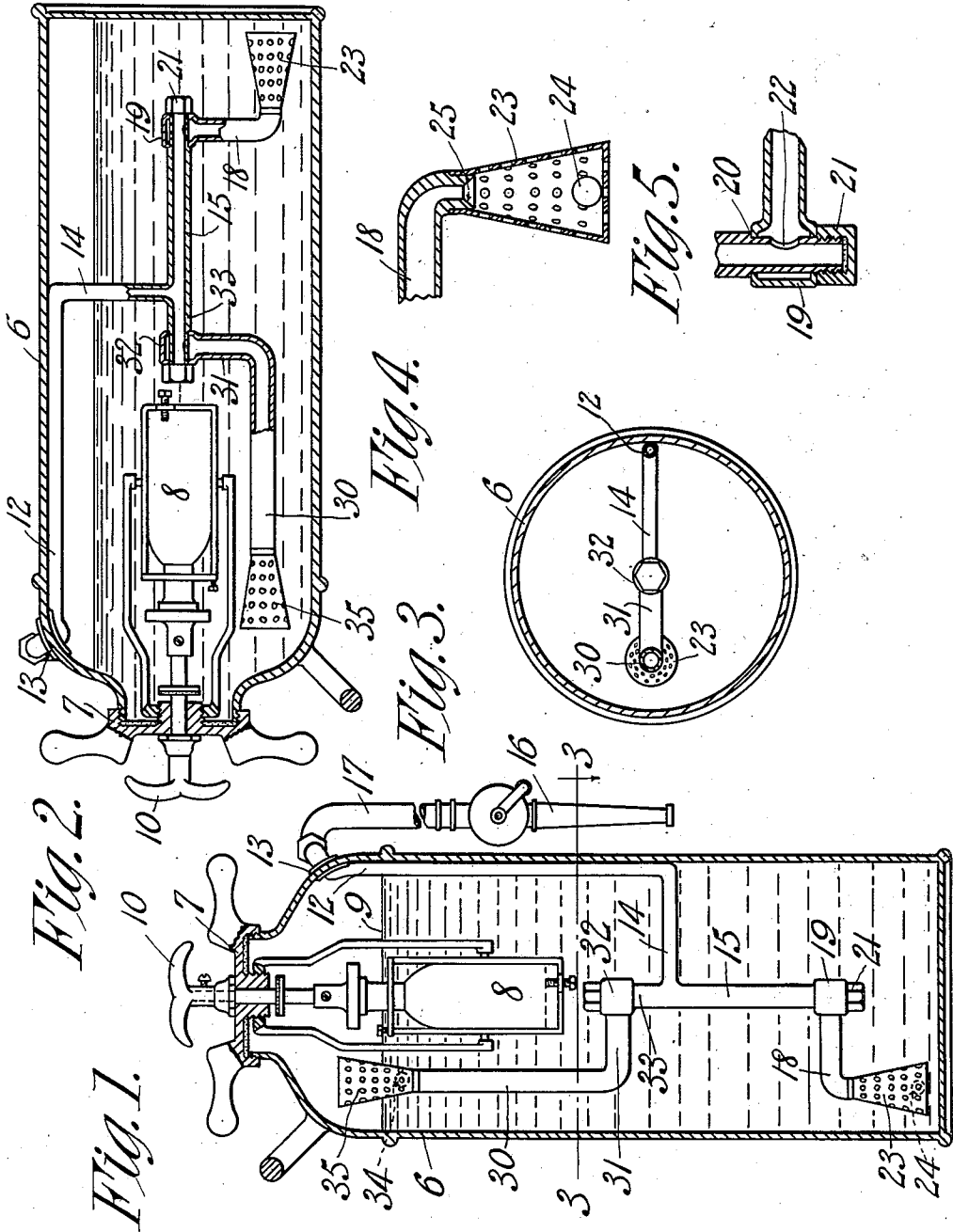


C. S. TAYLOR & E. W. JACKSON.  
 FIRE EXTINGUISHER.  
 APPLICATION FILED AUG. 14, 1912.

1,069,301.

Patented Aug. 5, 1913.



WITNESSES:  
*R. M. Morley*  
*W. P. Noble*

INVENTORS,  
*C. S. Taylor, and*  
*E. W. Jackson,*  
 BY *H. J. Bellman*  
 ATTORNEY.

# UNITED STATES PATENT OFFICE.

CHARLES S. TAYLOR AND ELIPHALET W. JACKSON, OF SPRINGFIELD, MASSACHUSETTS.

## FIRE-EXTINGUISHER.

1,069,301.

Specification of Letters Patent.

Patented Aug. 5, 1913.

Application filed August 14, 1912. Serial No. 715,027.

*To all whom it may concern:*

Be it known that we, CHARLES S. TAYLOR and ELIPHALET W. JACKSON, citizens of the United States of America, and residents of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a full, clear, and exact description.

This invention relates to portable fire extinguishers, especially of the chemical type which are partly filled with water and other fluids, and provided at one portion with a small container whereby upon operating a certain member, or sometimes by merely changing the position of the receptacle, the container will discharge its contents into the water to cause the rapid generation of gas under considerable pressure; which pressure of gas serves to force the water and liquid out from the container through a suitable nozzle whereby it can be directed as desired to extinguish a fire.

The object of this invention is to provide an outlet device leading into the receptacle and having two inlet portions, one opening into the receptacle at one end and the other at the opposite end of the receptacle; and each provided with a check valve arranged to close when such end is uppermost to prevent escape of the gas, while the valve in the inlet that is lowermost will open to admit the liquid to be discharged.

A further object of this invention is to provide a form of discharge member which has one or more inlet portions arranged to be shifted inside of the receptacle by gravity, whereby the inlet portions will always lie at the lower portion of bottom of the receptacle in whatever position the receptacle may be carried so that the inlet portion of the discharge member will be always immersed in the water or fluid and prevent escape of the gas under pressure until the liquid is practically all discharged.

In the accompanying drawings illustrating one embodiment of our invention:—Figure 1 is an axial section through the device in its upright position. Fig. 2 is a similar view with the receptacle turned over so that its axis lies horizontal. Fig. 3 is a transverse section on line 3—3, Fig. 1; Fig. 4 is a section enlarged, of the end portion of one discharge member; Fig. 5 shows, enlarged, a section through the swinging con-

nection of the outlet member with the stationary discharge conduit.

Our invention is shown as applied to a somewhat conventional form of extinguisher of this type, having a substantially cylindrical receptacle 6, the upper end of which is closed by a cover 7, depending from which is a small container 8 for the chemical which is submerged in the water in the receptacle shown as filled to the line 9. By operating the handle 10, or in some forms of extinguishers by merely inverting the receptacle, the container can be caused to discharge its contents into the water or water suitably charged, whereby gas under high pressure is generated and rises to the space above the liquid; it being understood that these parts form no feature of our invention, but any means for causing the generation of gas in the receptacle can be employed. As long as the receptacle remains in the upright position of Fig. 1, the water can be discharged through a suitable conduit having its inlet portion at the bottom of the receptacle to receive the water until it is practically all driven out by the gas; but in the use of such articles the firemen or other users frequently hold it in a horizontal position as indicated in Fig. 1, in which case the water will, of course, cause the gas to locate at the uppermost portion which is now at the part constituting one of the side portions of the receptacle; and to properly discharge all of the water in such position, the inlet to the discharge member should have its opening at the opposite portion of the receptacle, that is along the side that now lies at the lowermost portion.

As shown, we provide a discharge conduit 12 entering the receptacle at 13 at the top and passing down in contact with the side wall to a position below the chemical container 8, and there having a bend 14 extending to the middle or axial line of the receptacle 6. At this place a portion of the conduit extending in the axis of the receptacle and below the container 8 is provided with an outlet member which can shift its position by gravity so that upon the receptacle being turned over to the horizontal position, as indicated in Fig. 2, this outlet member will always lie at the lowermost portion of the receptacle and remain submerged in the liquid until the gas, under pressure, has driven practically all of it out

through its discharge member; the conduit 12 being connected with any suitable ejecting device, such as a nozzle 16 through a flexible hose 17. As shown, a pipe 18 has a kind of transverse socket 19 at its end into which extends the end portion of the conduit 15 whereby its pipe 18 can rotate on the conduit 15; the latter being reduced to form a shoulder 20 against which the head fits and is retained by a cap 21 screwed onto the threaded end of the conduit 15 to engage the head; the conduit being provided with one or more openings 22 providing admission to the pipe 18 in all positions to which the pipe 18 can swing. The outer end of the pipe 18 is shown as bent to extend toward the bottom of the receptacle and is provided with a kind of strainer box 23 in which is placed a suitable check valve, shown in the form of a ball 24 so that should the receptacle be entirely inverted and placed upside down, the ball could fall and seat itself on the curved extremity 25 of the pipe 18; from which arrangement it will be understood that in whatever position the receptacle may be placed with its axis horizontal, or even slightly inclined to the vertical line, this outlet member 18 will swing, by gravity, and bring its inlet end to the lowermost portion of the receptacle. Such an arrangement will serve to entirely empty the receptacle of the liquid, or until only a very small portion is left, should the container be placed on its side in any position of rotation, and in any position between such position and a vertical position; but should the receptacle be inverted or have its top lowered from its horizontal position, then this outlet member 18 would not serve to cause the discharge of all of the liquid in the receptacle. To overcome this defect we provide the check valve as set forth, which when the bottom of the container is brought uppermost or above the top, will fall to the seat and thereby close the outlet through the pipe 18 and the discharge member. The said conduit pipe 15 is extended in the opposite direction from the bend 14, and another outlet member is provided in the form of a pipe 30 having a bend 31 which is provided with a head 32 which may be similar to the head 19 to engage the upper extremity 33 of the conduit 15 whereby the portion 31 can swing by gravity on the pipe 13 as an axis and lie in all positions in a plane transverse to the axis, and at the same time will register with the conduit 15 and provide an inlet through the pipe 30 for the liquid in the receptacle.

It will be observed that the longitudinally extending pipe 30 is located at one side between the container 8 and the side of the receptacle as indicated in Figs. 1 and 2; and in the swinging of the portion 31, the part 30 of the pipe will shift its position, so

that in any position of the receptacle in which the axis is horizontal, as shown in Fig. 2, or any position somewhat inclined thereto, the pipe 30 will be brought to the lowermost portion of the receptacle at that time, as indicated in Fig. 2. This inlet pipe 30 is also shown provided with a check valve in the form of a ball 34 held by a strainer box 35; and in the normal position as shown in Fig. 1, this ball valve will close the opening into the pipe 30 and prevent escape of the gas in such position. But should the receptacle be inverted to bring the top below the bottom, this ball valve 34 will fall away by gravity and permit the water to enter the pipe 30; while the pipe 18 will now be at the upper part of the receptacle, and this ball valve 24 will seat itself to prevent escape of the gas. In the horizontal position in Fig. 2 both of the outlet members 18 and 30 will, of course, swing by gravity to the lowermost portion of the receptacle, and the liquid can pass in through each of these to be discharged by the nozzle. By reason of this construction, in any position whatsoever in which the receptacle may be placed, an outlet is provided at the lowermost portion only and communicates with the liquid, while no gas can escape until practically all of the liquid in the receptacle has been discharged; and, furthermore, such operation is entirely automatic and controlled by gravity to swing the outlet members to the proper position.

While the inlet members 18 and 30 are shown as pivoted to swing, they could be stationary, or fixed on the discharge pipe; that is, a direct continuation of the pipe 15 to both ends of the receptacle, and provided with a check valve in each end, as shown. In the use of such an arrangement, when either end of the receptacle is uppermost, the check valve will close in the inlet member that is uppermost, and the other one open to permit discharge of the liquid in the receptacle.

We claim:—

In a fire extinguisher, a receptacle, a container extending down into the receptacle from the top end, an outlet pipe entering the receptacle and extending across to the axis of the receptacle below said container, and there provided with two branches, one branch extending toward the container, a pipe pivoted to swing by gravity on said branch and communicating therewith in all positions, such pipe extending first outwardly and having a bend projecting into the space between the container and the side wall, through which annular space the pipe will swing by gravity to have its open end at the said top of the receptacle and at the lowermost portion when the receptacle is inclined from upright position, a valve in said open end of the pipe arranged to close in

the normal upright position of the receptacle, said other branch extending toward the base of the receptacle, and a pipe pivoted on the latter branch to swing by gravity and communicating with said branch in all positions, such pipe extending outwardly into proximity with the side wall of the receptacle with its open end located adjacent the base of the receptacle, such open end being provided with a valve ar-

ranged to close when the base of the receptacle is brought uppermost by inverting the receptacle.

Signed by us at Springfield, Mass., in presence of two subscribing witnesses.

CHARLES S. TAYLOR.  
ELIPHALET W. JACKSON.

Witnesses:

G. R. DRISCOLL,  
E. F. BURT.