No. 751,238. PATENTED FEB. 2, 1904.

F. YOST.

FIRE EXTINGUISHER.

APPLICATION FILED MAR. 26, 1903.

NO MODEL.

Fig. 1.

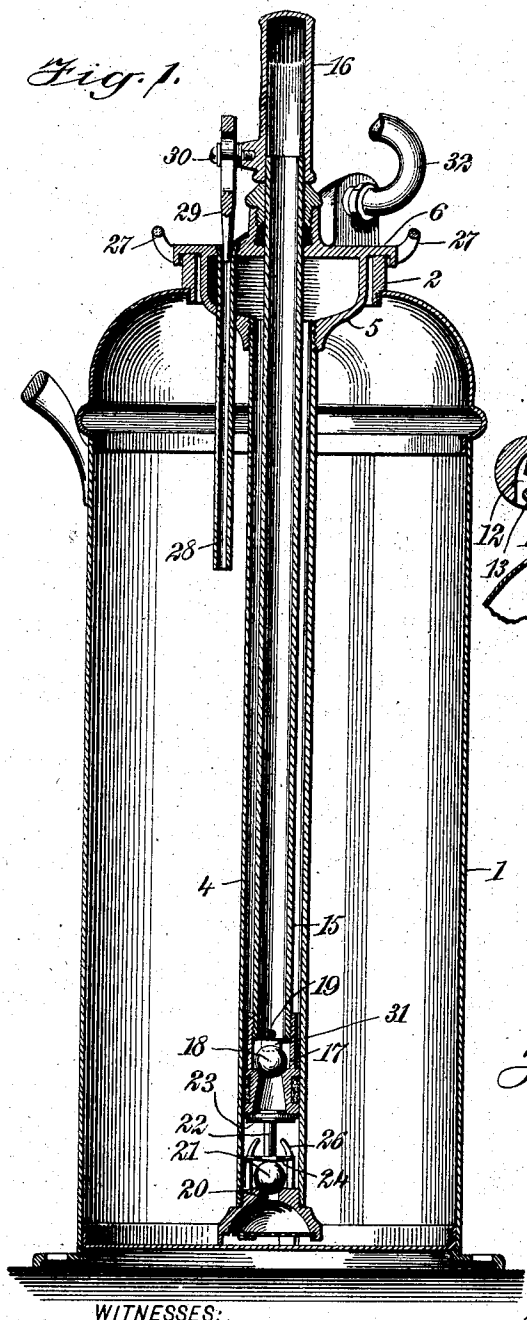

Fig. 2.

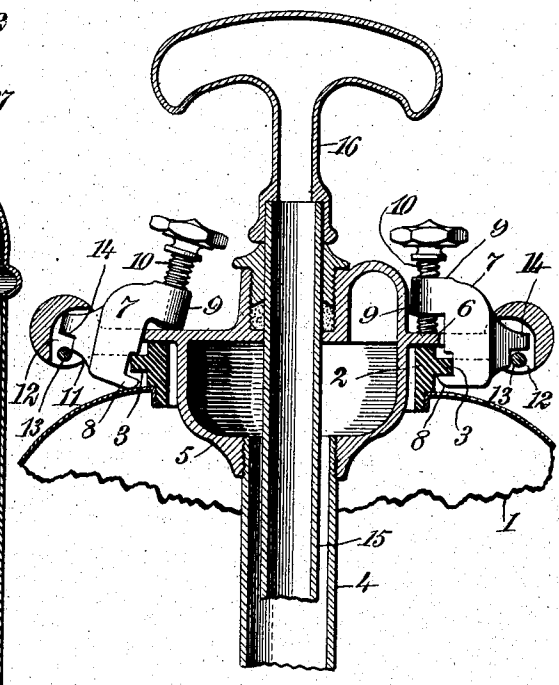

Fig. 3.

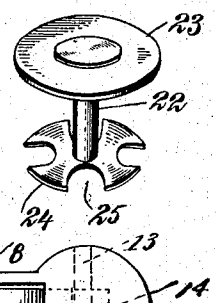

Fig. 4.

WITNESSES:

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No. 751,238. Patented February 2, 1904.

UNITED STATES PATENT OFFICE.

FERNANDO YOST, OF WEEHAWKEN HEIGHTS, NEW JERSEY, ASSIGNOR TO THE LITTLE GIANT FIRE EXTINGUISHER COMPANY, OF NEW YORK, N. Y.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 751,238, dated February 2, 1904.

Application filed March 26, 1903. Serial No. 149,647. (No model.)

To all whom it may concern:

Be it known that I, FERNANDO YOST, a citizen of the United States, and a resident of Weehawken Heights, in the county of Hudson and State of New Jersey, have invented a new and Improved Fire-Extinguisher, of which the following is a full, clear, and exact description.

This invention relates particularly to improvements in portable hand-operated extinguishers of the class designed to contain a fire-extinguishing chemical solution, an object being to provide clamping devices of novel form and operation for tightly holding the pump mechanism in place; and another object is to provide a piston-rod with a large air capacity, the confined air acting as a piston.

Other objects of the invention will appear in the general description.

I will describe a fire-extinguisher embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a fire-extinguisher embodying my invention. Fig. 2 is a section of the upper portion of the extinguisher, clearly showing the clamping devices. Fig. 3 is a perspective view of the valve-holding device employed, and Fig. 4 is a fragmentary plan view.

Referring to the drawings, 1 designates the reservoir for containing the extinguishing liquid. This reservoir is provided with a ring 2, which forms the neck portion at the top, and on opposite sides of this ring are outwardly-extended lugs 3.

The pump comprises a cylinder 4, which extends nearly to the bottom of the reservoir, and at its upper end it is connected with a casing 5, the interior of which forms a chamber to receive the liquid. The top of this casing has an outwardly-extended annular flange 6, which engages on top of the ring 2, and as a means for clamping the pump in position I employ clamping devices consisting of blocks 7, which have inward-projecting lugs 8 for engaging underneath the lugs 3, and at the upper portion are inwardly-extended flat portions 9, in which clamping-screws 10 engage, said clamping-screws being designed to press upon the top of the flange 6. These blocks 7 are mounted to swing between arms 11, extended outward from the upper portion of the pump-cylinder, and arranged within a recess 12 in the outer ends of the arms are pins 13, which form a fulcrum for the clamping-blocks. As here shown, each clamping-block has an outward projection or shoulder 14 for engaging with this fulcrum. In the operation after placing the pump in position the lugs 8 of the clamping devices are to be passed underneath the lugs 3 and then by tightening the screws 10 the clamping-blocks will be swung upward on the pins 13 and at the same time they will be swung slightly inward, causing the lugs 8 to engage tightly against the under sides of the lugs 3.

Operating in the cylinder 4 is a tubular piston-rod 15, which is designed to contain air, which serves as a piston for forcing the liquid through the pump, and to obtain as large an air-chamber as possible I provide a hollow handle 16, which is secured to the upper end of the piston-rod and forms a continuation of the chamber within the rod.

At the lower end of the rod 15 is a valve-casing 17, in which a ball 18 is arranged. This ball-valve is prevented from moving into the tubular piston-rod by means of a screw-pin 19.

In the lower portion of the pump-cylinder is a valve-seat 20, on which a ball-valve 21 rests. As a means for holding the valve 21 tightly against its seat when the device is not in operation, and thus prevent evaporation of the liquid, I provide a holding device consisting of a short rod 22, having a disk 23 at its upper end designed to be engaged by the lower end of the piston-rod, and at its lower end this short rod is provided with a disk 24, designed to engage on the valve 21. This disk 24 is provided with a series of notches 25 to receive fingers 26, extended upward from the bottom of the pump-cylinder. These fingers are curved inward, so that the holding device can-

not become detached, but will permit of sufficient movement to allow the valve 21 to open and admit liquid to the pump when the piston is out of engagement with the disk 23. When the piston-rod is in its lowermost position and locked down by any suitable means—such, for instance, as by a strap engaging with loops 27 and passing over the handle 16—the said valve 21 will be held tightly closed.

A vent-tube 28 extends through the upper chambered portion of the pump-cylinder into the reservoir 1. This vent-tube is normally closed when the device is not in operation by means of a plug 29, carried by the piston-rod. As here shown, this plug is provided with a longitudinal slot through which a screw 30 from the piston-rod or from the handle 16 passes. By this construction the vent-plug may be adjusted vertically as it wears, or it may be left entirely loose when the extinguisher is in operation, so as to not plug the vent-tube on a downward movement of the piston.

In the operation of the apparatus when the piston-rod is thrown upward the valve 18 will close upon its seat, preventing the escape of air in the piston-rod. Upon a downward movement of the piston-rod the air contained therein will serve as a piston against the liquid, and as the valve 18 at this time moves off its seat the liquid will pass through the valve-casing 17 and out through ports 31 into the pump-cylinder, and then upon the continued operation the liquid will be forced out through the pipe 32, which communicates with the chamber in the upper portion 5 of the cylinder.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fire-extinguisher comprising a reservoir, a pump-cylinder passing into the reservoir, lugs on the neck portion of said reservoir, pairs of arms extended outward from the upper portion of the cylinder, pins connecting the arms of a pair, blocks having shoulder portions for resting on said pins, projections on the lower ends of said blocks for engaging with the lugs on said neck portion, and clamping-screws carried by the blocks for engaging with the pump.

2. In a fire-extinguisher, a reservoir, a pump arranged therein, a collar at the upper end of the reservoir, a flange on the upper end of the pump for engaging with said collar, arms extended outward on the flange, the arms of a pair being connected, the connection being chambered, a pin arranged in the chamber, a block extended between the arms of a pair and having a shoulder for engaging with the pin, a lug on the block, a lug on the collar for engaging with the lug on the block, and a clamping-screw carried by the block.

3. A fire-extinguisher comprising a reservoir, a pump-cylinder extended therein, an air-vent extended through the upper portion of the pump-cylinder and into the reservoir, a piston-rod operating in the pump-cylinder, and a vent-plug having adjustable connection with the piston-rod.

4. A fire-extinguisher comprising a reservoir, a pump-cylinder extended therein, a piston-rod for operating in the cylinder, a valve in the lower end of the cylinder, fingers extended upward in the bottom of the cylinder and having their upper ends curved inward, and a holding device for the valve, the said holding device being guided by said fingers and held downward by the piston-rod.

5. A pump-cylinder, a valve in the lower portion thereof, fingers extended upward from the lower end of the cylinder and having their upper ends curved inward, a disk adapted to bear on said valve and having notches to receive the fingers, and a disk on the upper end of the holding device, adapted to be engaged by the piston-rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FERNANDO YOST.

Witnesses:
C. R. FERGUSON,
EVERARD BOLTON MARSHALL.