at the top and provided with a stuffing-box, through which slides a piston-rod V, bearing a piston W. The piston-rod V is of non-conducting material and has a central core of metal connected by a wire with one post of the bell X. The central core of the piston-rod V has at determined intervals metallic connections Y, that extend to the outside of and are flush with the outer surface of the rod.

Inserted in the side of the stuffing-box is a contact-point Z, connected with one pole of a battery, and from the opposite pole a wire runs to the opposite post of the bell X. By this arrangement the contact-points on the piston-rod will communicate that peculiar signal to the bell.

I claim as my invention—

1. In a fire-extinguisher of the class specified, the combination with a tank to hold an alkaline solution, of an acid-cup pivoted near its bottom in said tank and overbalanced in

one direction to swing on its pivot and discharge its contents when unsupported; a cover hinged to said cup: a cylinder attached to said tank internally connected at one end with said tank and intermediately with a jet-bearing pipe system, a piston in said cylinder arranged to pass the port leading to the pipe system, and a piston-rod connected with said piston and with the cover of the acid-tank and arranged to be held outward and support the acid-cup by the pressure in the jet-pipe system and to be forced inward by the weight of the acid-cup when the pressure in the pipe system is decreased, substantially as shown and described.

2. The combination with the alkali-tank and the system of jet-pipes, of the cylinder attached to said tank, and internally connected between its ends with the pipe system: the piston arranged to slide in each direction past the pipe connection: the acid-cup pivoted in said tank and overbalanced toward said cylinder: the cover hinged to the acid-cup: the piston-rod connected with the piston and cover, and a pipe connected with said cylinder in front of the piston and extending to near the bottom of the said tank, all con-

structed and arranged substantially as shown and for the purpose specified.

3. In a fire-extinguisher of the class designated, the combination with the gas-generating tank; and a cylinder in open connection with the interior of said tank, and a piston arranged to slide in said cylinder and be forced outward by the gas-pressure, of a piston-rod of insulating material, having a conducting-core in electrical connection with one post of an electrical bell, and having transverse connections at determined intervals with said core, and extending to the surface of the piston-rod; and battery having one pole in connection with the opposite post of said bell, and having its other pole in connection with a contact-finger arranged to engage the surface of said piston-rod in its movement, substantially as shown and described.

In testimony that I claim the above I hereunto set my hand.

JAMES L. BUTLER.

Witnesses:

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I. H. PHELPS.