

No. 644,131.

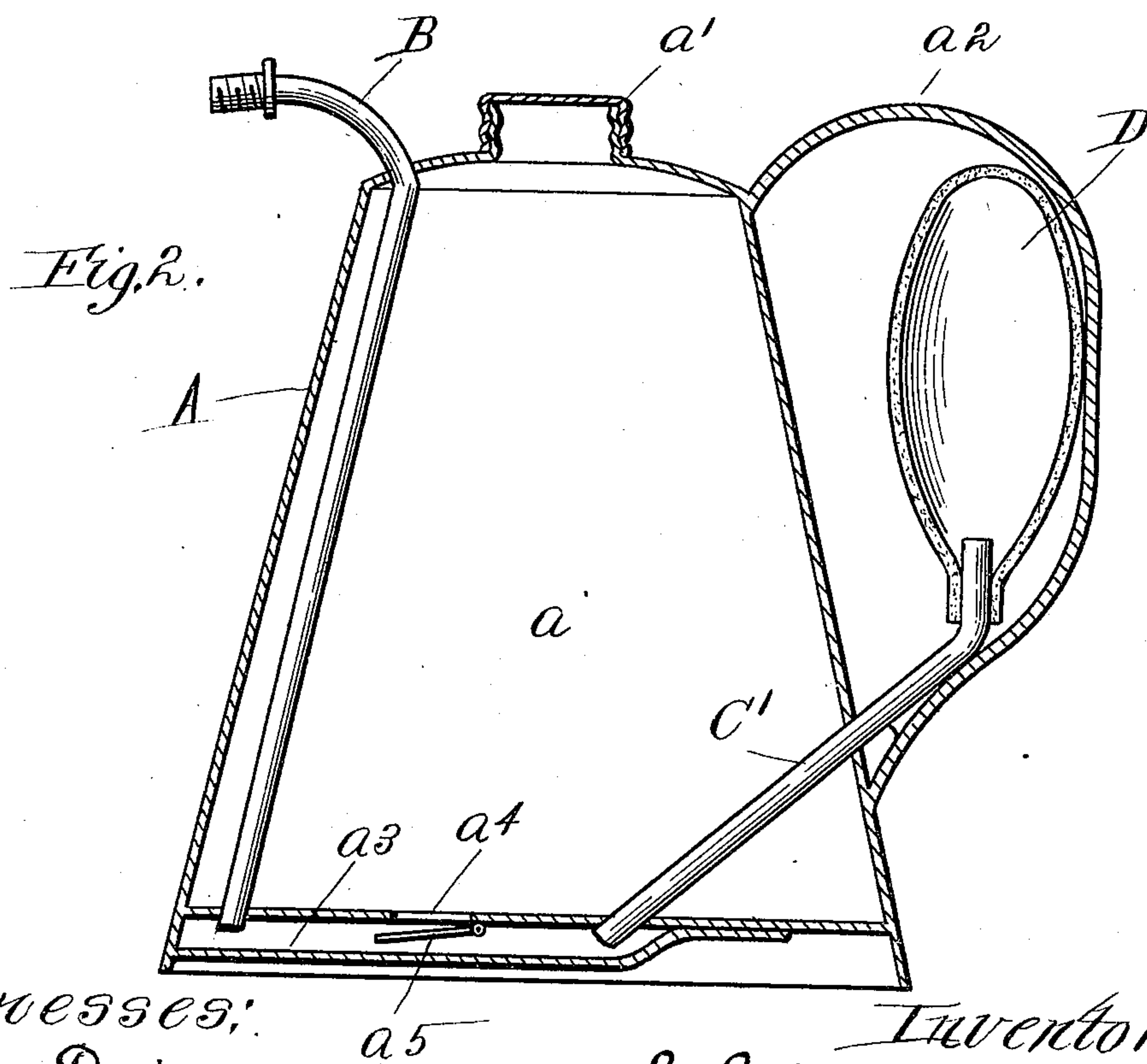
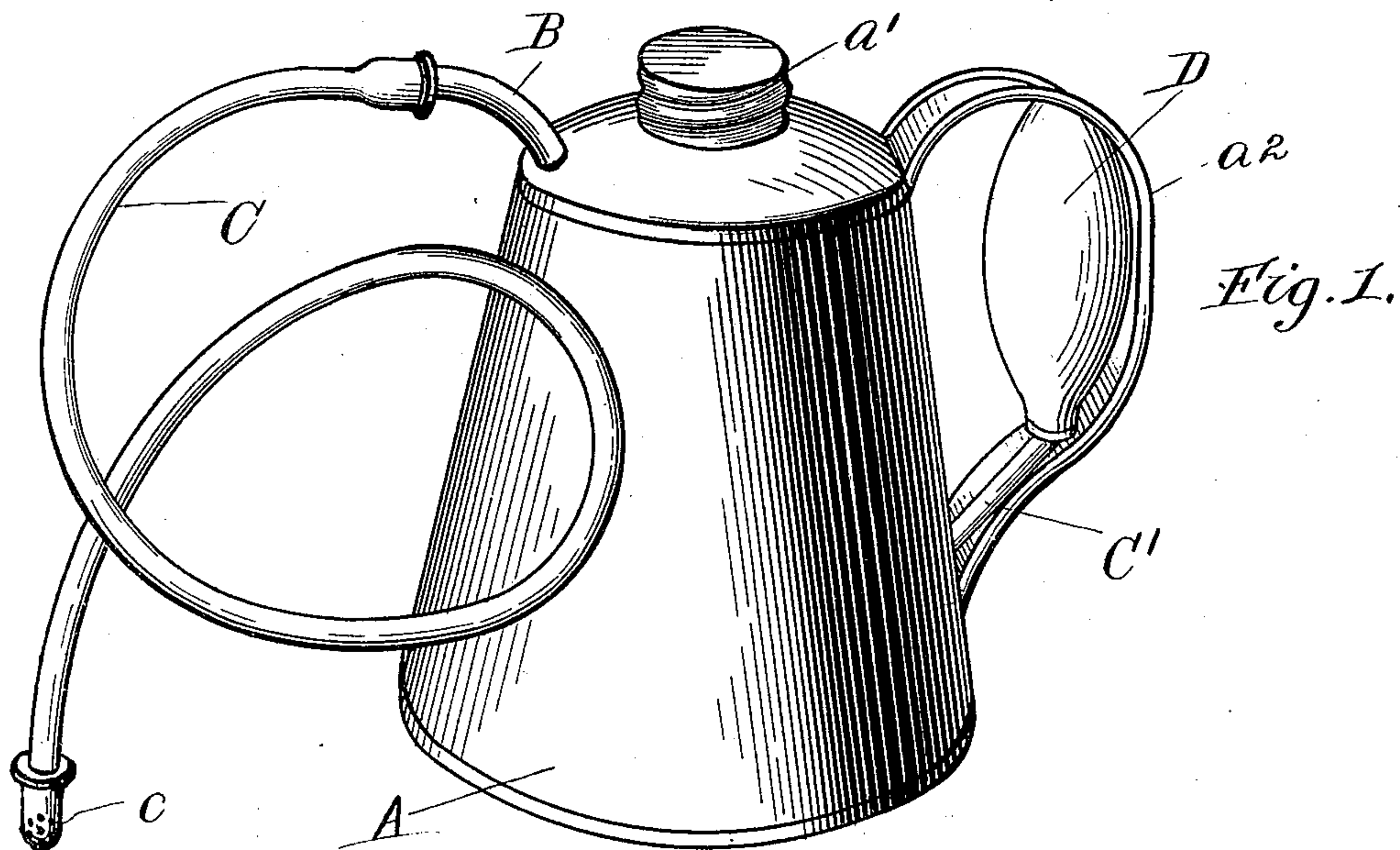
Patented Feb. 27, 1900.

E. E. ERTSMAN.

FORCE CAN.

(Application filed May 24, 1899.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## FORCE-CAN.

SPECIFICATION forming part of Letters Patent No. 644,131, dated February 27, 1900.

Application filed May 24, 1899. Serial No. 718,073. (No model.)

*To all whom it may concern:*

Be it known that I, EMANUEL EDWARD ERTSMAN, a citizen of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Force-Cans, of which the following is a specification.

My invention relates to receptacles adapted to contain a quantity of liquid and provided with means for ejecting the fluid from their spouts or nozzles; and the invention relates more particularly to devices of this character which may be held and operated with one hand.

The objects of my invention are to provide a simple, efficient, and inexpensive construction of force-can which may be conveniently held and operated with one hand, to dispense with all devices—such as pistons, plungers, levers, &c.—for ejecting the fluid from the can or receptacle and to provide in lieu thereof a compressible rubber bulb, to effectually exclude air from such compressible bulb, and to permit the latter to be compressed and the fluid thereby ejected by simply tightening the grasp of the hand upon the handle of the can, and also to provide a device of this character which will not be liable to get out of order.

To the attainment of the foregoing and other useful ends my invention consists in matters hereinafter described and claimed.

Figure 1 is a perspective of a force-can constructed in accordance with my invention. Fig. 2 is a vertical section of the same.

The invention as thus illustrated consists of a can or receptacle A of suitable size and shape and adapted to afford a reservoir-chamber  $a$  for the liquid. Preferably the upper portion of the can is provided with a screw-threaded cap or cover  $a'$ , which can be removed when the reservoir  $a$  is to be filled, and the side of the can may be provided with a loop-like handle  $a^2$ . The can is also provided with a suitable spout or nozzle B, and for some purposes I find it desirable to adapt the end of the said spout for connection with a flexible rubber tube C'. The form of spout or nozzle is, however, unimportant and may be varied according to the purpose for which the can is to be employed. A portion of the can's bottom may be constructed with double walls, so as to provide a relatively-small

chamber  $a^3$ , and the spout or nozzle of the can may be extended downward and connected with such chamber, substantially as illustrated in Fig. 2. A pipe C' is also preferably arranged to extend from said chamber to a point within the handle  $a^2$ , and the outer end of this pipe is provided with a flexible or compressible bulb D. The reservoir-chamber  $a$  is in communication with the chamber  $a^3$  by reason of the opening  $a^4$ , and such opening is provided with a check-valve  $a^5$ , which opens to permit fluid to pass from the chamber  $a$  to the chamber  $a^3$ , but which closes promptly to prevent a backflow from the latter to the former. With this arrangement the interior of the bulb is of course in constant communication with the spout or nozzle of the can, and the passage which leads from the bulb to the nozzle may be said to have a valved connection with the reservoir. The said compressible bulb may be made of rubber or any other suitable material, and its interior is designed to afford an ejecting-chamber—that is to say, a chamber into which the fluid may be drawn from the reservoir and then ejected from the can by way of the latter's spout or nozzle. To this end the said bulb is preferably arranged within the handle in such manner that the two may be grasped together, and with such arrangement it is obvious that the contents of the reservoir may be ejected from the nozzle by simply alternately tightening and loosening the grasp of the hand upon the bulb. The valve  $a^5$  opens each time the bulb is allowed to expand and closes each time the walls of the bulb are collapsed by the pressure of the fingers. In this way a portion of the fluid within the reservoir will first be drawn into the bulb by way of the opening  $a^4$ , the chamber  $a^3$ , and the pipe C' and will then be discharged from the bulb by way of the pipe C', the chamber  $a^3$ , and the spout or nozzle B. A force-can thus constructed and operated is light, simple, and inexpensive and may be employed for various purposes—such as embalming, sprinkling, disinfecting, and oiling machinery. A loop-handle such as shown is particularly adapted for the purpose, as it serves as a sort of guard for the bulb and prevents the fluid from being accidentally ejected from the can; but it is ob-



vious that various forms of handle may be employed for this purpose, and for this reason I do not limit myself to the form shown and described, and it is likewise obvious that the form or shape of the can may also be varied without in any way departing from the spirit of my invention and, furthermore, that the two pipes may be dispensed with and the can simply constructed with the necessary passages formed within its walls. The device thus constructed involves nothing complicated or anything that would be liable to get out of order.

To seal the can, a small cap may be screwed upon the threaded end of the nozzle, and by then screwing down the cap *a'* the can may be carried in a satchel without danger of spilling its contents. The outer end of the tube C can be provided with a spray-nozzle *c* or any other form of nozzle desired. When I employ the pipe C', the same is preferably soldered to the lower part of the handle, as this serves to strengthen the juncture of the handle with the can. It will also be seen that with the foregoing arrangement a portion of the passage leading from the bulb to the nozzle is at all times full of fluid and that this effectually prevents air from entering the bulb. A further advantage consists in removably securing the bulb to the pipe C', so as to permit the bulb to be readily removed and replaced by a new one or for the purpose of permitting the bulb to be readily removed and cleaned.

What I claim as my invention is—

1. A receptacle provided with a nozzle and a handle, and a compressible bulb arranged between the handle and the receptacle in such manner that the handle serves as a guard for the bulb; the said bulb having a passage which leads from its interior and communicates with the nozzle and also with the interior of the receptacle, whereby the fluid may be drawn from the receptacle into the bulb and from the latter ejected through the nozzle, the said passage serving to both admit the fluid to and conduct it from the said bulb.

2. A receptacle provided with a nozzle and a handle, and a compressible bulb arranged adjacent to said handle and in such position that the two may be grasped together; the said bulb having a passage leading from its interior and communicating with the said nozzle, and the said passage being provided with a lateral valved opening which permits the fluid to enter the passage from the receptacle, whereby the fluid may be drawn into the bulb by way of said valved opening and said passage and then ejected from the bulb by way of said passage and said nozzle.

3. A receptacle provided with a nozzle and a handle, and a compressible bulb arranged adjacent to said handle and in such position that the two may be grasped together, the said bulb having suitable connection with the interior of the receptacle and also with the

nozzle, whereby the fluid may be drawn from the receptacle into the bulb and from the latter ejected through the nozzle, and a portion of the passage through which the fluid is thus ejected from the bulb being suitably connected with the interior of the receptacle and thereby normally filled with fluid to prevent air from entering the bulb.

4. A receptacle provided with a nozzle and a loop-shaped handle, and a compressible bulb arranged within the handle in such manner that the latter serves as a guard for the former, the said bulb having suitable connection with the nozzle and also with the interior of the receptacle, whereby the fluid may be drawn from the receptacle into the bulb and from the latter ejected through the nozzle by simply compressing the bulb against the inner surface of the said handle.

5. A receptacle provided with a nozzle and a loop-shaped handle, and a compressible rubber bulb arranged within said handle in such manner that the latter serves as a guard for the former, the said bulb having suitable connection with the nozzle and also with the interior of the receptacle, whereby the fluid may be drawn from the receptacle into the bulb and from the latter ejected through the nozzle by compressing the bulb against the inner surface of the handle, and a portion of the ejecting-passage being maintained full of fluid for the purpose of preventing an admission of air to the said bulb.

6. A receptacle provided with a nozzle, a compressible bulb arranged external to said receptacle, and a single passage for connecting the bulb with the nozzle, a portion of said passage being substantially at or near the bottom of the chamber provided by the receptacle and such portion of the passage being provided with a valved opening which permits fluid to enter from the said chamber, whereby the fluid may be drawn from the receptacle into the bulb, by way of said passage and said valved opening, and then ejected from the bulb by way of such passage and said nozzle.

7. A receptacle provided with a nozzle and a loop-shaped handle, a compressible rubber bulb arranged within said handle in such manner that the latter forms a guard for the bulb, the said bulb being removably connected at one end with a pipe which leads to the interior of said receptacle, suitable means of communication being also provided between the nozzle and bulb and between the nozzle and the interior of said receptacle, whereby the fluid may be drawn from the latter into the bulb and then ejected through the nozzle by simply compressing the bulb against the inner surface of the handle.

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