(No Model.)

E. J. O'BRIEN & E. SCHAEFER.

FIRE EXTINGUISHER.

No. 560,277. Patented May 19, 1896.

Fig. I.

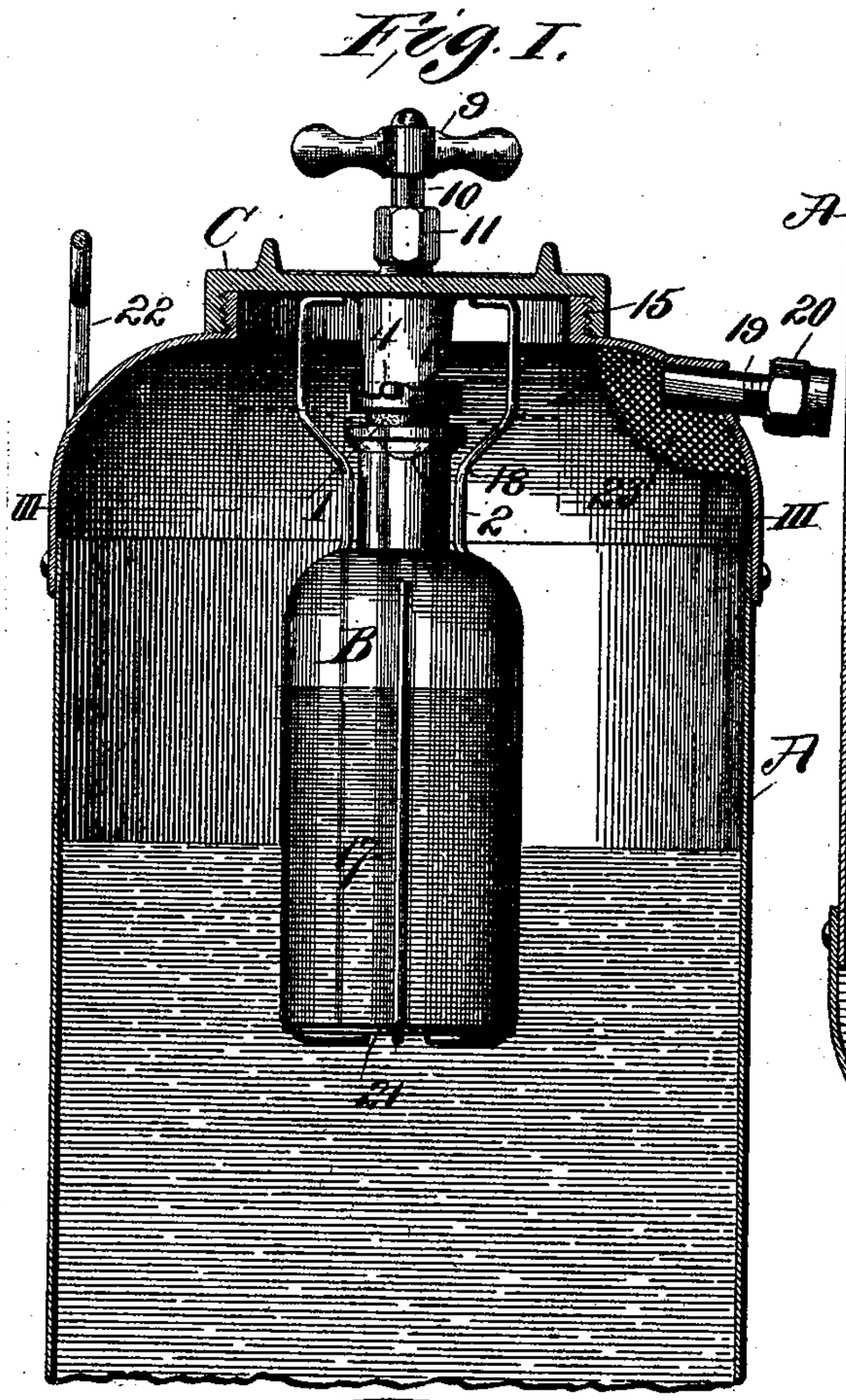


Fig. II.

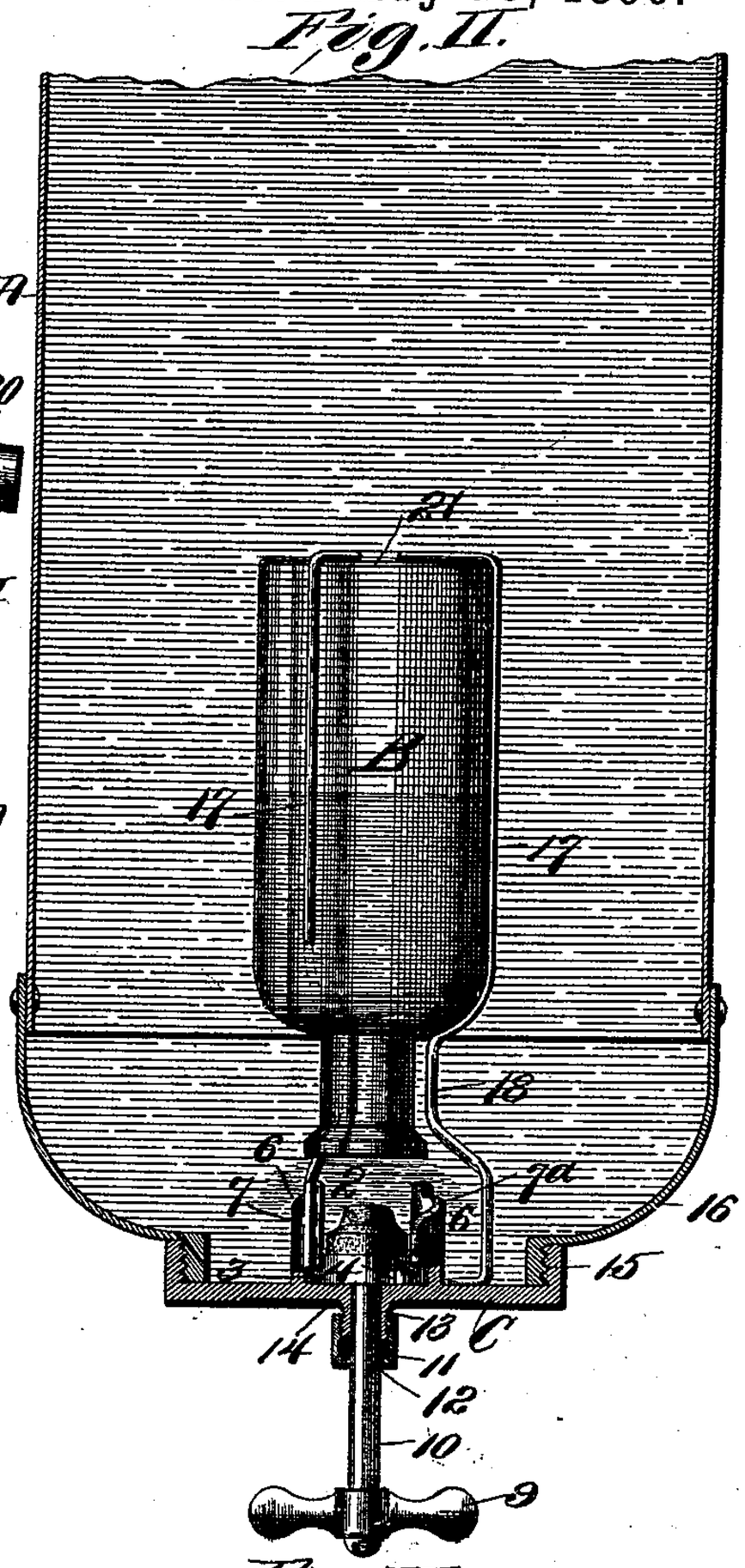


Fig. III.

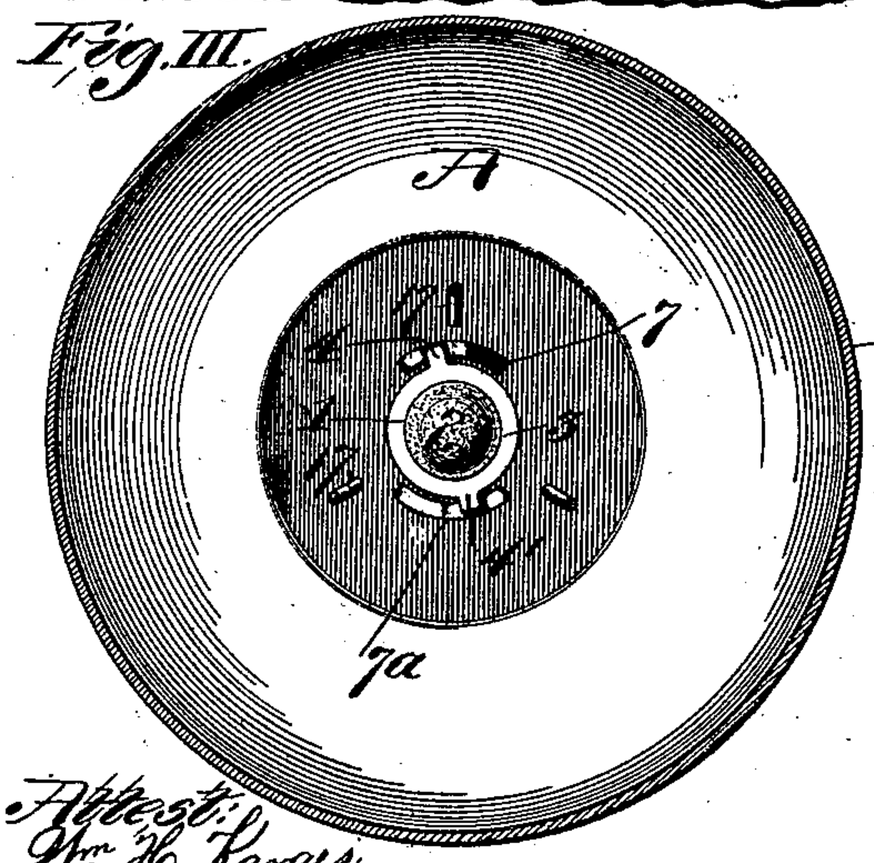


Fig. IV.

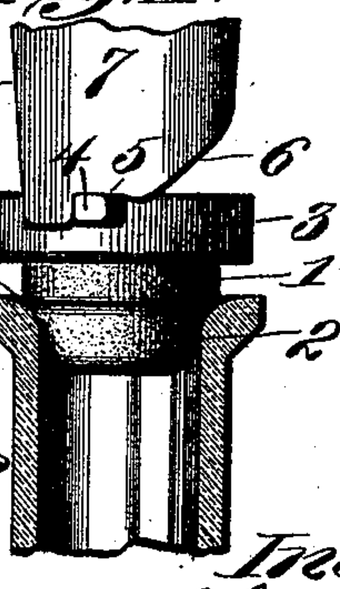
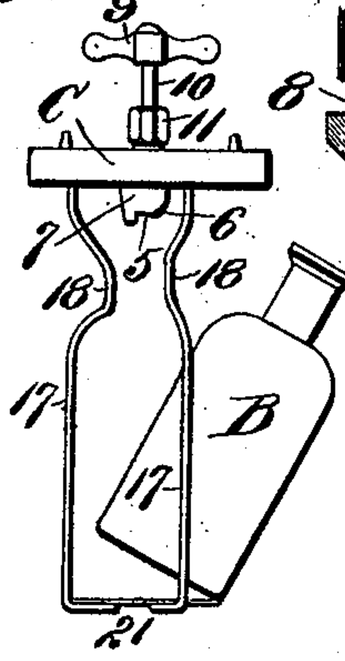


Fig. V.



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UNITED STATES PATENT OFFICE.

EDWARD J. O'BRIEN AND EDWARD SCHAEFER, OF ST. LOUIS, MISSOURI.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 560,277, dated May 19, 1896.

Application filed November 4, 1895. Serial No. 567,849. (No model.)

To all whom it may concern:

Be it known that we, EDWARD J. O'BRIEN and EDWARD SCHAEFER, of the city of St. Louis, in the State of Missouri, have jointly invented a new and useful Improvement in Fire-Extinguishers, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

Our invention belongs to the kind of fire-extinguishing devices known as "chemical," wherein is employed a strong acid, such as sulfuric or muriatic acid, which is contained in a vessel adapted to be located and operated in a close sheet-metal outer tank containing a solution of bicarbonate of soda and water, the commingling of the two bodies of acid and alkali constituting the active principle of the machine and the resultant body of mixed carbonic-acid gas and water-vapor being cast upon a fire through an opening and suitable hose and nozzle, and thereby extinguishing the fire.

The invention seeks to provide means for securely locking the stopper of the acid-holder and to so construct the device that its operation will be simple and direct and its recharging may be effected without the loss or injury of any of its parts. We attain these objects in the manner illustrated by the drawings, in which—

Figure I is an upright perpendicular view in cross-section of an extinguisher-tank having the base broken away and showing our improvement and acid-holder closed in place therein. Fig. II is a similar view of the same inverted, showing the stopper and parts open and in position of discharging the machine. Fig. III is a cross-sectional bottom view of our improvement, taken on central dotted line 3 3, Fig. I. Fig. IV is a sectional view showing curved depending plate and junction therewith of our stopper and the acid-bottle by the lug and shoulder used in operating. Fig. V is a diagrammatic view showing the position of the acid-bottle receiving the acid in charging.

Similar letters and figures have reference to similar parts throughout the drawings.

In the drawings, A, B, and C, respectively, represent the main tank, the acid-holder, and the cap or cover of the main tank, and 1, 2, and 3 together constitute the stopper, of which 1 is the central part, 2 the base, and 3 the rim. The base part 2 is ogee or conoidal in bottom outline, thus allowing of its being gradually embraced by and adapted to the mouth 8 of the acid-bottle, when it is operated perpendicularly by the rod 10 and handle 9 with which it is connected. This contact of the stopper with the mouth of the acid-bottle is best obtained by the stopper of the form shown herein, being made of rubber, lead, or other like suitable material. 4 and 4′ represent lugs or pins that project out from the periphery or rim 3 of the stopper. 10 is a straight smooth perpendicular rod having the handle 9 at its upper end and carrying the stopper, which is attached to the lower end thereof at 14. This rod is contained and operated in the middle of cap C and stuffing-box 11, which it enters at 12.

7 and 7ª are curved metal plates which depend downwardly from the inside of the cap C at a part equidistant from its center, so that the curved edge 6 of the plate or plates 7 7ª will intercept the lugs 4 and 4′, and thereby guide and hold or release the stopper to and from its seat over the mouth of the acid-bottle when the handle 9 of the rod 10 is turned toward or from the shoulders 5 5 and raised or lowered by the hand.

The acid-bottle is located in a cage formed by the wires 17 17, fastened at their upper ends to the inside of the cap C and having their lower ends turned in and fastened to the disk 21 by solder or otherwise. There is an indentation or shoulder 18, formed on the cage-wires 17, whereby the bottle is held down in place when the machine is operated. The outer tank in machines of this type has a cross wire or handle at the bottom, whereby it may be held upside down. We have not shown this part in the drawings, it being a well-known feature and because our improvement does not necessitate it, as this device does not require complete inversion in order to be effectually operated, as machines employing a weight or break-ball to destroy the acid-holder do. When it is required to charge this machine, the bottle B is withdrawn through the cage-wires, which readily yield thereto, until it is in the position indicated by diagrammatic view, Fig. V. Then the re-

quired amount of acid is poured into it, and it is returned to its normal upright position within the cage. The outer tank is then filled with water for about seven-eighths of its capacity and the bicarbonate of soda added and agitated or shaken until the soda is dissolved. Then screw the cap C, carrying the acid-holder, &c., in its place on the outer tank, and the handle 9 given a half-turn, and it is complete, ready to be hung up or shipped until such time as required for use on a fire. When it is desired to discharge the extinguisher, the stopper is given a half-turn by the handle 9, thus releasing the stopper from its supporting lugs and shoulders and leaving it free to be raised up on the rod 10 by hand. The tank is then turned over until the acid discharges into the alkaline water, and the operation is complete, the contents being discharged by the hose and nozzle.

Having thus described our invention, that which we claim as new, and desire to secure by Letters Patent, is—

1. In a chemical fire-extinguisher, the combination with the tank, and the acid-holder, of a cap for the tank, a stopper for the acid-holder mounted in the cap, and locking-plates depending from the cap and adapted to hold the stopper in the acid-holder.

2. In a chemical fire-extinguisher, the combination with the tank, and the acid-holder, of a cap for the tank, a vertically-movable stopper mounted in the cap and provided with lateral radial lugs, and locking-plates depending from the cap and engaging the said lugs to hold the stopper in the acid-holder.

3. In a chemical fire-extinguisher, the combination with the outer tank, and acid-bottle: of the upright smooth operating-rod, surmounted by a handle and carrying a conoidal-shaped stopper, the curved depending plates engaging the stopper by lugs together with the stuffing-box, and cage depending from the top, all arranged and operating in the manner shown and described and for the purposes set forth.

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