

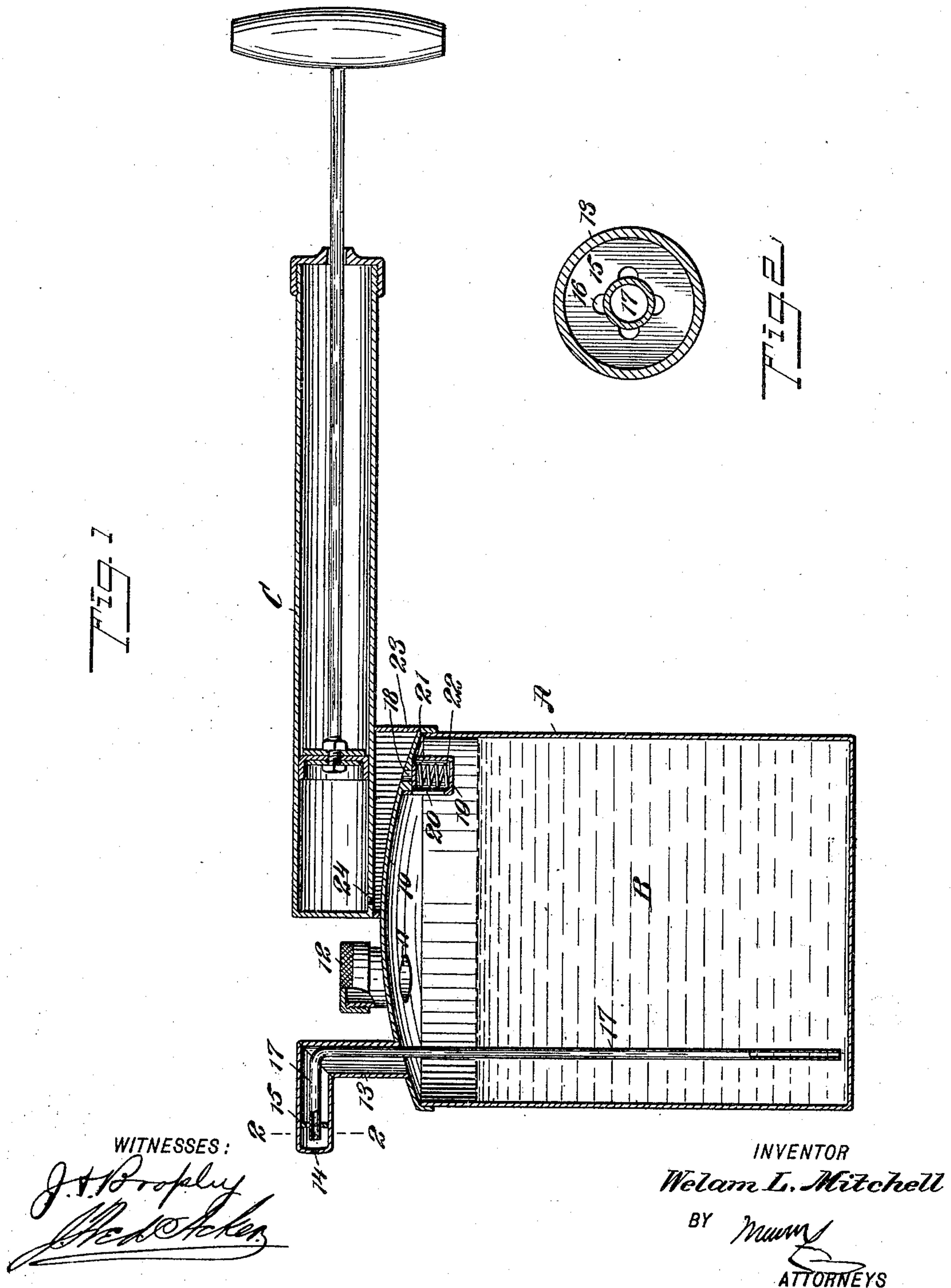
No. 689,107.

Patented Dec. 17, 1901.

W. L. MITCHELL.
DISINFECTING APPARATUS.

(Application filed Mar. 19, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

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DISINFECTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 689,107, dated December 17, 1901.

Application filed March 19, 1901. Serial No. 51,864. (No model.)

To all whom it may concern:

Be it known that I, WELAM L. MITCHELL, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Disinfecting Apparatus, of which the following is a full, clear, and exact description.

The object of the invention is to provide a simple form of hand device which is especially adapted for disinfecting purposes, the device being so constructed that a liquid disinfectant can be readily sprayed over any surface, and a further purpose of the invention is to so construct the device that it will be simple, durable, and effective in service.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a vertical section through the improved device, and Fig. 2 is a section taken practically on the line 2 2 of Fig. 1.

A receptacle A is provided which is adapted to receive a disinfecting material in liquid form. This receptacle A is preferably provided with a dome or arch shaped top 10, in which an opening 11 is made for filling purposes, the opening being normally closed by a suitable cap 12, as shown in Fig. 1. At what may be termed the "front" portion of the receptacle A an angular or L-shaped spraying-tube 13 is located, the said tube being in direct communication with the interior of the receptacle A. The outer end of the spray-tube 13 is closed, except that a small aperture 14 is left therein centrally located. Within the horizontal member of this spray-tube 13, near its outer end, a diaphragm or partition 15 is secured in any suitable or approved manner, which diaphragm or partition is provided with a central opening and with recesses 16 in the wall of the said opening, as shown in Fig. 2, these recesses being adapted for the passage of air to the space between the diaphragm or partition and the outlet end of the spray-tube 13. A liquid-supply pipe 17 extends from the bottom por-

tion of the receptacle A up through the vertical portion of the spray-tube 13 and also nearly through the horizontal portion of said tube, as shown in Fig. 1. This liquid-supply tube passes through and is fitted in the opening which is made in the partition or diaphragm 15, but stops short of the outer end of the spray-tube 13, as is also shown in Fig. 1.

An opening 18 is made in the top of the receptacle A, usually opposite the spray-tube 13, and around this opening a valve-casing 19 is constructed, which extends down within the receptacle A. This valve-casing is provided, preferably, with a side opening 20, and a valve 21 is located in this casing, adapted to normally close the opening 18, the valve being held in its closed position by a spring 22 or its equivalent. Above the opening 18, leading to the valve-casing 19, a box 23 is constructed upon the top of the receptacle A, and the inner end of an air force-pump C, of any suitable construction, is secured to the said box-casing 23, closing the top thereof; but the outlet 24 of the said air-pump C is at its inner end and communicates with the interior of the box-casing 23 at a point removed from the inlet 18 to the valve, so that an air-cushion is always provided above the inlet 18 to the valve, enabling said valve to gradually seat itself and also preventing the air forced from the pump acting directly on the valve 21, the cushion of air in the casing 23 being that which acts positively on the valve.

In the operation of the device when the pump C is manipulated and the receptacle A is charged with a disinfecting material the air from the pump forces the valve 21 to open and enters the space above the liquid disinfectant, commingling therewith, and the liquid disinfectant, mixed with a certain quantity of air, is forced up through the liquid-supply pipe 17 to the nozzle-section of the spray-pipe 13, while the air above the liquid disinfectant is likewise forced up through the spray-pipe 13 and out to the nozzle through the openings 16 in the diaphragm or partition 15. The air under pressure mingles with the liquid disinfectant in the space between the outlet of the liquid-supply pipe 17 and the nozzle, and the air and liquid commingled are forced out at the nozzle end of the spray-pipe 13 in the form of a spray. It will be understood that this spray

may be made to reach some distance, as considerable air-pressure may be brought to bear upon the material in the receptacle A through the rapid operation of the plunger on the air-

5 pump.

It will be understood that the valve 21 will maintain the air under pressure upon the column of liquid in the receptacle, and since the spray-nozzle does not require all the stored air
10 for operation the spray will continue even after the pump has ceased to operate.

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

15 1. In a disinfecting apparatus, a liquid-receiving receptacle, an air-chamber connected with said receptacle, an air-pump having its outlet communicating with said air-chamber, a valve-controlled air-inlet for the said re-
20 ceptacle in communication with the said air-chamber, a spray-pipe, and means for conducting liquid and air to the outlet of the spray-pipe, as described.

2. In a disinfecting apparatus, a receptacle
25 adapted to contain a disinfecting fluid, said receptacle being provided with an inlet at its top, a valve-casing extending within the said receptacle and surrounding said inlet, a spring-controlled valve within the said cas-
30 ing, adapted to normally close the said inlet, a spray-pipe connected with the upper portion of the receptacle, a box forming an air-chamber arranged above the inlet leading to the valve-casing and communicating there-
35 with, an air force-pump attached to the box,

having communication with the interior thereof, and means, substantially as shown and described, for mingling air and liquid in the spray-pipe at its nozzle end, as and for the purpose set forth.

3. In a disinfecting apparatus, the combination, with a receptacle provided with an inlet at its top, a valve-casing surrounding said inlet and extending within the said receptacle, and in communication with the interior of the receptacle, a spring-controlled valve located within the casing, and a spray-tube in communication with the interior of said receptacle, of a box-casing located upon the receptacle over the inlet therein, an air force-pump secured to said box-casing and closing the same, the outlet in the said pump being removed from the air-inlet for the said receptacle, a liquid-supply pipe extending from the receptacle and through the spray-pipe to a point near the outlet of said pipe, and a partition or diaphragm located within the spray-pipe, through which the liquid-supply pipe passes, the said partition or diaphragm being provided with apertures adjacent to that portion of the liquid-supply pipe which passes through said diaphragm or partition, as described.

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

WELAM L. MITCHELL.

Witnesses:

J. FRED. ACKER,
JNO. M. RITTER.