G. BLENIO.

FIRE EXTINGUISHER.

APPLICATION FILED JAN. 27, 1919. RENEWED NOV. 18, 1920.

1,382,619. Patented June 28, 1921.

Fig. 1.

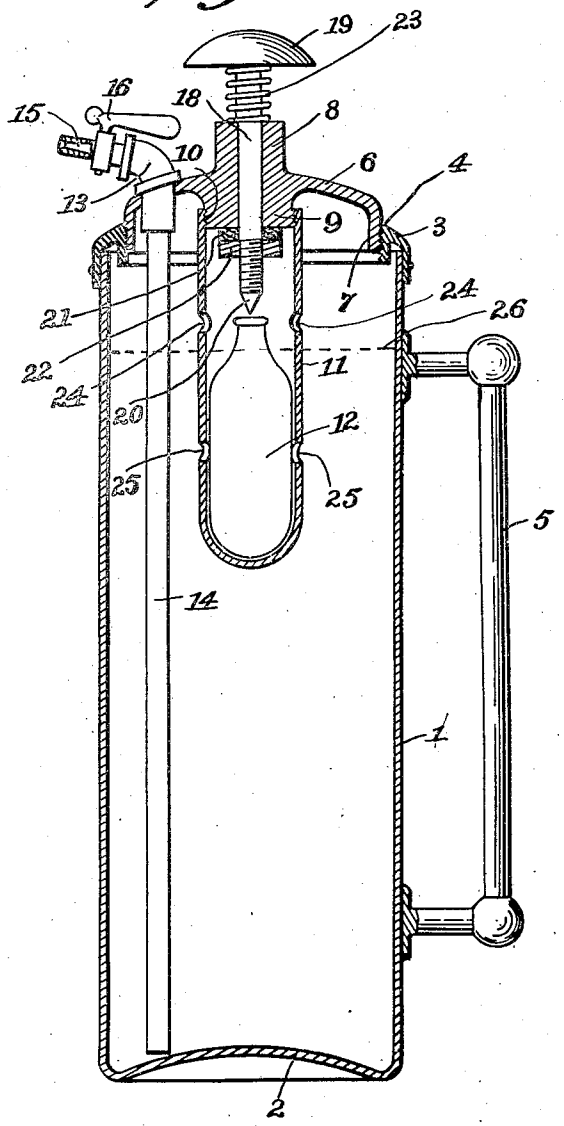
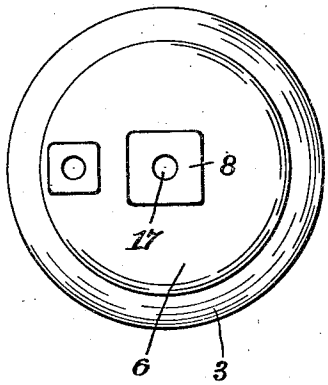



Fig. 2.




Guido Blenio Inventor.

A. P. Greeley
Attorney.

# UNITED STATES PATENT OFFICE.

GUIDO BLENIO, OF NEW YORK, N. Y., ASSIGNOR TO BLENIO PRODUCTS CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

## FIRE-EXTINGUISHER.

1,382,619. Specification of Letters Patent. Patented June 28, 1921.

Application filed January 27, 1919, Serial No. 273,412. Renewed November 18, 1920. Serial No. 425,032.

*To all whom it may concern:*

Be it known that I, GUIDO BLENIO, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to fire extinguishing apparatus and has for its object to provide a simple, efficient and inexpensive device for this purpose which will be always ready for use and can be set in operation instantly, requires no special skill to put in operation or to use and is adapted to be used with one hand. A further object of the invention is to provide a device of this character with the fewest possible number of parts, which will not get out of order and will, at all times be absolutely tight against leakage.

With these and other objects hereinafter explained in view my invention consists in the construction and combination of parts hereinafter described and claimed.

Referring to the drawings Figure 1 is a vertical central sectional view of a device embodying my invention and Fig. 2 is a top plan view with the rod 18 and head 19 removed.

In the drawings 1 indicates the container here shown as formed of metal in the form of a cylindrical vessel with fixed bottom 2. At its upper end the container is provided with a top 3 firmly secured to it and having a large central opening screw threaded at 4. This container may be provided with a handle 5 though for ordinary purposes it will be made of such size as to be readily grasped in the hand and no handle will be needed. This container is made sufficiently strong to withstand the pressure of gas as hereinafter described and may be made of heavy glass if preferred. If made of metal it is preferably coated on the inside with shellac or other material which will protect the metal against any corrosive action of the liquid in the container.

A head 6 is constructed to fit the opening in the top in which it is adapted to be secured by screwthreads 7 fitting the screwthreads 4. This head is arranged to carry all the operating parts of the extinguisher. It has on its upper side a central boss 8 which is adapted to receive a wrench by which the head may be screwed into place or unscrewed, and has on its under side a central boss 9 screwthreaded on its exterior at 10 to receive the upper end of a receptacle 11 adapted to hold a capsule 12 as hereinafter described. The head 6 also has at one side of the bosses 8 and 9 a small opening in which is screwthreaded the lower end of an elbow 13 into the lower end of which is secured the upper end of a pipe 14 which extends nearly to the bottom of the container, and into the outer end of the elbow is secured a spraying nozzle 15 having controlling valve 16.

The head 6 is bored out centrally at 17 the bore extending through the bosses 8 and 9 and through this bore 17 extends a rod 18 provided on its outer end with a head 19 and having its inner end screwthreaded and terminating in a pointed end 20. On the rod 18 below the boss 9 is a washer 21 of cork or leather which is held in place by a nut 22 which is screwthreaded to fit the screwthreads of the rod.

Between the head 19 of rod 18 and the top of the boss 8 is arranged a spring 23 which acts to force the rod normally upward and to hold it in such position in order to keep the pointed end of the rod away from the capsule 12. The extent to which the rod may be forced outward by the spring is determined by the position of the nut 22 and the washer 21 and by screwing the nut up or down on the rod the position in which the point of the rod is held may be regulated.

The lower end of the boss 9 is faced off so that the washer 21 will fit closely against it and make with it a liquid and gastight joint.

The receptacle 11 for the capsule 12 is provided in its sides with openings 24 and 25, the upper openings 24 being arranged substantially in line with the upper end of the capsule 12 and the openings being one opposite the other so that by looking through them the position of the point 20 relative to the upper end of the capsule may be seen and such adjustment made as may be desirable.

The capsule 12 is of the usual construction of capsules for holding liquefied or highly compressed carbonic acid gas or other gas or air, the top of the capsule being adapted, as is usual, to be pierced or broken by the point 20 to release the gas.

In use the container 1 is filled to about the line 26 with the fire extinguishing

liquid which is preferably trichlorethylene ($C_2HCl_3$) which I have found to be superior for fire extinguishing purposes to the carbon tetrachlorid commonly used in hand fire extinguishers, for the reason among others that it does not attack metal and is a more effective non-conductor of electricity, a fact which is of importance if a fire in which electric light wires or other wires carrying high currents are involved the stream of liquid from a fire extinguisher sometimes forming a path for the current to the injury or even death of the person using the extinguisher. Trichlorethylene is also somewhat less expensive than carbon tetrachlorid which, however, may be used in my device above described particularly if the interior of the container 1, if of metal, is coated with shellac as above suggested or with a solution of glue to which a small amount of glucose or glycerin has been added, or with pyroxylin or any other coating which will not be affected by carbon tetrachlorid.

When the container has been filled as described, to the line 26, a filled capsule 12 is placed in the receptacle 11 and the receptacle is screwed into place on the boss 9, the rod 18 being previously adjusted by screwing the nut 22 up or down as may be necessary. The head 6 carrying the capsule in the receptacle 11 and the pipe 14 is then inserted in the opening in the top 3 and screwed to place by means of a wrench applied to the boss 8. The extinguisher may then be put in its rack or other place close at hand for use if needed. When needed to extinguish a fire a blow of the hand on the head 19 drives the pointed end 20 of rod 18 downward against the resistance of spring 23 piercing the soft end of the capsule. The spring at once acts to withdraw the point 20 so as to permit free escape of the gas which flows into the space above the liquid creating a high pressure. The valve 16 may be opened either before or after the capsule is pierced. When the valve is opened the pressure of the gas drives the liquid in the container up through the pipe 14 and out through the nozzle 15 which is made as shown with an interior taper so that the liquid discharged through it will be sprayed instead of being discharged in a solid stream.

The nozzle 15 is arranged as shown at an angle pointing slightly upward so that when the container is inclined so as to direct the stream from the nozzle horizontally or downward, the last of the liquid will be brought directly under the end of pipe 14 so that practically all of it will be forced out before the gas can reach the end of the pipe.

The container 1 may be made of any size desired but as above pointed out is particularly useful where made of such size that it may be grasped in one hand and the stream of liquid thus directed by one hand against the fire leaving the other hand of the user free to pull or push inflammable or other articles away. By reason of this adaptability for one hand use without need for use of the other hand except for an instant to drive the head 19 down, the device is particularly useful on aeroplanes as well as for household and other general use.

All of the operating parts being carried by the head 6 can be readily gotten at for such attentions as they may need at any time. The washer 21 being held against the face of the boss 9 by the spring prevents any evaporation when the charged device is not in use and prevents any escape of gas around the rod 18 thus insuring that the full force of the gas will be utilized to force the fire extinguishing liquid out.

In case a first blow on the head 19 should not fracture the end of the capsule a second blow may be struck on it thus insuring a full opening of the capsule which is not always secured where a screw rod is used.

The washer 21 should not be of rubber, particularly if carbon tetrachlorid is used in the device because of the solvent action of carbon tetrachlorid on rubber. It is preferably of cork but may be of leather.

Having thus described my invention what I claim is—

In a pressure operated fire extinguisher the combination of a container and a head adapted to be secured in the upper end of the container, having a central exterior boss and a central interior boss, a capsule receptacle, removably carried by the interior boss, a rod extending through the bosses having a head on its outer end and having its inner end screwthreaded and pointed, a spring between the headed end of the rod and the outer boss, a washer on the inner end of the rod adapted to seat against the inner face of the interior boss, and a nut on the rod for adjusting the position of the washer.

In testimony whereof I affix my signature this 25th day of January, 1919.

GUIDO BLENIO.