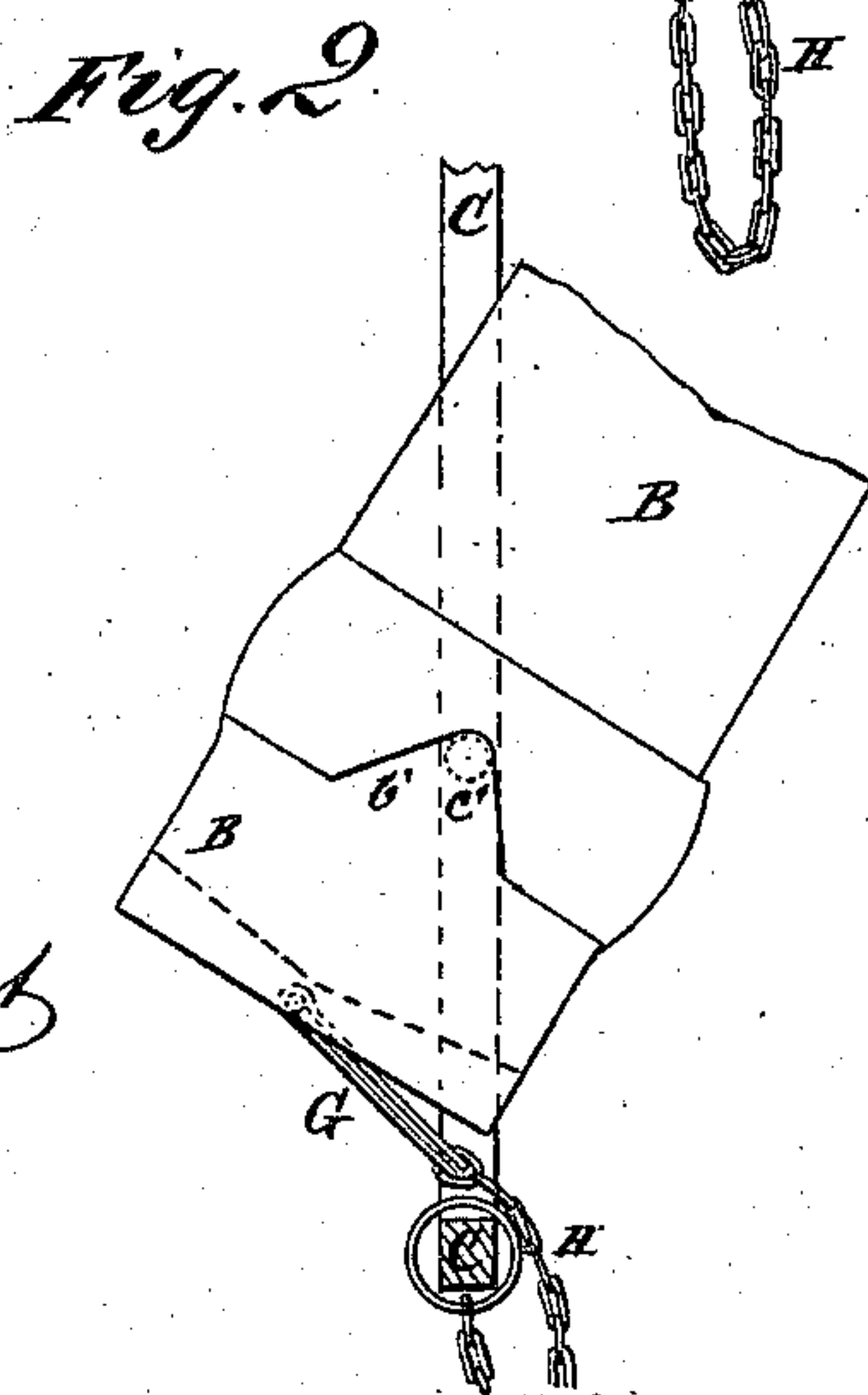
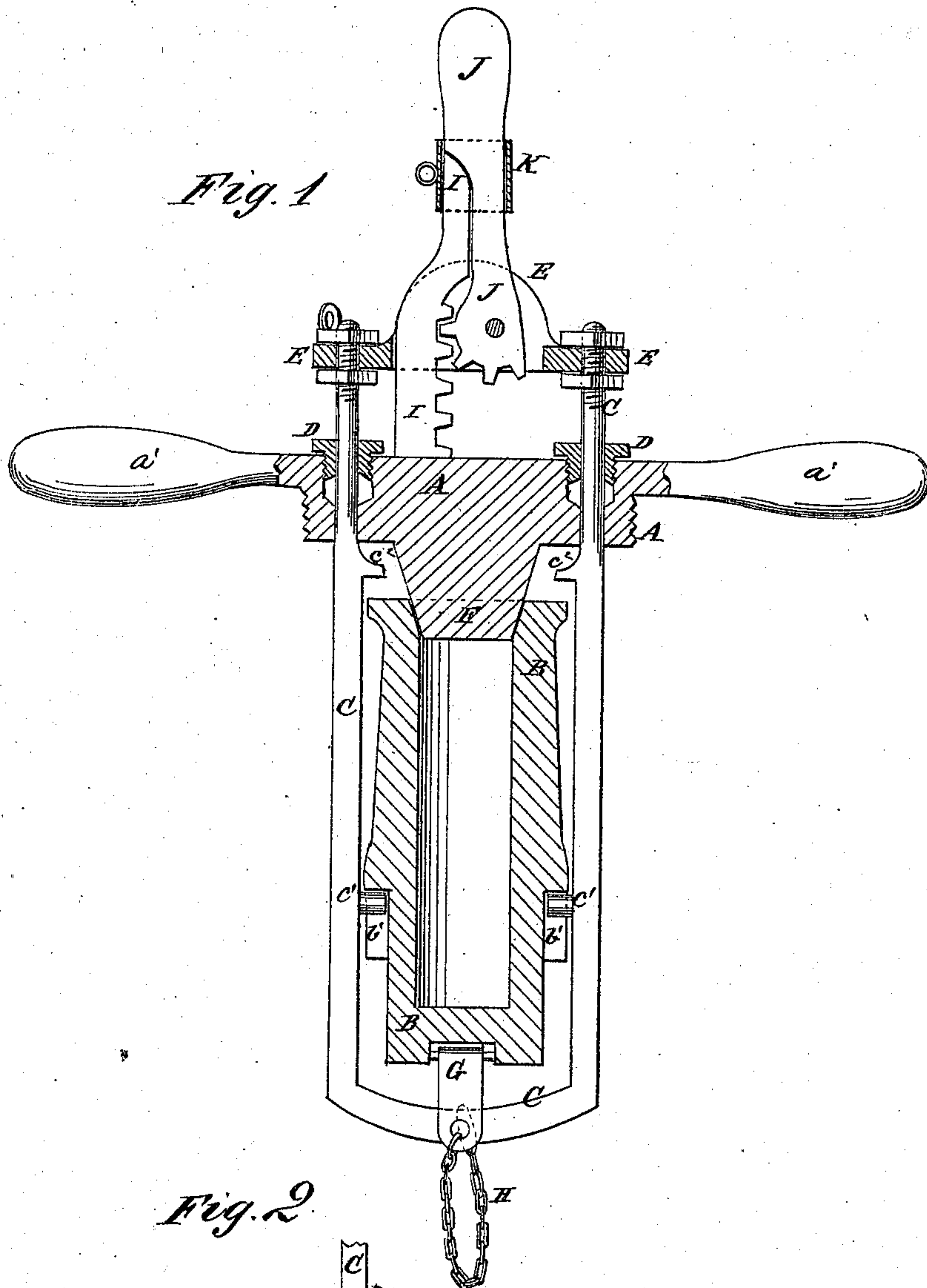


I. C. ANDREWS.
Portable Fire-Extinguishers.

No. 143,605.

Patented Oct. 14, 1873.



Witnesses:
A. W. Almquist
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UNITED STATES PATENT OFFICE

ISAAC C. ANDREWS, OF NEW YORK, N. Y.

IMPROVEMENT IN PORTABLE FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. 143,605, dated October 14, 1873; application filed July 5, 1873.

To all whom it may concern:

Be it known that I, ISAAC C. ANDREWS, of New York city, in the county and State of New York, have invented a new and useful Improvement in Portable Fire-Extinguisher, of which the following is a specification:

In the accompanying drawing, Figure 1 is a vertical section of a part of a fire-extinguisher, illustrating my invention. Fig. 2 is a detail view, showing how the acid-bucket is suspended.

My invention has for its object to improve the construction of portable fire-extinguishers, so as to make them more convenient in use, more reliable in operation, the operating parts not being liable to stick fast from corrosion, and which shall at the same time be simple in construction.

The invention will first be fully described, and then pointed out in the claims.

A represents the top or cover of the outer or alkali vessel, which vessel is not shown in the drawings. The cover A is provided with handles *a'* in the ordinary manner. B is the inner bucket or vessel for containing the acid, in the opposite sides of the lower part of which are formed V-shaped notches *b'*, to receive the pins *c'*, formed upon the inner sides of the arms of the bow or U shaped bar C. The ends of the arms of the bow C pass up through stuffing-boxes D in the cover A, and their ends are secured to the ends of the cross-bar or yoke E by nuts, as shown in Fig. 1, or by other convenient means. Upon the lower or inner side of the cover A is formed, or to it is securely attached, a stopper, F, which fits into the mouth of the acid-bucket B, as shown in Fig. 1. The bottom of the acid-bucket B is recessed to receive a loop or hinge, G, which is connected with the bow C by a short chain, H. To the upper or outer side of the cover A is rigidly attached the end of a rack-bar, I, which passes up through a longitudinal slot in the yoke E, in which slot is pivoted the lower end of the lever J, upon the lower end of which is formed a segmental gear-wheel, the teeth of which mesh into the teeth of the rack-bar I, so that by operating the lever-ratchet J the bow C may be lowered and raised. Upon the inner sides of the arms of the bow C are formed toes *c''*, which, as the said bow is lowered, strike against the upper edge or mouth of the acid-bucket B, and push it off the stopper F. This allows the bucket B to tip over, and as it approaches

a horizontal position the peculiar form of the sockets *b'* allows it to escape from the bow C, and it drops, bottom upward, into and hangs suspended in the alkali solution in the middle of the lower part of the outer or alkali vessel. The rapidity of descent of the bucket B causes it to carry the greater part of the acid with it, which acid is thus discharged in the midst of the alkali solution, with which it thus becomes thoroughly and evenly mixed, the swinging motion of the suspended bucket B greatly assisting the mixing.

The movements of the various parts in discharging the acid are thus downward, so that should they become corroded the corrosion will not affect their operation, however long the apparatus may have stood.

The upper part of the rack-bar I and the ratchet-lever J are so formed that they will fit closely together, and the lever J is provided with a slide, K, which may be slipped down over the upper end of the rack-bar I to hold the said lever J in place.

The slide K may be secured from being raised accidentally, or by those not acquainted with the apparatus, by a small chain or cord connected with the said slide and with the yoke E.

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

1. The combination, with an acid-vessel resting on pivots *c'* *c'*, and a stopper-cover, A F, holding it upright, of rack, pinion, and sleeve I J K, as described, so that the acid-vessel may be locked in an erect position.

2. The V notches or sockets formed in the opposite sides of the acid-vessel B for suspending it detachably, substantially as herein shown and described.

3. The stopper E for the acid-vessel B, attached permanently to the cover A, substantially as herein shown and described.

4. The toes *c''*, formed upon the arms of the bow C, for detaching the acid-vessel B from the stationary stopper F by the downward movement of the said bow C, substantially as herein shown and described.

5. The combination of the rack-bar I, ratchet-lever J, and yoke E with the cover A and bow C, for operating said bow, substantially as herein shown and described.

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