The invention further has for its object to provide an improved portable fire extinguisher of this kind by means of which the fire extinguishing liquid contained in the casing may be readily discharged therefrom in case of fire.

The invention further has for its object to provide an improved portable fire extinguisher of this kind by means of which the fire extinguishing liquid may be efficiently discharged in whatever position the fire extinguisher may be held.

The invention is shown in the accompanying drawing in longitudinal section.

1 indicates in longitudinal section a suitable fire extinguishing liquid containing receptacle, as here shown, preferably consisting of an oblong metallic casing with a pipe 2 located within the same and extending from end to end thereof and having mounted on one end thereof a nozzle 3 projecting through one end of the casing 1, and formed with the chamber 4 at its inner end having a mouth 5 which is adapted to be closed by the ball valve 6 located in the chamber 4, and prevented from closing the nozzle 3 in the discharge of the liquid from within receptacle 1, by a pin 7 extending across the nozzle 3 adjacent to its contracted portion or neck, so that in the discharge of the liquid from receptacle 1, it can pass freely past the ball valve 6 resting against the pin 7. The end of the receptacle 1, opposite to that in which is located the nozzle 3, is closed by a plug or bushing 9 through which extends a piston rod 10 having on its outer end a handle 11 and on its inner end a piston 12, the rod 10 extending through the pipe 2, which serves as a cylinder and the piston 12 being movable longitudinally in the end of the cylinder 2 adjacent to the nozzle 3, and over a port or outlet opening 13 adjacent to one end of the cylinder 2.

To provide for the discharge of the liquid from the receptacle 1 in whatever position or angle the receptacle may be held, the following construction and arrangement of pipes and valves is employed. A pair of suction pipes 14 and 14' are located adjacent to and parallel with the cylinder 2, said pipes being mounted at one end on the valve casings 15 and 15' respectively secured to the cylinder 2 adjacent to its middle portion, and each of said pipes having its other end open, the open end of the pipe 14, being adjacent to the discharge nozzle end of the casing and the open end of pipe 14' being adjacent to the other end of the casing.

The valve casings 15 and 15' are connected by a short pipe 16 through which extends a rod 17 having connected to its upper end and lower end respectively ball valves 18. This rod is of such a length that when the valves are in the position shown in the drawings, the upper valve 18 will close the upper opening in pipe 16 and the lower valve 18 will be a slight distance above the upper end of suction pipe 14. The valves 18 and 18' each has a slight longitudinal play in its valve casing 15 or 15', and when one of the valves 18 and 18' closes one of the suction pipes 14 and 14', the other pipe 14 or 14' is open. It will be seen that by means of this construction that when the casing 1 is directed with the discharge nozzle downward, the valves 18 and 18' will be in the position shown in the drawings, the suction pipe 14 being open and communicating with the pipe 16 and the other suction pipe 14 being cut off from the pipe 16 by the valve 18' closing the upper end of the pipe 16.

When the container is used in an inverted position from that shown in the drawings the position of valves 18, 18' will of course be reversed and the liquid will be drawn up through pipe 14'. Again if the container should be used in an exactly horizontal position the liquid will be drawn in through both pipes 14 and 14'. It is of course assumed that sufficient liquid is in the liquid receptacle to feed to both pipes 14 and 14' when in horizontal position.

Mounted on the pipe 2 is a third valve casing 19, and connected at one
end thereof is the end of a pipe 20, the other end of the pipe 20 being connected with the pipe 16 between its ends. Connected with the other end of the valve casing 19 is one end of a pipe 21 being connected with the port 18 in the pipe 2. Located in the valve casing 19 is a ball valve 22 which is movable longitudinally therein and is adapted to close the open end or valve seat 23 in one end of casing 19 when liquid attempts to pass into pipe 20, and which permits the liquid to pass from pipe 20, being held from closing the open end 24 of casing 19 by a pin 25 adjacent thereto. The receptacle 1 is filled through a short neck on its inner end which is closed by a cap 26. The receptacle is provided with a suitable loop or handle 27 to hang it up with when not in use. The piston 12 when not in use is located in the position shown thereby, preventing the escape of any liquid through nozzle 3. In order to prevent any accidental discharge of the liquid by the piston being moved out of its normal position a suitable lock is provided as for example the cap or sleeve 28 mounted on the piston rod 10, and having bayonet joint slots 29 which are adapted to engage pins or projections 30 on the plug 9, and by turning the piston rod 10 through handle 11, cause the cap 28 to be interlocked with the plug 9 and thereby prevent the piston rod 10 from being drawn out of the cylinder 2.

The operation of the device is as follows: The receptacle 1 having been filled with fire extinguishing liquid through the neck closed by cap 26, and the parts being in the position shown, with the piston 12, serving as a valve to close the port 18, at one end of the pipe 21, the piston rod 10 is unlocked by turning it and is drawn out of the cylinder 2, thereby forming a suction, which causes the valve 6 to close, and the piston 12 passing away from port 18, opening the latter, which opens valve 22, draws down valve 18', thereby closing upper suction pipe 14' to pipe 16, and opening lower suction pipe 14 to pipe 16, and thereby allowing the liquid from the receptacle 1 to pass through lower suction pipe 14 to pipe 16. To discharge the liquid from receptacle 1, the piston rod is pushed into cylinder 2, which causes the valve 22 to close valve seat 23, and pipe 20, and the valve 6 to open, thereby freely discharging liquid through the nozzle 3. During the above described operation it is of course assumed that the nozzle end 3 is tilted slightly downwardly from the normal horizontal plane.

It will be seen that by means of this invention a double suction pipe construction is provided in connection with a cylinder and piston and alternately acting automatic valves whereby the device may be effectually operated in whatever position, or at whatever angle it may be held. Having described the invention, I claim—

A portable fire extinguisher of the kind described having a receptacle provided with a valved nozzle, a cylinder and piston, spaced valve casings to either side and adjacent the transverse center of said receptacle, an intermediate pipe connecting said casings, suction pipes connected to said casings, a rod working in said intermediate pipe and connecting said valves, and a valved pipe connected at one end to said cylinder adjacent said nozzle and at the other end to said intermediate pipe at a central point thereof, the valve in said pipe being designed to prevent a return flow through said pipe.

Signed at New York city this 5th day of January, 1911.

JOSEPH W. DURKEE.

Witnesses:

ALBERT FALK,
GROVER C. SNIFFEN.