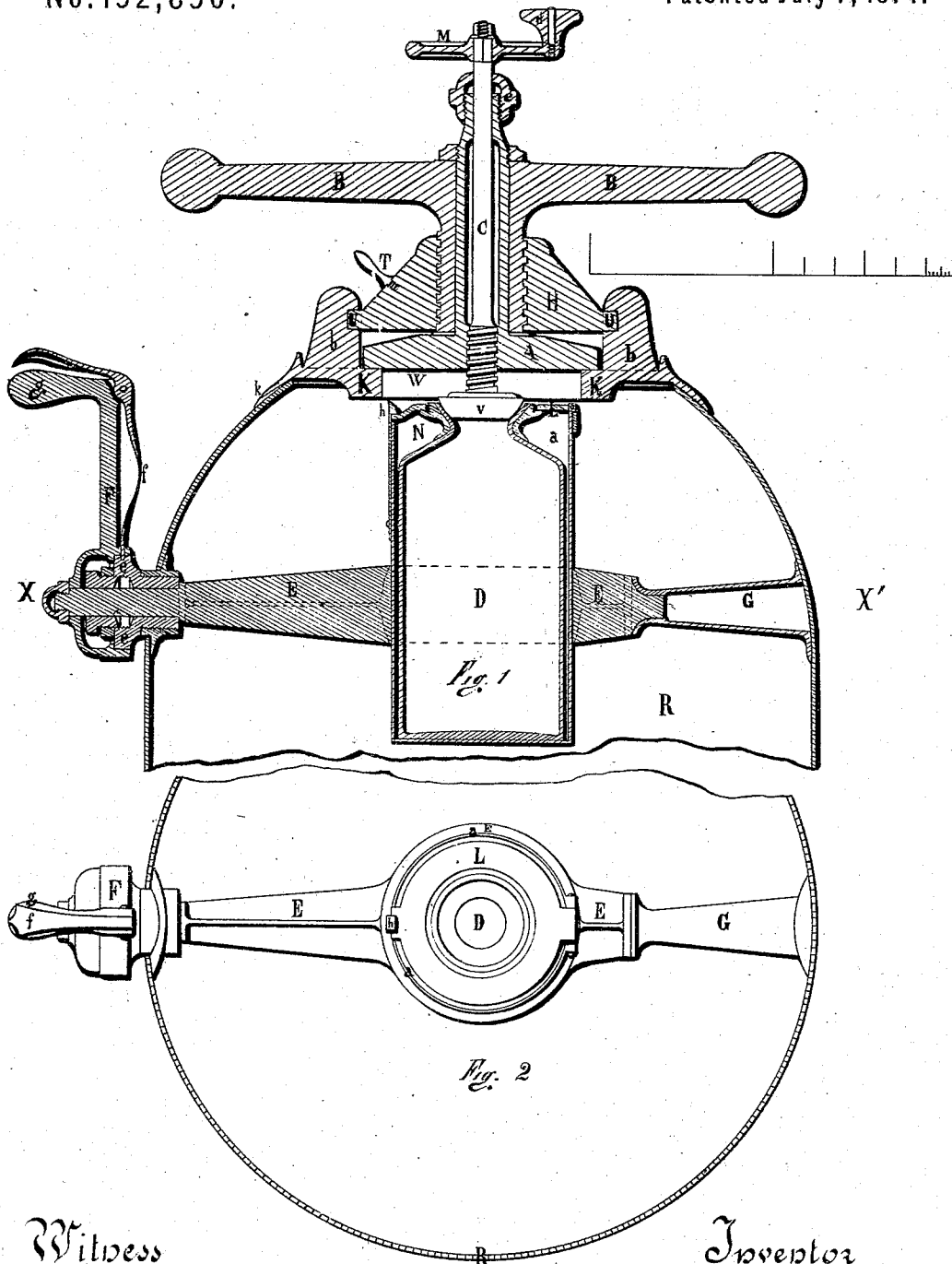


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Chemical Fire-Extinguishers.

No. 152,850.

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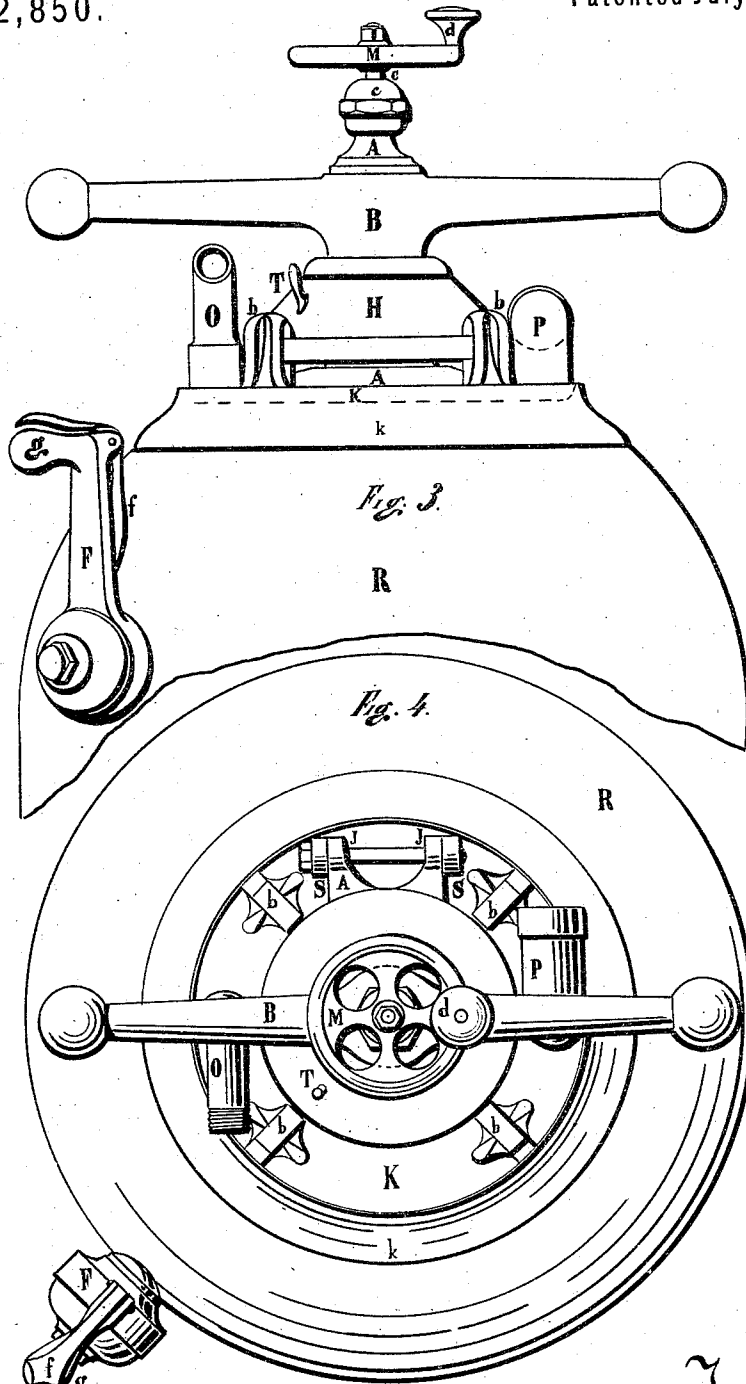
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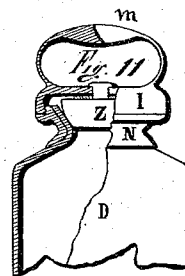
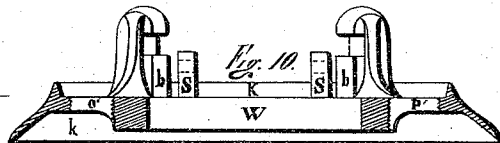
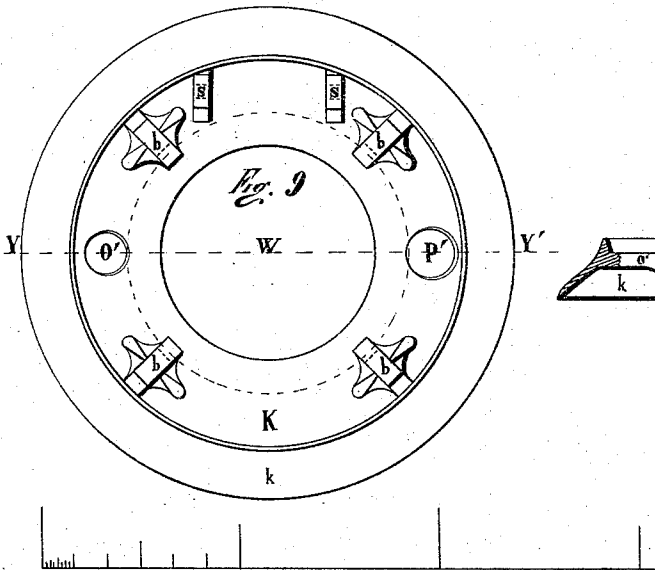
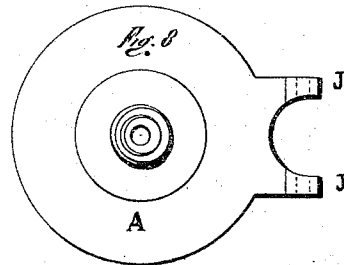
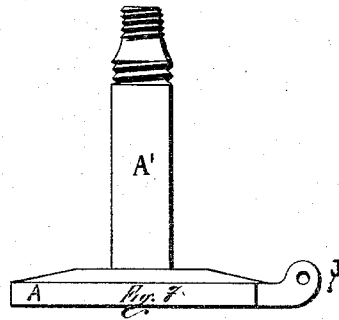
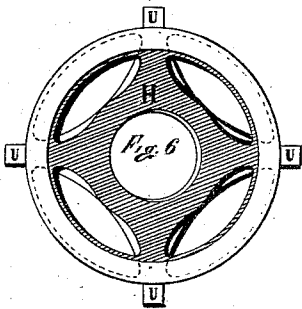
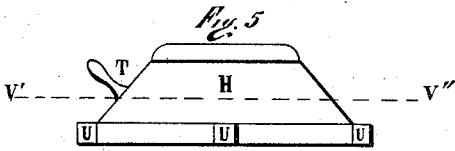
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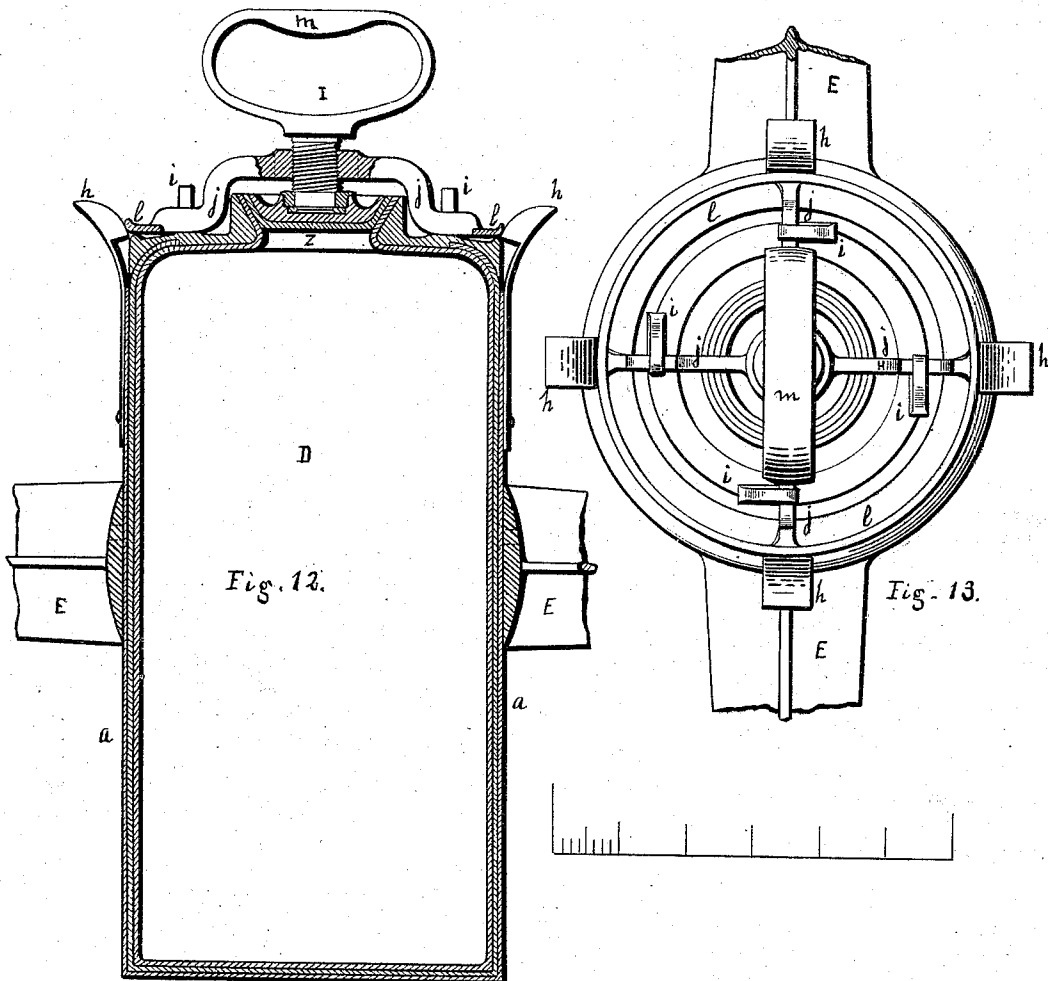
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UNITED STATES PATENT OFFICE.

WELLINGTON LEE, OF NEW YORK, N. Y., AND JOHN A. KLEY, OF CHICAGO, ILLINOIS, ASSIGNORS TO THE BABCOCK MANUFACTURING COMPANY.

IMPROVEMENT IN CHEMICAL FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **152,850**, dated July 7, 1874; application filed March 14, 1874.

To all whom it may concern:

Be it known that we, WELLINGTON LEE, of the city of New York, in the county and State of New York, and JOHN A. KLEY, of the city of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Chemical Fire-Extinguishers, of which the following is a full description, reference being had to the accompanying drawings, consisting of four sheets, in which—

Figure 1 is a vertical section of the top portion of a cylinder or tank with the parts in position; Fig. 2, a cross-section on line *x x'* of Fig. 1, showing a top view of an acid-bottle and its supports; Fig. 3, a side elevation of such upper portion; Fig. 4, a top view of the same; Fig. 5, a side elevation of the locking-nut; Fig. 6, a cross-section of the same on line *v' v''* of Fig. 5; Fig. 7, a side elevation of the cover or lid detached; Fig. 8, a plan view of the same; Fig. 9, a top or plan view of the cap-plate; Fig. 10, a cross-section of the same on line *y y'* of Fig. 9; Fig. 11, a detail of an acid-bottle, partly in section; Fig. 12, a vertical section of an acid-bottle, enlarged; and Fig. 13, a plan view of the same.

The object of our invention is to make the parts necessary for charging the cylinder or tank easily and quickly adjustable, and at the same time hold the parts securely in position, so that the tank can be readily recharged. Our improvements are mainly designed to be used in connection with large tanks mounted upon wheels to be used as fire-engines, but they are applicable to all sizes of generators, cylinders, or tanks. The nature of our invention consists in so hinging and locking the top that it can readily be swung out of position, so as to expose the acid-bottle; in arranging the acid-bottle so that it can be removed from and replaced in a revolving cup or receiver; and in the several devices and combinations hereinafter claimed.

In the drawings, A represents the cover or lid for closing the mouth of the cylinder; B, screw, provided with arms or levers for holding down the cover; C, screw-rod, running through the cover and its attachments, for operating the stopper; D, acid-bottle; E, shaft, carrying and supporting the acid-bottle; F,

crank for turning the bottle; G, arm or projection supporting the inner end of the shaft E; H, nut or locking device, through which the screw B passes, and presses on the cover A; K, top plate of the cylinder; L, hinged lid or ring for holding the acid-bottle in the receiver when inverted; M, hand-wheel or crank for operating the stopper-rod C; N, flange, provided with a screw-thread, with which the screw-top I engages; O', opening for the supply-pipe; P', opening for the discharge-pipe; R, main tank or cylinder; S, lugs on the top plate K for hinging the lid or cap A; T, handle for moving the nut H; U, lugs or projections on the nut H; V, bottle-stopper; W, hole in the top plate; Z, bottle-stopper; *a*, bottle-case or receiver; *b*, notch-lugs in the top-plate K; *c*, stuffing-box on the rod C; *d*, wheel or crank-handle for operating the rod C; *e*, outer bearing for the shaft E; *f*, spring-pawl; *g*, crank-handle of the crank F; *h*, spring-notches for holding the bottle in the case *a*; *i*, notch lugs or hooks on the top of the acid-bottle; *j*, arms of the stopper-holder; *k*, flange on the plate K; *l*, band on the stopper-holder for releasing the spring-notches *h*; *m*, handle of the stopper-holder. The tank R is constructed in any of the ordinary forms, and of the usual material. To the top of this tank the plate K is attached by solder or otherwise. This plate has a central opening, W, made sufficiently large to permit the passage of the acid-bottle, and is provided with lugs *b*, which have recesses on their inner sides, into which the projections U of the nut H pass. It is also provided with small lugs or projections S, to which the plate A is hinged by means of the projections J, as shown at Fig. 4. The plate A is made to fit the hole W of the plate K, and is provided with a suitable packing to prevent the escape of the gas at that point. It is also provided with a vertical tube, A', around which the nuts H and B are placed, and through which the rod C passes. This lid or cover is held in place by the nut H, which, when the lid is in place, is turned so that the projections U will engage with the notches or recesses in the lugs *b*. When in this position the screw-lever B is turned down so as to press with force

upon the lid A. These parts are then in the position shown at Figs. 1 and 3. In order to release the lid, the screw-lever B is turned backward, by a half-turn or more, which releases the nut H, which nut can then be turned from its engagement with the lugs b, when the entire cover can be turned back upon the hinge S J. We have provided a pin or handle, T, for operating this nut H, but when it is recessed or cut out, as shown at Fig. 6, this handle may be omitted.

When the acid or chemical bottle is placed in the case a, and the top part is turned into position and locked as described, the stopper V is placed in position by means of the screw-rod C, which is provided at its junction with the plate A with a screw-thread. This operation closes the bottle, and also aids in keeping it in position. The rod C is provided with a bearing and stuffing box at its upper end to prevent the escape of gas at that point. The bottle-case or receiver a is firmly attached to the shaft E, which shaft is provided with a bearing in the projection G at one end, and with a bearing in the tank-case at the other, which bearing is also provided with a suitable stuffing-box. The outer end of this shaft E is provided with a crank, F g, and also with a spring pawl, f, which locks into the bearing e, and holds the shaft with the case a in a proper position for receiving the acid-bottle, as shown at Fig. 1. By releasing the spring-pawl f the case a, with its acid-bottle, can be inverted and the contents of the bottle discharged into the tank R. Before inverting the bottle, however, the stopper V should be run up out of the way by means of the crank M. The bottle shown in Figs. 1 and 11 is provided with a neck, to which a collar, N, is attached. When the bottle is placed in the receiver a the lid L is turned down and engages with the collar N of the bottle, and also with a spring-catch attached to the case a, and holds the bottle so that it will not fall out when the case is inverted. This bottle D is arranged for storage or transportation independently of the tank or its receiver a. For this purpose, we make a screw-cap, I, which is provided with a handle, m, and stopper Z. This cap is screwed onto the collar N, as shown at Fig. 11, when the bottle is to be carried or kept ready for use outside of the tank. When it is placed in the tank, the screw-cap I is removed, as shown at Fig. 1, when the stopper V takes the place of the stopper Z. The bottle D', shown at Fig. 12, is without a neck. When this form is used the lid L is dispensed with, and one or more additional spring-catches, h, are attached to the case a. The cap I is also changed, and made as shown at

Figs. 12 and 13—that is, instead of a screw-thread, hooks or notched lugs, i, are attached to the top of the bottle, and the cap is provided with arms j and a ring, l. To secure the stopper in this form the arms j are placed under the hooks i, when the stopper Z is screwed down by the handle m, which holds both the stopper and the cap firmly in position. The cap I is used both in inserting and withdrawing the bottle from the receiver a. In the position shown at Fig. 12, the stopper Z is firmly secured to the bottle. When it is placed in the cap the handle m is unscrewed, when the arms j will be disengaged, so that the cap can be withdrawn, and when withdrawn the ring or band l releases the springs h which hold the bottle in the case. The cap A is placed in position after the bottle has been placed in the receiver a, and the stopper V is run down to take the place of the stopper Z. By this arrangement of the bottles a number of them can be taken with the machine, and one can be readily changed for another; so that, with two tanks, a continuous stream can be maintained, and, by the use of these caps provided with separate stoppers, the acid-bottles can be easily handled and used without waste or injury to the clothing.

For large machines it will be advisable to connect the supply and discharge pipes O and P with the tank through the plate K, but for small tanks they may be otherwise located as desired; or the supply-pipe O may be omitted entirely, and the water turned in through the opening W.

The chemical operation of this apparatus is the same as any other, and need not, therefore, be described.

What we claim as new is as follows:

1. The hinged or removable cover A, in combination with the nut H and screw B, for securely covering the opening W, substantially as specified.

2. The combination of the plate K provided with the lugs b, cap A, the nut H provided with the lugs U and screw B, with the rod C provided with the crank M and the bottle-stopper V, substantially as described.

3. The locking-pawl f, bearing e, and shaft E, in combination with shaft E, case a, and locking-stopper V, substantially as and for the purpose set forth.

4. The holder I in combination with the stopper Z, substantially as and for the purposes specified.

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