C. VAN DUSEN.

Fire-Extinguisher.

No. 162,976. Patented May 4, 1875.

Fig 1

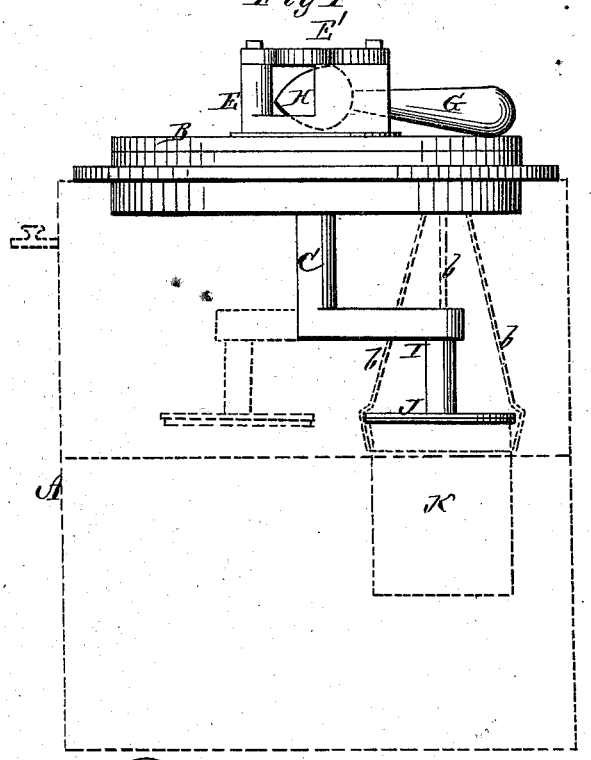


Fig 3

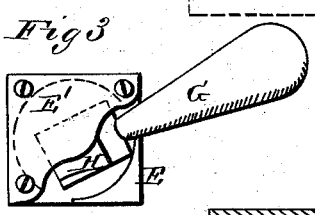


Fig 2

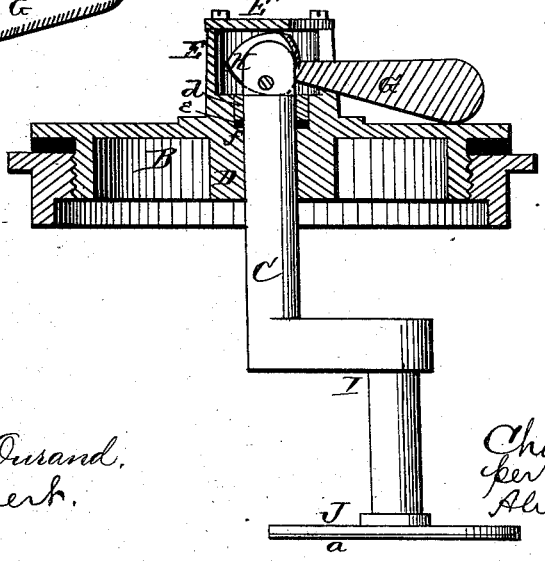


Fig 4

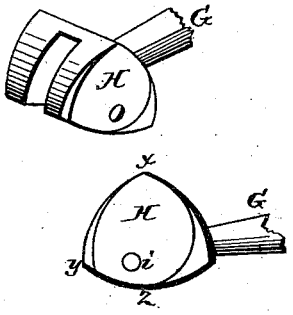
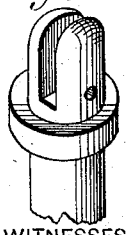


Fig 5



WITNESSES

Franck L. Durand.

C. L. Ewerk.

INVENTOR

Chas. Van Dusen.

per

Alexander Mator

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES VAN DUSEN, OF NEW ALBANY, INDIANA, ASSIGNOR OF ONE-HALF HIS RIGHT TO F. S. DEVOL AND E. A. MAGINNESS, OF SAME PLACE.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **162,976**, dated May 4, 1875; application filed February 24, 1875.

To all whom it may concern:

Be it known that I, CHARLES VAN DUSEN, of New Albany, in the county of Floyd and in the State of Indiana, have invented certain new and useful Improvements in Fire-Extinguishers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to that class of fire-extinguishers in which gas is generated by mixing a solution of bicarbonate of soda with sulphuric acid; and the nature of my invention consists in the construction and arrangement of a device for closing and uncovering the acid-vessel, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of my invention. Fig. 2 is a longitudinal vertical section of the same. Figs. 3, 4, and 5 are detached views of certain parts thereof.

A represents the tank of a hand fire-extinguisher, provided with the cover B, through the center of which passes the solid rod C. The cover B is, on its under side, provided with a central hub, D, to form a sufficient bearing for keeping the rod C in its place. On the top of the cover is formed a box, E, with top plate E′ fastened thereon. This box and plate are cut out on two sides and on top, for the passage of a lever, G, having an eccentric, H, formed upon its inner end, said eccentric being slotted, and the upper end of the shaft or rod C pivoted therein. On the lower end of the rod C is formed or attached a crank, I, to which the stopper J of the acid-bottle K is firmly secured. This stopper is simply a flat disk, a little larger than the bottle, and covered with rubber *a* on the under side. The acid-bottle K is suspended and kept firmly in its place by means of suitable supports *b b*. On the rod C, near the upper end, is a flange, *d*, with a rubber ring, *e*, under it, between it and the shoulder *f* below it in the cover B. The eccentric H, on the inner end of the lever G, is formed, as shown in Fig. 4, with two bearing-points, *x y*, and an under curved surface, *z*. The point *i* of the eccentric is where the rod C is pivoted thereto, and this point should be so located as to give the rod as much play as possible.

To operate the machine the lever G is raised, thereby raising the rod C sufficiently for the cover J to clear the bottle K. This raising of the rod is caused by the point *y* of the eccentric bearing on the top of the cover. The lever G is then turned to the left, which carries around the crank-rod C and cover J one-quarter of a circle, or seventy-five degrees, more or less. The lever is then lowered in the other opening of the box E as far as it will go, which also lowers the rod C. This downward motion of the rod C compresses the rubber *e* under the flange *d*, making a tight joint when the machine is charged. When the cover is returned to its place, by reversing the motion just described, lowering the lever again lowers the rod B, compressing the rubber *e*, and also compressing the rubber *a* on the under side of the cover against the edges of the acid-bottle, thus making a perfect stopper for the bottle, and also a tight joint at *f*. The eccentric, it will be noticed, locks itself when lowered, the upper point *x* being beyond the center of the rod C. In practice, however, I may add some simple device to hold the lever down.

The above description supposes the bottle stationary and the stopper movable. In fire-extinguishers where the cover is stationary and the bottle movable the rod C should be straight, and fastened to one side of the bottle. The turning of the rod C would then cause the bottle to describe the motion here shown for the cover. In this case the bottle would have to be brought under the stopper and raised to make the cover tight, which requires a slight modification of the eccentric H, and also the location of the flange *d*, with its rubber *e* at the lower end of the hub D instead of on top.

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

1. The eccentric H, constructed as described,

with bearing-points *x y* and curved surface *z*, in combination with the rod C and a fire-extinguisher tank, A B, substantially as and for the purposes herein set forth.

2. The combination, with the cover B, having hub D, of the rod C, with flange *d* and rubber ring *e*, and the eccentric H, all substantially as and for the purposes herein set forth.

3. The combination of the cover B, having hub D and box E, the rod C, lever G, and eccentric H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of January, 1875.

CHARLES VAN DUSEN.

Witnesses:

LAWRENCE B. HUCKEBY,

WILLIAM DUNBAR.