W. LAWRENCE.

FIRE EXTINGUISHER.

APPLICATION FILED MAY 8, 1915.

1,168,015. Patented Jan. 11, 1916.

Fig. 1.

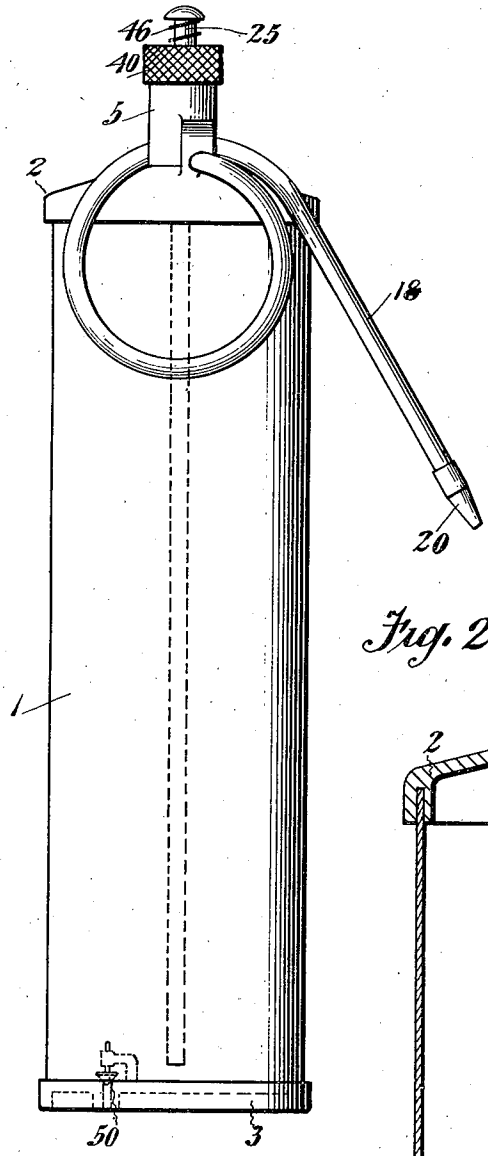


Fig. 3

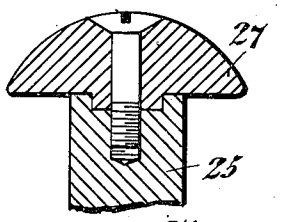
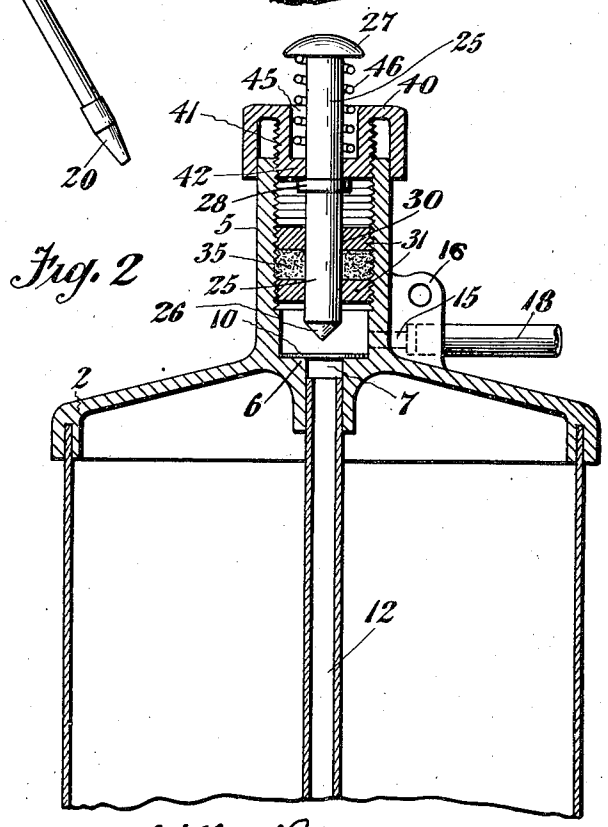


Fig. 2



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UNITED STATES PATENT OFFICE.

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FIRE-EXTINGUISHER.

1,168,015. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed May 8, 1915. Serial No. 26,778.

To all whom it may concern:

Be it known that I, WILLIS LAWRENCE, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

The present invention relates to the type of fire extinguishers in which the extinguishing liquid is held in a container under pressure and released at the moment of use by piercing a pressure retaining disk suitably mounted in the extinguisher head.

The object of the present invention is to simplify and improve this type of extinguishers and provide means whereby an unused portion of the extinguisher charge can be conserved, and to this end I provide a fire extinguisher head with a combined valve and piercing member retained in its inoperative position in an adjustable portion of the head, by means of a suitable spring, whereby in one position of said adjustable portion, said piercing member can be forced against the action of its spring to penetrate the pressure retaining disk, and in another position be firmly held in the penetration or opening in the disk to act as a valve to retain the unused portion of the charge under pressure.

In order that my invention be fully understood, I will first describe the same with reference to the accompanying drawing and afterward point out the novelty more particularly in the annexed claims.

In said drawing,—Figure 1 is a side elevation of my improved fire extinguisher. Fig. 2 is an enlarged vertical sectional elevation of the upper portion of the same. Fig. 3 is an enlarged detail sectional view of the part of the combined disk-piercing and valve member.

1 is the extinguisher body or container made in the usual way with the flanged top and bottom members 2 and 3 secured to the side walls to form a gas tight receptacle. The top member 2 is formed with integral tubular head 5 in the bottom of which is provided an annular shoulder 6 surrounding a central passageway 7 leading downwardly into the container 1. Resting upon the shoulder 6 is a disk 10 of some soft metal such as copper or brass. The disk 10 is secured in place over the passageway 7 by means of soldering or any other suitable means that will form a gas tight joint in the passageway 7. A tube 12 is mounted in the passageway 7 and extends downwardly into the container body 1 nearly to the bottom thereof.

Leading from the tubular recess of the head 5 just above the seat for the disk 10 is a discharge port or passage 15 formed through the laterally projecting lug 16 of head 5, and suitably secured to the lug 16 in free communication with the discharge port 15 is a flexible discharge pipe 18 having a suitable nozzle 20.

25 is the combined piercing and valve member in the form of a stout rod or pin formed with a pointed conical lower end 26 and with an enlarged striking head 27. This member 25 is mounted in the central openings 30 of the bearing nuts 31 which are screwed into the interior threaded opening of the head 5, said nuts 31 confining between them a suitable packing material surrounding member 25 as indicated at 35.

40 is an adjustable member in the form of a nut having the threaded portion 41 engaging the threaded interior of the head 5 and formed with a central opening 42 through which the member 25 passes. An annular collar 28 formed upon the member 25 engages the inner face of the member 40 for limiting the outward movement of member 25 in member 40. The adjustable member 40 has a central recess 45 in which is seated an expansive spring 46 confined between the inner wall of member 40 and the head 27 of member 25 and serving to hold the member 25 in its normal retracted position in readiness for use.

Container 1 may be charged with any fire extinguishing liquid under pressure in the usual manner. I have indicated in dotted lines at 50 a valved opening in the bottom of container 1 by which the compressed charge can be introduced into the container. I prefer to employ the well known carbon-tetrachlorid as the extinguishing compound but any of the well known materials may be employed.

Assuming that the extinguisher has been properly charged and that the parts are in the position shown in Fig. 2 of the drawings, it will be understood that in using the extinguisher, the operator strikes the head 27 of pin member 25 a blow with his hand sufficient to penetrate the sealing disk 10. Immediately after the blow is struck, the spring 46 returns the pin member 25 to its

inoperative position and allows the escape of extinguishing liquid up through tube 12 and into and out of the discharge pipe 18 by which it can be directed upon the fire. If the fire is extinguished before the container is emptied, the operator screws down the member 40 until the conical end of pin member 25 firmly seats in the perforation formed in the sealing disk 10, the engagement of the nut member 40 with collar 28 serving to force the member 25 into intimate engagement with the disk. The extinguisher is held in upright position when in use.

I claim:

1. A fire extinguisher comprising a container having a tubular head provided with a discharge passage, a sealing disk in said head normally closing communication between the container and discharge passage, a disk-piercing valve member movably mounted in said head and adapted to be forced into piercing engagement with said disk, and means for retaining said valve member in sealing engagement with the pierced disk.

2. A fire extinguisher comprising a container having a tubular head provided with a discharge passage, a sealing disk in said head normally closing communication between the container and discharge passage, an adjustable member on said head, a disk piercing valve member movably mounted in said adjustable member, and having means of engagement therewith to limit its movement in one direction, whereby said valve member can be employed for piercing the sealing disk and for sealing the opening therein.

3. A fire extinguisher comprising a container having a tubular head provided with a discharge passage, a sealing disk in said head normally closing communication between the container and discharge passage, an adjustable nut having threaded engagement with said tubular head, a disk-piercing valve member movably mounted in an opening in said nut in operative relation to said disk, a stop upon said valve member adapted to engage said nut to limit the outward movement of the valve member in the nut, and a spring confined between said nut and the valve member to yieldingly retain the valve member in its outer position.

4. A fire extinguisher comprising a container having a tubular head provided with a discharge passage, a sealing disk in said head normally closing communication between the container and discharge passage, an adjustable nut threaded on said head, a packed bearing in said head, a disk piercing valve member movably mounted in said adjustable nut and bearing, and having means of engagement with said nut to limit its movement in one direction, whereby said valve member can be employed for piercing the sealing disk and for sealing the opening therein.

WILLIS LAWRENCE.