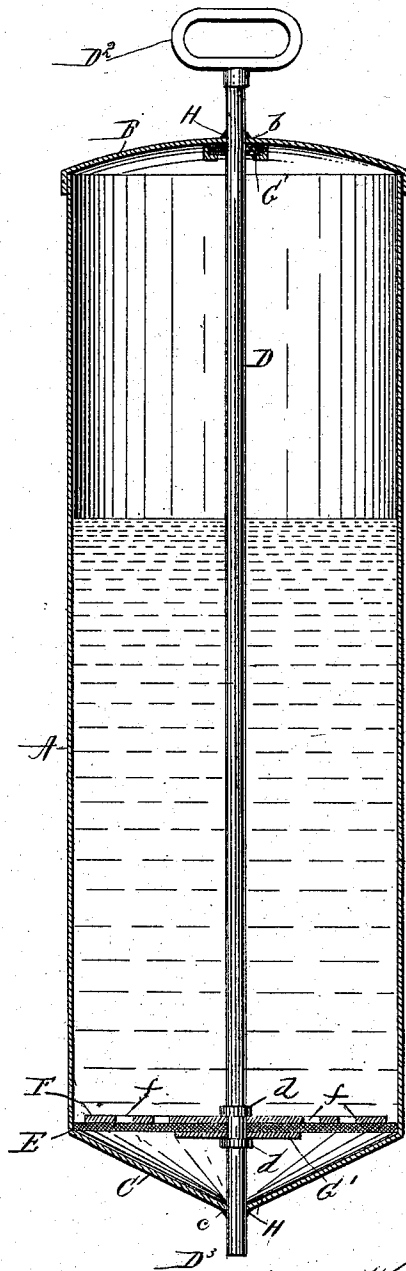


(No Model.)

W. R. JOHNSTON.
FIRE EXTINGUISHER.

No. 558,959.

Patented Apr. 28, 1896.



WITNESSES:

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WALTER ROBERT JOHNSTON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO CHARLES R. ARENTS, OF BROOKLYN, NEW YORK.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 558,959, dated April 28, 1896.

Application filed August 13, 1895. Serial No. 559,125. (No model.)

To all whom it may concern:

Be it known that I, WALTER ROBERT JOHNSTON, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which
10 similar letters of reference indicate corresponding parts.

This invention relates to fire-extinguishers; and the object thereof is to produce a small portable device of this class which shall be
15 capable of holding a suitable chemical compound and be ready to quickly expel the same when necessary; and with this and other objects in view the invention consists in the construction, combination, and arrangement
20 of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, which represents in central vertical section my improved fire-
25 extinguisher.

In the practice of my invention I employ a cylindrical casing A, which is preferably composed of thin sheet metal and provided with an end piece B at one end, which may
30 be secured thereto by any suitable means or in any suitable manner, and the opposite or delivery end of the casing A is provided with a cap or cover C, which is preferably conical in form and provided with an aperture *c*, in
35 which fits a rod D, the end of which projects from the end of the cylinder. The rod D passes entirely through the casing or cylinder A and projects through an opening *b* in the end piece B, and it is provided with a suitable handle D². The rod D carries a suitable
40 washer or valve E, which is composed of leather, rubber, or other material which will not be affected by the chemical compounds and which fits snugly within the casing A, and mounted on said rod and at the inner
45 side of said washer or valve is a perforated disk F, against which the washer E is held by means of a plate G' and a nut *d*, and the disk F is smaller in diameter than the washer E.

50 Secured to the inner surface of the end piece B is a packing-ring G', which is held in place in any desired manner and is composed of any preferred material, and this construction

is for the purpose of securely packing the rod D at the point where it passes through the end piece B, so as to prevent the escape of the compound through said end piece in the operation of the rod D, as hereinafter described.

In the normal position of the parts, when the cylinder A has been filled with the required compound, the rod D lies in the apertures *b* and *c*, as shown in the drawing, and is secured by light solder H at both ends, while the washer or valve E lies against the
65 cover C or the base thereof.

When it is desired to use the extinguisher, the device is taken in the hand, and the end D³ of the rod D is given a quick knock, either by striking the same on a desk, on the floor
70 or other surface, or by striking the end of the rod at D³ with a hammer, so as to loosen the solder G at both ends and at the same time, when the device will be ready for use.

In operation the rod D is drawn quickly outward by the handle D², and during this movement the washer or valve E bears against the fluids in the casing or cylinder, and its edges bend to allow the fluids to pass into the outer end of the cylinder, as will be
80 readily understood, and the rod D is then pushed quickly forward or in the direction of the discharge end of the cylinder, and the washer or valve will force the fluids from the casing through the opening *c*. In this operation the fluids pass around the disk F and through the projections *f* therein, as will be readily understood, when the rod D is drawn
85 backwardly, and said rod may be operated as quickly or rapidly as desired, and the contents of the cylinder may thus be forced out in small jets or small quantities. The compound employed is such that only a small quantity need be forced out at a time, and a small amount thereof is sufficient to put out
95 an ordinary fire at the start, said compound expanding into a gas which extinguishes the fire.

As thus constructed it will be seen that the rod or handle D is always in position for use, and there is no danger of its being lost, and it will also be seen that my improvement may be used as a sprayer, as a hand-pump, and for other purposes than those of a fire-extinguisher.

The disk F in the washer E constitutes, as

will be seen, a compound valve and piston through which a part only of the contents of the casing pass when the rod is drawn backward and by means of which the said part of the contents is forced out of the cylinder when the rod is pushed forward.

In my invention the end piece B is closed or has no opening whatever except that through which the rod D passes, and because of this fact and the fact that a partial vacuum is formed within the casing as the contents thereof are discharged it is practically impossible to force all of the contents from the cylinder at one operation, and by means of this fact only small quantities can easily be ejected at a time, and this feature constitutes one of the most important elements of my invention.

The flexible washer or valve E projects far enough beyond the perimeter of the disk F to allow it to bend backwardly over said disk when the rod and disk are forced forward in the operation of the device, and this operation of the washer allows a small amount of the fluid to pass backwardly into the body of the casing at each forward plunge of the rod and disk, and this operation also aids in limiting the amount of the fluid ejected at each stroke; and one of the objects in hermetically sealing each end of the rod or the openings through which it passes is to absolutely protect the chemical compound which I employ, which is of high expansive power, but loses its force by evaporation unless so protected, the expansion thereof occurring at the contact thereof with fire.

Having fully described my invention, its construction and operation, I claim as new and desire to secure by Letters Patent—

1. In a fire-extinguisher, the combination of a cylindrical casing, provided with a closed end piece, at one end, and a conical cap or cover at the other, the apex of which is directed outwardly, a rod which passes centrally through said casing, and through said end piece, and said cap or cover, and projects at each end, one end of said rod being provided with a handle, and the other end being adapted to project through the conical cap or cover, said end piece adjacent to the handle end of the rod, being provided with a packing through which said rod passes, and each end of said rod being secured in place by means of solder, said rod being also provided at the end adjacent to the conical cap or cover with a disk which is secured thereto, and of less diameter than the casing, and with a flexible washer or valve which is also secured thereto, adjacent to the outer side of said disk, and which is adapted to snugly fit the inner side of the casing, substantially as shown and described.

2. In a fire-extinguisher the combination of a cylindrical casing, provided with a closed end piece, at one end, and a conical cap or cover at the other, the apex of which is directed outwardly, a rod which passes cen-

trally through said casing, and through said end piece, and said cap or cover, and projects at each end, one end of said rod being provided with a handle, and the other end being adapted to project through the conical cap or cover, said end piece adjacent to the handle end of the rod, being provided with a packing through which said rod passes, and each end of said rod being secured in place by means of solder, said rod being also provided at the end adjacent to the conical cap or cover with a disk which is secured thereto, and of less diameter than the casing, and with a flexible washer or valve which is also secured thereto, adjacent to the outer side of said disk, and which is adapted to snugly fit the inner side of the casing, said disk being also perforated, and said disk and said washer being held together by means of a plate secured to said rod adjacent to the outer side of said washer, substantially as shown and described.

3. In a fire-extinguisher, the combination of a cylindrical casing, one end of which is provided with a conical cap or cover, the apex of which is directed outwardly, and the other end of which is provided with a closed end piece, of a rod which passes centrally through said end piece and through said conical cap, or cover, and is provided with a handle adjacent to said end piece, and which is held in place by soft solder, or similar material, at each end, said rod being provided with a disk adjacent to the conical cap or cover, which is of less diameter than the casing, and with a flexible washer or valve secured thereto, on the outer side thereof, said washer or valve being adapted to closely fit within the casing and to bend outwardly when the disk is drawn inwardly, substantially as shown and described.

4. In a fire-extinguisher, the combination of a cylindrical casing, one end of which is provided with a conical cap or cover, the apex of which is directed outwardly, and the other end of which is provided with a closed end piece, of a rod which passes centrally through said end piece and through said conical cap, or cover, and is provided with a handle adjacent to said end piece, and which is suitably held in place, at each end, said rod being provided with a disk adjacent to the conical cap or cover, which is of less diameter than the casing, and with a flexible washer or valve secured thereto, on the outer side thereof, said washer or valve being adapted to closely fit within the casing and adapted to bend outwardly when the disk is drawn inwardly, and said disk being also perforated, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 12th day of August, 1895.

WALTER ROBERT JOHNSTON.

Witnesses:

L. M. MULLER,
A. F. WATTS.