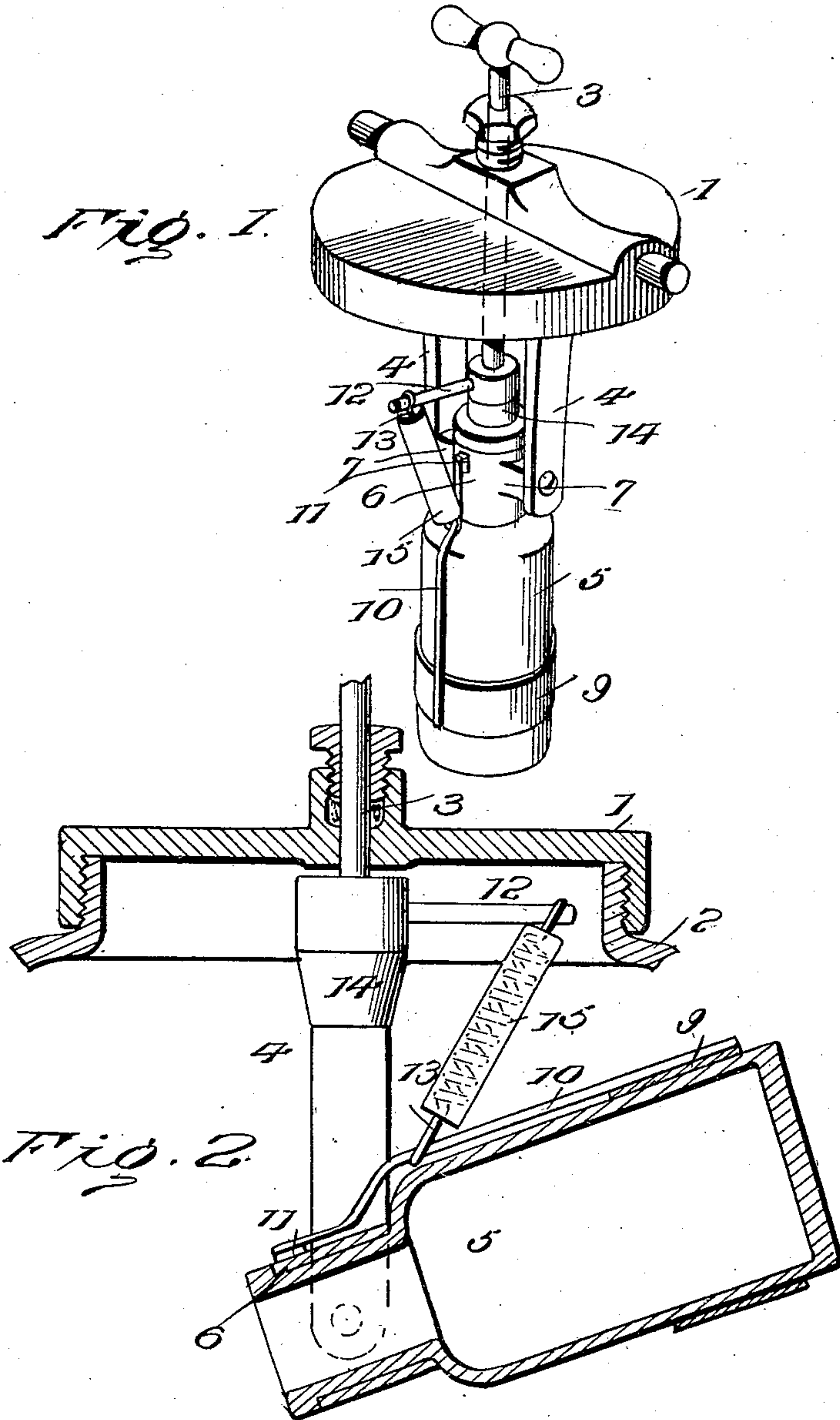


No. 860,779.

PATENTED JULY 23, 1907.

J. L. WILLIAMS.
FIRE EXTINGUISHER.
APPLICATION FILED NOV. 19, 1906.



Witnesses

J. L. Williams
W. R. Woodson

Inventor.
J. L. Williams
By *R. A. Mary*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN L. WILLIAMS, OF NEW HAVEN, CONNECTICUT.

FIRE-EXTINGUISHER.

No. 860,779.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed November 19, 1906. Serial No. 344,079.

To all whom it may concern:

Be it known that I, JOHN L. WILLIAMS, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have

invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

In portable fire extinguishing apparatus embodying an outer receptacle containing the extinguishing fluid and an inner receptacle containing a chemical, such as an acid, which when released, mixing with the fluid in the outer receptacle, creates an internal pressure sufficient to expel the extinguishing fluid and throw it in a stream or jet, difficulty has been met with in the successful and positive manipulation of the said inner receptacle both in turning the same to empty the contents and in returning the said inner receptacle to a normal position to admit of its removal to be recharged preliminary to priming the apparatus for further service after having been used.

This invention relates to fire extinguishing appliances of the character aforesaid and deals more particularly with the operating means for the inner receptacle, whereby the same may be turned to empty its contents and again restored to normal position.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a perspective view of the closure for the outer receptacle of the fire extinguisher illustrating the application of the invention. Fig. 2 is a vertical central section of the parts illustrated in Fig. 1, showing the closure fitted to the outer receptacle, a portion of the latter outlined and the inner receptacle being turned to a position to admit of emptying its contents.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The closure 1 may be a cap, or plug, according to the character of opening, provided in the outer receptacle 2 for its reception. An opening is formed in the central portion of the closure to receive an operating rod 3 which is provided at its outer end with a suitable handle, a stuffing box surrounding the opening through which the rod 3 passes to insure the formation of a tight joint between the closure 1 and said rod. Hangers 4 are pendent from the closure and may be a part thereof, or fitted thereto, said hangers supporting the inner receptacle 5 which contains the chemical, or gas pro-

ducing agent which when released and mixing with the liquid in the outer receptacle, sets up a chemical action, the result of which is to create an internal pressure for expulsion of the fire extinguishing liquid upon opening the outlet in the manner well understood.

The inner receptacle 5 is preferably of glass, although it may be constructed of any vitreous material so as to resist erosive action of the extinguishing fluid and the chemical. Said inner receptacle is pivotally supported at, or near, its upper end between the hangers 4 and is connected with the operating rod 3 to be tilted from a vertical to an approximately horizontal position and back again upon reciprocating movement of the operating rod.

In the preferable construction, the inner receptacle 5 consists of a glass bottle. A collar 6 is fitted about the neck of the bottle and is provided at diametrically opposite points with lugs, or enlargements 7, which receive the pivot fastenings 8 by means of which the collar is connected to the lower ends of the hangers 4. A band 9 encircles the lower portion of the bottle and a rod, or wire, 10 connects the collar 6 with the band 9 and is provided near its upper end with a stop 11. An arm 12 projects laterally from the lower portion of the operating rod 3 and a yielding connection 13 unites the arm 12 with the rod, or wire 10 and is normally under tension so as to exert a downward pull upon said operating rod to hold the stopper 14 at the lower end thereof within the neck of the bottle, or inner receptacle 5.

The lower end of the yielding connection 13 is joined to the rod or wire 10 in a way to admit of its slipping thereon between the stop 11 and the point of connection of said rod with the collar 6, whereby the best results may be obtained in the operation of the device to effect a turning of the bottle both from and back to the perpendicular. The yielding connection 13 preferably consists of a contractile spiral spring and the same is adapted to be stiffened in any manner to admit of restoring the bottle to normal position upon pressing the operating rod downward. While the spring 13 may be stiffened by any suitable means, yet it is preferred to employ a tube 15 the same being of a size to snugly encircle the spring and form a casing therefor. Upon pressing the operating rod 3 inward after the bottle has been turned from the perpendicular to an approximately horizontal position, downward pressure is transmitted from the arm 12 to the receptacle 5 by means of the tube 15, or like connecting means.

The bottle, or inner receptacle 5 is normally closed by the stopper 14 which may be of any suitable material to insure the formation of a tight closure. The stopper 14 is affixed to the lower end of the operating rod 3 in any manner so as to move therewith; hence the initial upward movement of the operating rod 3 loosens the stopper and withdraws the same from the

bottle, or receptacle, 5 and a continued upward movement of the operating rod causes the bottle, or receptacle, 5 to assume an approximately horizontal position so as to pour off, or effect discharge of its contents in the outer receptacle in which a pressure is created by the evolution of gas resulting from the chemical action of the contents of the inner receptacle mixing with the contents of the outer receptacle. Usual marble dust or bicarbonate of soda is mixed with the water in the outer receptacle, the same constituting the fire extinguishing fluid. A sulfuric acid is placed in the bottle, or inner receptacle, 5 and when said acid is discharged into the outer receptacle and mixes with the fluid thereof, carbonic acid is evolved and serves both to expel the fire extinguishing fluid and to commingle therewith and blanket or smother the flames.

The parts being assembled, substantially shown in Fig. 1 the bottle, or inner receptacle, 5 is in line with the hangers 4, or occupies a vertical position and is closed by the stopper 14, the spring 13 being under tension and exerting a down or inward pull upon the operating rod to prevent accidental displacement of the stopper. To use the appliance, the operating rod 3 is withdrawn, or moved upward by pulling upon the handle at the outer end thereof. As the rod 3 moves upward, the stopper 14 is withdrawn from the bottle, or receptacle 5, and the tension of the spring 13 is increased and the instant the stopper clears the bottle, the latter receives a quick movement due to the action of the spring 13 and a continued pull upon the operating rod throws the bottle, or receptacle, 5 to an approximately horizontal position, or slightly above the horizontal so as to insure the discharge of its contents, the latter mixing with the solution, or fire extinguishing fluid in the outer receptacle and producing a gas which increases the fire extinguishing properties of the fluid in the outer receptacle and also serving to expel the same by means of the internal pressure created. An inward movement of the operating rod 3 restores the bottle to normal position and admits of its safe removal with the closure 1 from the outer receptacle 2 when it is required to recharge both the outer receptacle and the inner receptacle. In both the outward and inward movements of the operating rod, the lower end of the part 13, by reason of its loose connection with the rod, or wire, 10, slides thereon as indicated most clearly in Figs. 1 and 2.

Having thus described the invention, what is claimed as new is:

1. In a fire extinguisher of the character specified, the combination of a receptacle for containing a chemical mounted to be turned from and toward the perpendicular, an operating rod provided with closing means for sealing the said receptacle, said operating rod having a laterally extended arm, and a yielding connection between the outer end of said arm and the receptacle, said yielding connection being normally under tension and having a relative sliding connection with the said receptacle.

2. In a fire extinguisher of the character specified, the

combination of a receptacle for containing a chemical mounted to be turned from and towards the perpendicular, an operating rod provided with a closing means for sealing the said receptacle, said operating rod having a laterally extended arm, a yielding connection between the outer end of said arm and the receptacle, and stiffening means for said yielding connection interposed between the said arm and the receptacle to insure return of the latter to normal position when moving the operating rod inward.

3. In a fire extinguisher of the character specified, the combination of a receptacle for containing a chemical mounted to be turned from and toward the perpendicular, an operating rod provided with closing means for sealing the said receptacle, said operating rod having a laterally extended arm and a yielding connection being normally under tension and having a relative sliding connection with the said receptacle and a tube encircling the yielding connection and forming a casing therefor and interposed between the aforementioned arm and the receptacle to insure positive application of force for restoring the receptacle to normal position when moving the operating rod inward.

4. In a fire extinguisher of the character specified, the combination of a pivotally mounted receptacle containing a chemical, an operating rod provided with means for closing said receptacle and having a laterally extended arm, a rod at one side of the receptacle and connected thereto and a yielding connection between the aforementioned arm and the said rod and slidable upon the latter as the operating rod is moved both outward and inward.

5. In a fire extinguisher of the character specified, a combination of a chemical containing a receptacle, a collar fitted to the upper portion thereof and having oppositely disposed enlargements, pivot supporting means cooperating with said enlargements, a rod projected from the said collar and arranged at one side of the receptacle, a slidable operating rod provided with means for closing the receptacle and having a laterally extended arm and a yieldable connection between said arm and the rod projected from the collar and loose upon said rod.

6. In a fire extinguisher of the character specified, a combination of a chemical containing a receptacle, a collar fitted to the upper portion thereof and having oppositely disposed enlargements, pivot supporting means cooperating with said enlargements, a rod projected from the said collar and arranged at one side of the receptacle, a slidable operating rod provided with means for closing the receptacle and having a laterally extended arm, a yieldable connection and a tube inclosing said yieldable connection and adapted to transmit positive pressure from the aforementioned arm to said rod for restoring the receptacle to normal position when moving the operating rod inward.

7. In combination a receptacle, a collar fitted to the upper portion of said receptacle, a band encircling the lower portion thereof, a rod connected at its ends to the said collar and band, pivot supporting means for the receptacle cooperating with the collar fitted thereto, a slidable operating rod provided with means for closing the receptacle and having a laterally extended arm, a yieldable connection between said arm and the aforementioned rod and stiffening means for said yieldable connection adapted to positively transmit force from the operating rod to the receptacle for restoring the latter to normal position when moving the operating rod inward.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN L. WILLIAMS.

Witnesses:

STELLA WILLIAMS,
CHAS. G. HARRISON.