

971,386.

Fig. 1

Fig. 2

Fig. 3

Witnesses:-
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UNITED STATES PATENT OFFICE.

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CHEMICAL-TANK FOR FIRE-EXTINGUISHERS.

971,386.

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To all whom it may concern:

Be it known that I, JOHN T. LALLY, a citizen of the United States, residing in Wilmington, Delaware, have invented certain
5 Improvements in Chemical-Tanks for Fire-Extinguishers, of which the following is a specification.

My invention relates to certain improvements in caps for chemical tanks for fire
10 extinguishers.

The object of my invention is to provide a tight joint between the cap and the casing and between the cap and the stopper when
15 raised, so as to prevent the escape of any of the gases when the contents of the chemical bottle are discharged into the tank.

In the accompanying drawing:—Figure 1, is a view in elevation of sufficient of a chemical tank to illustrate my invention; Fig. 2,
20 is a sectional view; and Fig. 3, is a detached perspective view of one of the packing rings.

A is the body of the tank having a neck B attached thereto by bolts *b* and screwed onto the upper end of the neck is a ring C having
25 a bracket *c* carrying the pivot pin *c'* for the cap D. On the ring C opposite the bracket *c* is an undercut lug *c²* with which engages the nose *e* of the latch E pivoted at *e'* to the cap D. A spring *e²* tends to throw the latch
30 toward the cap so that it will engage the flange *c²* when the cap is closed.

F is a cage mounted on trunnions *f, f'*. The trunnion *f* extends through a stuffing box *a* in the casing A and is provided with a
35 handle *F'* by which the cage can be tilted.

G is a chemical bottle having a tapered mouth *g* in which fits the stopper I carried by a screw stem *I'* adapted to a threaded opening in the cap D. This stem is provided
40 with a handle *I²* by which it is turned. The stopper has a tapered projection *i'* and a flange *i* the latter being adapted to rest upon the mouth of the bottle when in the closed position, as shown by dotted lines. When
45 in the raised position the top of the stopper presses upon a flange *d³* of a packing ring *d* L-shaped in cross section and held in position by a metallic ring *d'* and screws *d²*.

On the inner side of the cap is a deep
50 flange *D'* against which the bottle strikes should it stick to the stopper when the stopper is being raised, so as to insure the drawing of the stopper from the bottle.

A packing ring *h*, having a flange *h³*, is
55 secured to the cap D by a plate *h'* and screws *h²*. The edge of the flange *h³* abuts a be-

veled seat *c⁴* in the ring C, when the cap is closed, and thereby prevents leakage between the cap D and the ring C.

The stopper can be readily manipulated
60 and any pressure desired can be brought upon the packing by turning the screw more or less.

The stopper can be lowered in contact with the bottle, making a tight joint so as to pre-
65 vent the material in the bottle escaping into the casing and also preventing the accidental tilting of the bottle without the cork is first fully raised.

To prepare my invention for use; the
70 chemical bottle G is placed within the cage F while the cap D is thrown back on the pivot *c'*, after this, the cap is thrown over and pressed down until the spring latch E engages the lug *c²*. During this action, the
75 flange *h³* of the packing or sealing ring *h* strikes the beveled surface *c⁴* of the annular flange *c⁵* on the ring C and is deflected until its edge strikes the ledge or seat *c³*, where it is compressed. The stopper I is then
80 brought in contact with the mouth of the bottle by turning the screw stem *I'*.

When it is desired to use my invention, the screw stem *I'* should be turned until the tapered surface *i'* of the stopper strikes and
85 deflects the flange *d³* of the packing or sealing ring *d*. The cage F should then be tilted by turning the handle *F'* to spill the contents of the bottle G. Thus by having a tapered seat formed in the ring C for the
90 reception of the flange *h³* of a packing ring *h* composed of rubber or other suitable material which in its normal state is slightly deeper than the said seat, a positive contact of the flange can be obtained by a slight
95 pressure on the cap. This principle is also true with the stopper and ring *d*. The tapered upper portion of the stopper deflects the flange *d³* until its edge is abutted by the body portion of the stopper; then owing to
100 the tapered projection being slightly less than the depth of the flange, an additional upward movement of the stopper will cause the flange to be compressed and form a positive
105 contact with the work.

Although I have shown the flange *a³* of the packing ring engaging a ledge or seat *c³*, it is possible to obtain a tight joint by allowing the flange *h³* to rest entirely against the
110 beveled surface *c⁴* and doing away with the said seat *c³*. Because the tightness of the seal is not entirely due to the downward

pressure of the cap, but also upon the internal pressure of the tank, which tends to force the depending flanges against their respective beveled seats.

5 I claim:—

1. In a fire extinguisher, the combination of a casing, a cap mounted thereon, a screw stem, a stopper mounted on the screw stem, a bottle mounted within the casing and adapted to be closed by the stopper, with a packing ring having a depending flange with which the cork comes in contact when it is raised and by which a tight joint is made between the stopper and the cap, preventing the leakage of gas.

2. The combination of a casing, a cap pivoted thereto, a screw stem mounted in the casing, a stopper on the screw stem, means for securing the cap to the casing, a packing ring mounted on the cap and having a depending flange, said flange bearing on the casing, forming a tight joint between the casing and cap, a second packing ring having a depending flange with which the stopper comes in contact when raised, a bottle holder, and a bottle.

3. In a fire extinguisher, the combination of a tank having an aperture, a cap on the tank and covering the aperture, a screw stem in said cap, a stopper on the stem and two packing rings secured to the cap and having depending flanges, one flange serving to seal the space between the stem and the cap when engaged by the stopper, the other flange serving to seal the seam between the cap and the tank.

4. In a fire extinguisher, the combination of a casing, a cap thereon, a stem in the cap, a stopper on the stem and having a tapered projection, a packing ring secured to the cap and having a depending flange for engagement with the tapered portion of the stopper to form a seal.

5. In a fire extinguisher, the combination of a casing having an aperture, a ring detachably connected to the casing and encircling the aperture, an annular flange on the ring and having a beveled surface, a cap mounted on the ring, a screw stem operable through the cap, a stopper on the stem and having a tapered projection, a packing ring secured to the cap and having a depending flange for engagement with the beveled portion of the stopper to form a seal, a second

packing ring secured to the cap and having a depending flange cooperating with the beveled surface of the annular flange to form a seal and means for securing the cap to the ring.

6. In a fire extinguisher, the combination of a casing, a cap pivoted thereto, a screw stem mounted in the cap, a stopper on the screw stem, a latch pivoted on the cap and engaging the casing, a packing ring secured to the cap and having a depending flange cooperating with the casing to form a seal, a second packing ring secured to the cap and having a depending flange cooperating with the stopper to form a seal, a bottle holder within the casing, a bottle, and means operable upon the holder to tilt the bottle.

7. The combination of a casing, a ring detachably mounted on the casing, a cap pivoted to the ring, a screw stem mounted in the casing, a stopper on the screw stem, a spring latch carried by the cap and engaging the ring, a packing ring secured to the cap and having a depending flange operable upon the stopper to form a seal and a second packing ring secured to the cap and having a depending flange operable upon the casing to form a seal.

8. The combination of a casing, a cage pivotally mounted within the casing, a bottle carried by the cage, a neck secured to the casing, a ring mounted on the neck, a cap pivoted to the ring, a latch for securing the cap to the ring, an annular packing ring secured to the cap and bearing upon the ring, said cap having a deep flange, a screw stem adapted to a threaded opening in the cap and having a stopper adapted to enter the space within the deep flange of the cap or rest upon and close the bottle hung within the vessel, and a packing ring mounted within the flange of the cap and against which the stopper rests when raised, the two packing rings preventing leakage between the cap and the casing and the stopper.

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

JOHN T. LALLY.

Witnesses:

WM. E. SHUPE,

WM. A. BARR.