

No. 616,362.

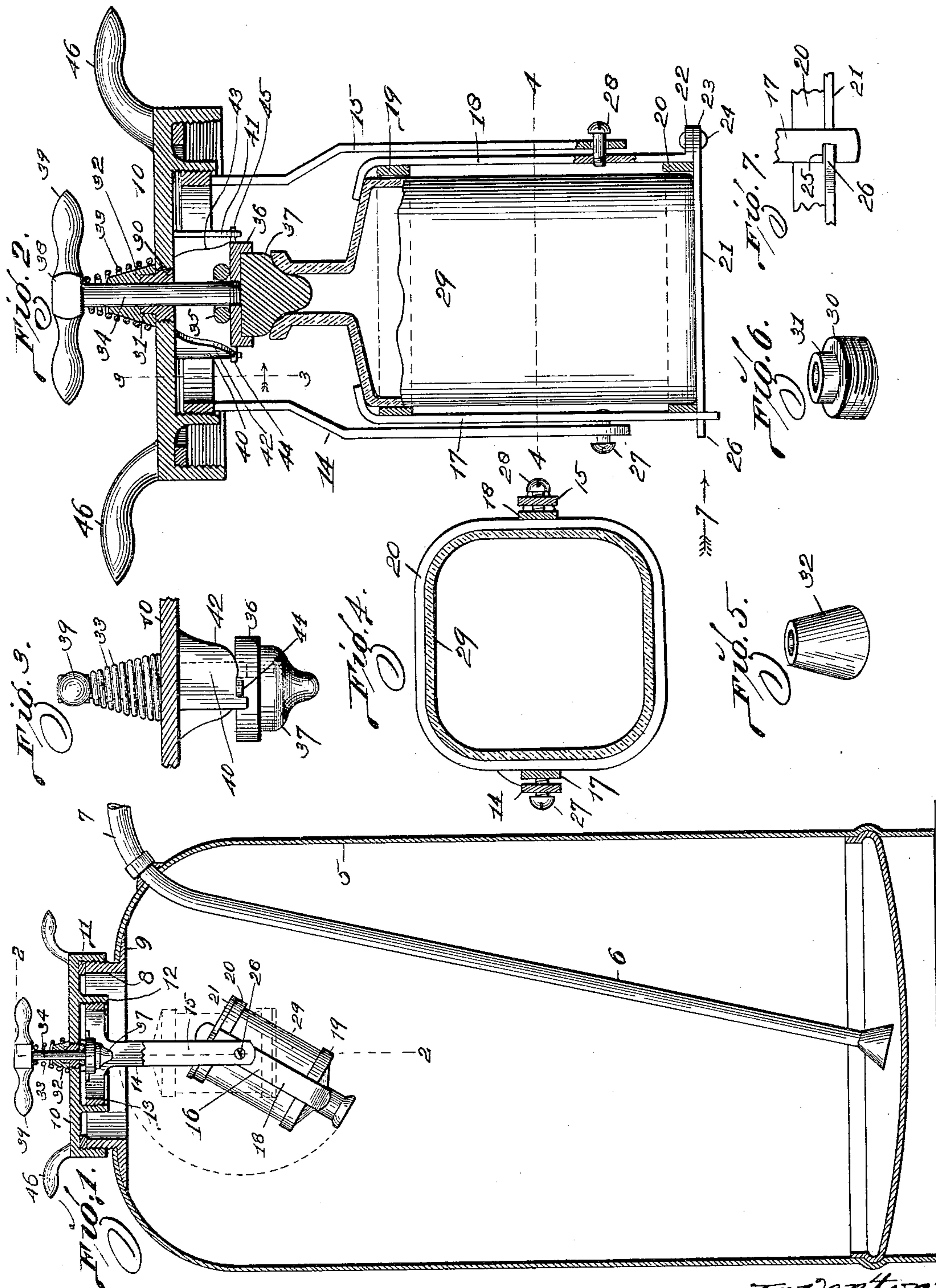
E. SCHAEFER.

Patented Dec. 20, 1898.

FIRE EXTINGUISHER.

(Application filed Aug. 3, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

EDWARD SCHAEFER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE MISSOURI LAMP AND MANUFACTURING COMPANY, OF SAME PLACE.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 616,362, dated December 20, 1898.

Application filed August 3, 1897. Serial No. 646,997. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SCHAEFER, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to fire-extinguishers; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

Figure 1 is a vertical central section of my improved fire-extinguisher and illustrating the operation. Fig. 2 is an enlarged detail vertical central section of the cap, the bottle-closing mechanism, and the bottle-supporting rack. Fig. 3 is a detail section taken approximately on the line 3 3 of Fig. 2 and looking in the direction indicated by the arrow. Fig. 4 is a horizontal section taken approximately on the line 4 4 of Fig. 2 and looking downwardly. Fig. 5 is a view in perspective of the conical packing-ring through which the sliding bolt operates and which is located on top of the cap. Fig. 6 is a view in perspective of a hard-rubber bushing through which the sliding bolt operates and which is located in the center of the cap. Fig. 7 is a detail view in elevation of the lower end of the bottle-supporting rack as seen looking in the direction indicated by the arrow 7 in Fig. 2.

The object of my invention is to provide a portable fire-extinguisher which may be discharged without inverting the tank and without breaking the bottle.

Referring by numerals to the drawings, 5 is the tank, which may be of any suitable construction.

6 is the discharge-pipe, which leads from the interior and near the bottom of the tank upwardly and outwardly through the top of the tank at one side of the cap, the hose 7 being attached to the outer end of said pipe.

The tank 5 has an opening in the center of its top, through which the exteriorly-screw-threaded ring 8 is inserted, and the flange 9 projects outwardly from the lower end of the ring and engages the inner face of the tank. The interiorly-screw-threaded cap 10 is screw-seated upon the ring 8, and a packing-ring 11 engages the upper edge of the ring 8 and is

held in position by the cap as required to form a tight joint between the cap and the tank. An annular interiorly-screw-threaded flange 12 projects downwardly from the cap 10 in position concentric to the ring 8. An exteriorly-screw-threaded ring 13 is screw-seated in said flange 12, and the arms 14 and 15 extend downwardly from opposite sides of said ring.

The bottle-holding rack 16 is pivotally mounted between said arms 14 and 15, and said rack consists of the vertical side pieces 17 and 18, having their upper ends bent inwardly, the ring 19 connecting the upper ends of said side pieces, the ring 20 connecting the lower ends of said side pieces, and the horizontally-sliding door 21 closing the lower end of the rack and holding the bottle in position. An ear 22 projects horizontally outwardly from the lower end of the side piece 18. An ear 23 projects from the door 21, and a rivet or screw 24 is inserted through the ear 22 and through the ear 23, thus forming a horizontal sliding connection between the door 21 and the side piece 18. The door 21 is a disk large enough to close the opening through the ring 20. A notch 25 is formed horizontally in the lower end of the side piece 17, and a projection 26 at the opposite side of the door 21 from the ear 23 engages in said notch 25. The screws 27 and 28 are inserted through bearings in the lower ends of the arms 14 and 15 and screw-seated in the side pieces 17 and 18, respectively, as required to form pivotal supports for the bottle-supporting rack. The door 21 swings horizontally until the opening through the ring 20 is unobstructed. Then the acid-bottle 29 is inserted upwardly through the ring 20 until the inwardly-turned upper ends of the side pieces 17 and 18 engage the upper ends of the bottle. Then the door 21 is closed, thus holding the bottle securely in position in the bottle-supporting rack. The screw-threaded connection between the flange 12 and the ring 13 forms a means of adjusting the bottle-supporting rack upwardly or downwardly to suit the varying lengths of bottles. A screw-threaded opening is formed through the center of the cap 10, and a hard-rubber bushing 30 is screw-seated in said opening. The upper end of the bushing 30 is reduced in size, thus producing the collar 31, which collar ex-

tends upwardly above the upper face of the cap 10.

The conical packing-ring 32 has the lower end of its opening enlarged to receive the collar 31, and said packing-ring is placed in position with its lower end resting upon the upper face of the cap 10 and upon the upper face of the bushing 30. The conical coil-spring 33 is placed in position around the packing-ring 32, and the sliding bolt 34 is inserted downwardly through the bushing 30 and through the packing-ring 32. The packing-ring 35 is placed around the lower end of the bolt 34, and the cap-shaped head 36 is screw-seated upon the lower end of said bolt and below said packing-ring. The stopper 37 is attached to the head 36 and engages in the mouth of the bottle 29. A head 38 is formed upon the upper end of the sliding bolt 34 and engages the upper end of the conical coil-spring 33 and holds said spring in position, the lower end of said spring resting upon the upper face of the cap 10. Handles 39 project from the head for operating the bolt.

The arms 40 and 41 extend downwardly from the cap 10 upon opposite sides of the sliding bolt 34, said arms having the concentric cam-faces 42 and 43, respectively, extending from the lower face of the cap 10 on an incline to the lower ends of said arms and nearly across the lower ends of said arms, as shown in Fig. 3. The lugs 44 and 45 project outwardly from opposite sides of the cap 36 and engage the cams 42 and 43, as required to raise and lower the stopper 37. By rotating the sliding bolt 34 when the stopper 37 is in its depressed position, as shown in Figs. 2 and 3, the acid-bottle is securely closed and the conical coil-spring 33 engages tightly around the packing-ring 32, as required to compress the packing-ring and form a water-tight joint between the sliding bolt 34 and the cap 10, thus preventing the machine from leaking.

When it is desired to discharge the machine, the handles 39 are manually engaged to partially rotate the sliding bolt 34 and allow the expansion of the spring 33 to elevate said bolt, thus drawing the stopper 37 away from the mouth of the bottle and allowing the bottle to tip downwardly, as shown in Fig. 1, thus discharging the contents of the acid-bottle into the liquid within the tank and discharging the extinguisher without inverting the tank.

When the sliding bolt 34 is in its elevated position, as in Fig. 1, the tension of the spring 33 pulls the packing-ring 35 firmly against the bushing 30 and the lower face of the cap 10, thus forming a water-tight joint around the sliding bolt 34. The hard-rubber bushing 30 around the sliding bolt 34 prevents said bolt from contacting with the metal composing the cap 10 and keeps the bolt smooth.

The handles 46 project upwardly and outwardly from opposite sides of the cap 10 for operating the same.

I claim—

1. In a fire-extinguisher, a sliding bolt operating through the wall of the extinguisher, a hard-rubber bushing screw-seated in said wall around said sliding bolt, a conical packing-ring around said sliding bolt outside of the wall, a conical spring around said packing-ring, and a stopper upon the inner end of said sliding bolt, substantially as specified.

2. In a fire-extinguisher, the combination with a cap having an acid-bottle pivotally swung from its under side, of a rod arranged for vertical movement through the center of the cap, a hard-rubber bushing screw-seated in said cap and around said sliding rod, a conical packing-ring upon said bushing and around said rod, a conical coil-spring around said packing and around the rod, a flexible ring passing around said rod beneath the bushing, a cap carried by the lower end of said rod, and a flexible conoidal stopper carried by said cap, substantially as specified.

3. In a fire-extinguisher, the combination with a suitable tank and a cap removably seated in position to close said tank, of a frame vertically adjustable and removably connected to the under side of said cap, a bottle-supporting rack pivotally connected to the lower end of said frame, a rod arranged for vertical movement through the center of the cap, a hard-rubber bushing screw-seated in said cap around said sliding rod, a conical packing-ring upon said bushing and around said rod, a conical coil-spring around said packing and around said rod, and a flexible stopper carried by the lower end of said rod, substantially as specified.

4. In a fire-extinguisher, the combination with a suitable tank and a cap removably seated in position to close said tank, of a frame vertically adjustable and removably connected to the under side of said cap, a bottle-supporting rack pivotally connected to the lower end of said frame, a rod arranged for vertical movement through the center of the cap, a hard-rubber bushing screw-seated in said cap around said sliding rod, a conical packing-ring upon said bushing and around said rod, a conical coil-spring around said packing and around said rod, a flexible stopper carried by the lower end of said rod, and means carried by the under side of the cap for locking the rod at its lowermost limit of movement when the stopper is in the mouth of the bottle, substantially as specified.

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

EDWARD SCHAEFER.

Witnesses:

EDWARD E. LONGAN,
ALBERT J. MCCAULEY.