

(No Model.)

W. GEE.
FIRE EXTINGUISHER.

No. 502,186,

Patented July 25, 1893.

Fig. 1

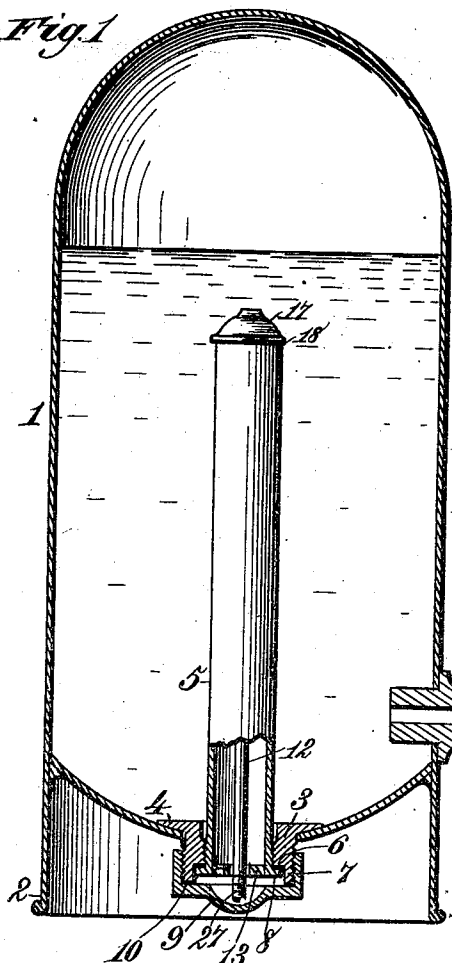


Fig. 3.

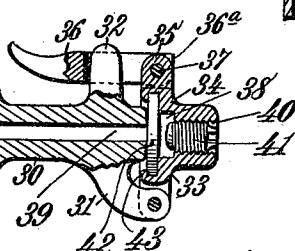
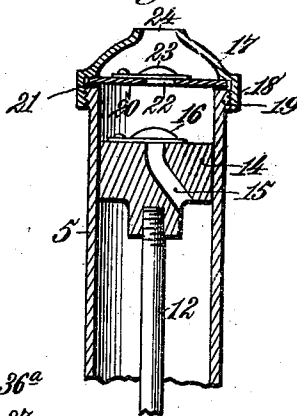


Fig. 4.

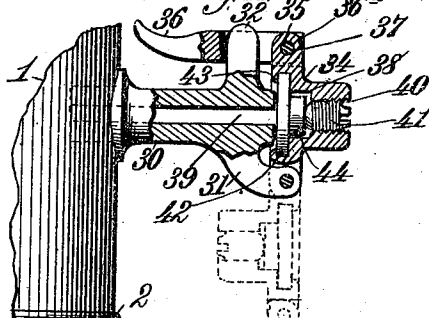


Fig. 2.

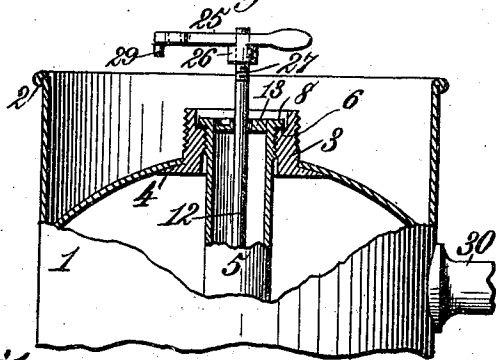


Fig. 5.



Fig. 6.

Inventor:
William Gee.
By: *James L. Norris*

Witnesses:
Robert G. Smith
W. B. R.

UNITED STATES PATENT OFFICE.

WILLIAM GEE, OF NEW YORK, N. Y.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 502,186, dated July 25, 1893.

Application filed December 31, 1892. Serial No. 456,932. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GEE, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

My invention relates to fire-extinguishing apparatus, and especially to that type thereof in which the extinguishing fluid is stored until such time as it may be required. As the periods of inaction are of uncertain duration and may be indefinitely prolonged, it is one of the purposes of my invention to provide a faucet, or outlet, for the containing-reservoir, having such construction that it will hermetically close the reservoir, without such resulting adhesion of the valve and valve-seat, or the corresponding parts of a faucet, as will obstruct, or sensibly impede, the ready opening of the faucet, or outlet, and the immediate and free delivery of the extinguishing-fluid.

It is a further purpose of my said invention to provide an apparatus of the type specified, in which the interior pressure upon the extinguishing-fluid shall be produced, when the apparatus is charged and prepared for use, by means of a pump arranged in and wholly inclosed by the containing-vessel, or reservoir, whereby a material economy of space is obtained and all troublesome appendages removed from the exterior of the container; the discharge-end of the pump-cylinder being arranged within and between the ends of the container, or reservoir, and provided with a suitable exit-opening which is covered by the extinguishing-fluid when the containing-vessel is in its normal position; thereby assisting in preventing the loss of pressure during prolonged periods of inaction, during which a valve exposed to the compressed air might become dry and shrink, or oxidize, or permit a small air-escape by reason of other impairment, due to its exposure to air instead of fluid.

It is my purpose, finally, to provide a faucet, or outlet for fire-extinguishing apparatus having a permanent closing-device, consisting of a flexible disk having a suitable air-chamber in front of the same, whereby the pressure of the fluid in the container shall be sustained, wholly, or in part, by the elastic

body of air contained in said chamber; said disk being held by a swinging, or pivotally mounted gate, held by a latch, hook, or catch against the mouth of the outlet, whereby the pressure of the fluid in the containing-vessel will assist in detaching the disk, to produce an immediate flow upon detaching the catch, or latch.

My invention consists, to these ends, in the several novel features of construction and new combinations of parts hereinafter fully set forth and then particularly pointed out and defined in the claims which follow and form part of this specification.

To enable those skilled in the art to which said invention pertains to understand and to practice the same, I will now describe said invention in detail, reference being had for such purpose to the accompanying drawings, in which—

Figure 1 is a central section of the containing-vessel, showing the inclosed pump partly in elevation. Fig. 2 is a partial section in the same plane, showing the manner of releasing the pump-piston and actuating the pump to create a suitable pressure within the containing-vessel, or reservoir. Fig. 3 is a detail section upon a slightly enlarged scale, showing the discharge-end of the pump-cylinder and its system of valves. Fig. 4 is a detail view of the faucet showing the position of the parts when the gate closing the same has been released by the disengagement of its latch, or catch, from the cam-lug holding it. Figs. 5 and 6 are detail views showing the construction of the device used in operating the piston of the pump, whereby said device may be used as a lever-wrench for unscrewing the pump-cylinder and removing it from the reservoir.

In the said drawings the reference-numeral 1 indicates the containing-vessel, which is preferably cylindrical in form and closed at both ends and provided, at its lower end, or base, with a flange 2, on which said vessel may rest.

In the bottom of the containing-vessel 1 is formed a central opening in which is inserted a bushing 3 having a collar 4 resting upon the inner surface of the base. In the said bushing is formed a female thread, lying in a countersunk, or slightly enlarged portion of

the depending neck, which lies below the base. Through the opening in said bushing is inserted a pump-cylinder 5, having upon, or near, its lower end a male thread which engages the thread in the bushing, the joint being packed by a gasket 6, of any suitable material, compressed between a shoulder at the bottom of a countersunk portion 7, and an outwardly turned flange or collar 8 on the end of the pump-cylinder. Upon the exterior face of said bushing is formed a screw-thread which provides means for the attachment of a cap 9, a second gasket 10 being placed therein and compressed against the circular edge of the bushing. Said cap serves both as a means for hermetically closing the bottom of the containing-vessel and as a support for the piston-rod 12 of the pump, after the interior pressure has been established.

The piston-rod 12 passes through the head 13 of the cylinder, and nearly to the upper end of the latter, when in the position shown in the drawings. At its upper, or inner end, it is provided with a piston-head 14, packed in the cylinder in any suitable manner and provided with an air-channel 15, passing through the piston-head and opening beneath a valve 16, which closes down upon the upper end of the piston-head and prevents downward passage through the channel 15. This valve may be of more than one kind, though I have shown a clack-valve in the drawings.

Upon the upper end of the pump-cylinder is mounted a terminal-cap 17, preferably connected by an interiorly threaded flange 18 on the cap, which is screwed upon the cylinder-end, an offset, or circular shoulder 19, being formed upon said cap to seat upon the edge of a disk 20, covering the end of the cylinder and compressing between the two a gasket 21. This disk has a perforation 22, closed by a valve 23. The terminal-cap 17 has an outlet 24 to permit air to pass into the interior of the containing-vessel.

The piston-rod 12 is operated by a handle 25, having a threaded boss 26, which screws upon the threaded end 27 of the piston rod. When thus attached the handle 25 serves as a means whereby the piston rod 12 may be reciprocated, as shown in Fig. 2 of the drawings. When it is desired to remove the pump cylinder 5, the handle 25 is unscrewed from the threaded end 27 of the piston-rod 12, and is so applied that the said threaded end will lie loosely in the opening 28 in said handle, while the lugs or projections 29 engage with or enter, suitable depressions sunk in the head, or end, of the cylinder. Thus, the end of the piston-rod 12 serves as a fulcrum for the handle or wrench 25 which operates somewhat like a spanner, whereby the cylinder may be screwed with suitable force into the bushing 3, and removed therefrom, when it is necessary to replenish the containing-vessel 1.

Projecting from one side of the containing-vessel 1, at or near its base, is a tubular nozzle, or outlet, 30, having upon its lower side near the discharge-end a downwardly and outwardly extending arm 31, and upon the upper, opposite side a substantially upright lug 32, having its upper end and rearward edge rounded for a purpose presently to be explained.

Upon the end of the arm 31 is pivotally mounted the forked end of an arm, or lug, 33, which forms part of a cap, or cut-off 34. Upon the upper, opposite side of said cap is formed a second arm 35, upon which is pivoted a latch, or catch, 36, which is shown to consist of a bifurcated end of such length as to receive the pivotal connection, or pin, 37, and to also straddle the upright lug 32 when said catch is dropped into the position shown in Fig. 1. In making this engagement the solid part of the catch rides, or moves, over the curved, rearward edge of the lug 32, which is sufficiently convex to act as a cam and draw the catch, together with the arm 35, forcibly toward the rear. The lug 32 is slightly curved inward, or concaved, upon its rear edge below the convex curve, to prevent the accidental displacement, or disengagement of the catch. The extremities of the forked portion of the arm 36 are preferably left rectangular, as at 36^a, to prevent the arm swinging too far outward.

The cap, or cut-off 34, is composed of a substantially circular body - portion, provided with an interior chamber 38, which is substantially concentric with the bore, or opening, 39, in the nozzle, or outlet. Entering this chamber from the outer end of the cap is a threaded opening 40 which is filled by a screw-plug 41, thereby making the chamber air-tight. Upon its opposite side the said chamber is closed by a flexible disk 42, preferably formed of rubber, though other suitable material may be used. Said disk is held in place by means of a narrow flange 43, which is turned, or spun down, upon the rearward face of the disk, to hold the same in place. This disk is so arranged as to impinge against the end of the nozzle and close the opening 39. The chamber 38 contains air which may serve as an elastic cushion, or backing for the disk, when the latter is forced against the end of the nozzle. In some instances, and especially when the disk has become worn, I may insert a solid cushion 44, of either metal, or other suitable material, thick enough to have contact with the end of the screw-plug 41, by adjusting which the wear of the disk may be compensated.

When it becomes necessary to discharge the fluid from the containing-vessel, the catch or latch 36, is simply thrown off the lug 32, whereupon the disk 42 will be at once thrown off the end of the nozzle, leaving the same open and insuring an immediate discharge of the extinguishing-fluid.

What I claim is—

1. The combination of a container having a hollow base, a pump-cylinder extending

through the bottom of the container and opening into the hollow base and into the container near its top, a valved piston, a stem attached thereto, a handle removably secured to the lower end thereof and which, when the piston is in its elevated position, is contained within the hollow base, and a cap for closing the cylinder and for supporting the piston-stem when the handle is removed.

10 2. A nozzle or outlet having in combination a cap pivotally connected thereto, a flexible disk in the cap and the said cap having an air-chamber forward of the disk, and means for securing the cap in place, substantially as described.

15 3. In a fire-extinguisher, the combination, with a container, of a nozzle or outlet consisting of a tubular portion, a cap pivotally connected to a downwardly and outwardly-extending arm on the tubular portion, the said cap having a chamber, a flexible disk in said cap between the said chamber and outlet of

the tubular portion, a latch pivotally connected to the cap, and a lug on the tubular portion, having a curved or cam-edge to engage with the latch, substantially as described.

4. In a fire-extinguisher, a removable handle for the piston-rod, said handle having a threaded opening to engage the threaded end of the rod and a second opening on one side of the threaded opening adapted to loosely engage the end of the rod, the part of the handle provided with such opening being also provided with lugs, or projections, to engage the cylinder-head and remove and replace the pump, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

WILLIAM GEE. [L. S.]

Witnesses:

BENJAMIN C. LEVERIDGE,
JOHN LEVERIDGE.