(No Model.)

J. E. ALBINSON.

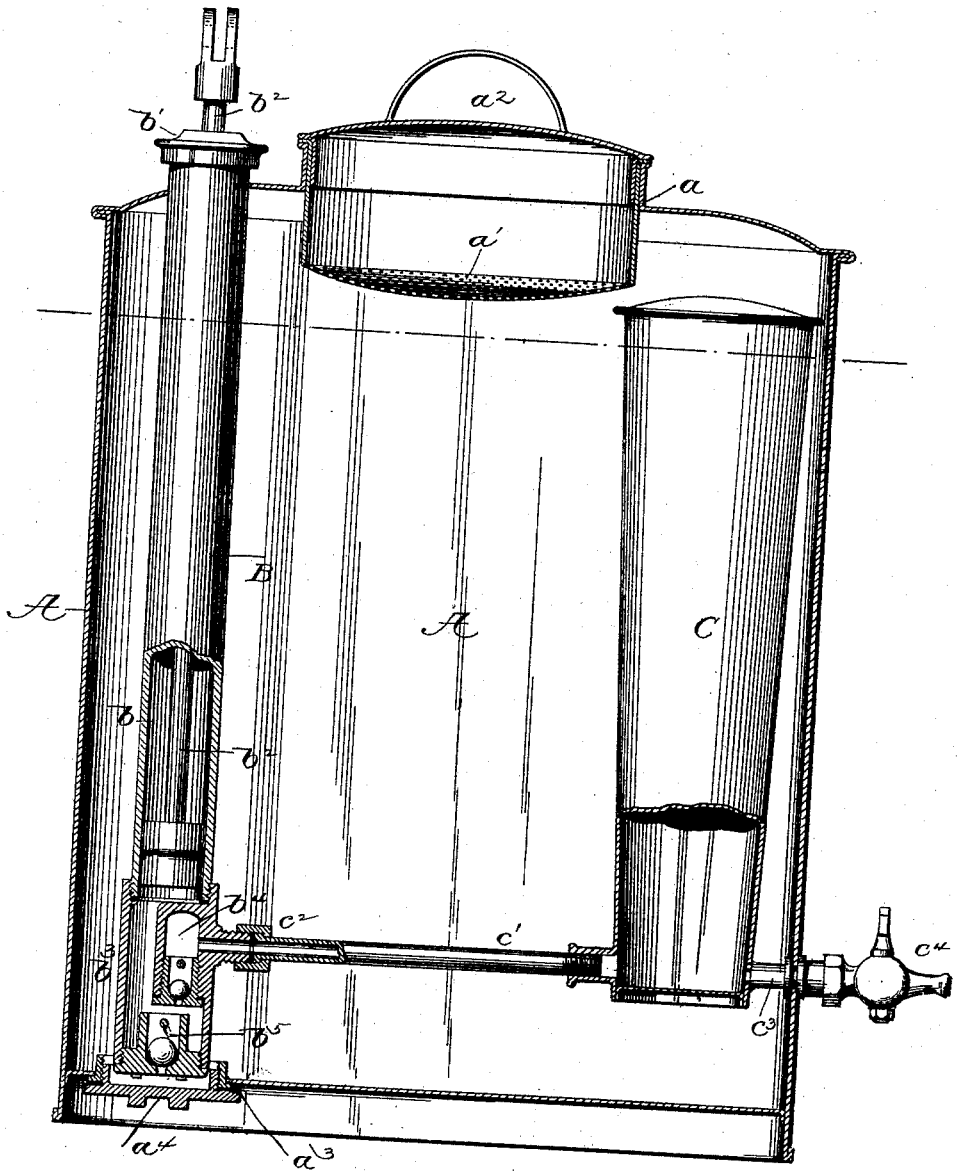
2 Sheets—Sheet 1.

PORTABLE SPRAYER.

No. 489,780.

Patented Jan. 10, 1893.

Fig. 1.



Witnesses:

William W. Mortimer

F. S. Elmore

Inventor:

Jas. E. Albinson

by Chas. W. Tilt

Atty

(No Model.)

2 Sheets—Sheet 2.

J. E. ALBINSON.

PORTABLE SPRAYER.

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Fig. 2.

on line 2-2

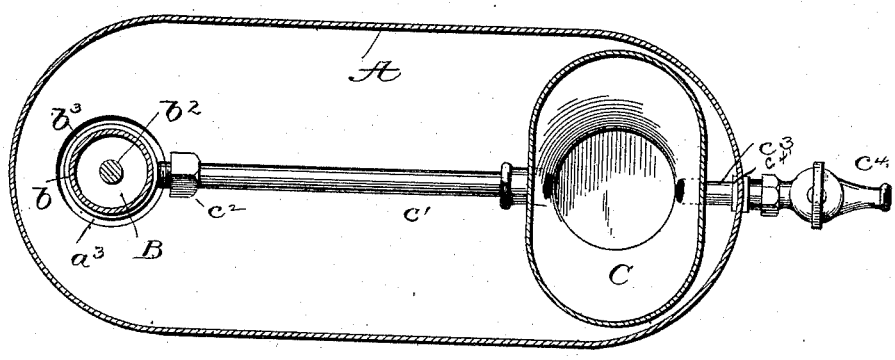
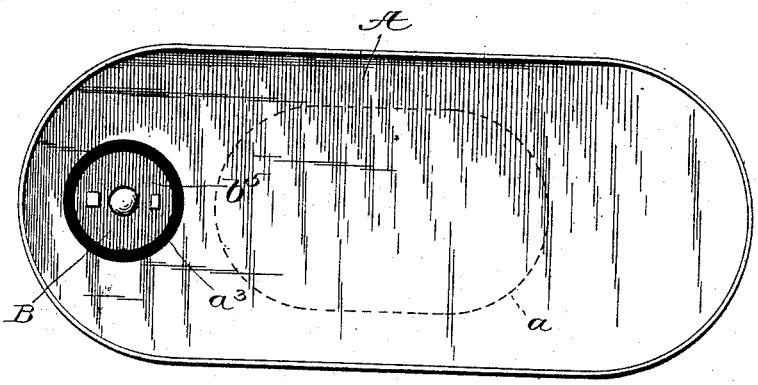


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES EDWIN ALBINSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

PORTABLE SPRAYER.

SPECIFICATION forming part of Letters Patent No. 489,780, dated January 10, 1893.

Application filed March 24, 1891. Serial No. 386,181. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWIN ALBINSON, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Portable Sprayers, of which the following is a specification, reference being had therein to the acompanying drawings.

This invention relates to apparatus for spraying trees and other vegetation and particularly that class of apparatus in which a chemical solution contained on a portable receptacle is forced by means of a pump into an air chamber and thence allowed to escape at will, through the medium of cocks or similar appliances.

The object is to simplify and cheapen the construction of such apparatus and particularly to afford means for assembling and uncoupling the parts within the sealed receptacle without mutilating or destroying the receptacle itself and consists essentially in an outer casing or reservoir for the solution, a pump situated within the reservoir operated from without, an opening directly beneath and in line with the pump, a removable cap closing said opening, an air-chamber and pipes or connections affording communication from the pump to the nozzle through the air chamber so arranged as to support the air chamber in a vertical position within the reservoir and furthermore in the peculiar construction and arrangement of the air chamber and pump which admits of their removal and replacement at will.

I have illustrated the invention in the accompanying drawings in which

Figure 1 represents a vertical sectional view of a spraying apparatus constructed in accordance with my invention. Fig. 2 is a horizontal section of the same on the line 2 2 of Fig. 1 and Fig. 3 a bottom plan view of the same, the screw cap being removed.

In the drawings A represents the outer casing or receptacle constructed of copper, tin, zinc, or other suitable material designed to act as a reservoir for the chemical solution, which is poured into the chamber through an elongated opening a. in its top in which is fitted a sieve a', through which the solution is poured and covered by a removable lid a^2.

B represents the pump consisting of a cylinder, b, fixed rigidly to the top of the casing A and extending downward into the reservoir, its upper end protruding through the top of the casing and fitted with a screw cap b' through which the piston rod b^2 works. To the lower end of the cylinder is screwed a short cylindrical casting b^3, containing the valves b^4, b^5, arranged in close proximity to each other and readily accessible through an opening a^3 directly thereunder and securely sealed by a screw-cap a^4.

The air-chamber C is of flattened conical form, its upper and larger end being of approximately the same shape as the opening in the top of the reservoir through which it is introduced. From one side of this air-chamber at its lower end extends a threaded tubular projection into which is screwed a length of pipe c' affording communication between the chamber and the escape part of the pump to which it is secured by a swiveled coupling nut c^2 thus permitting the securing of the parts after they have been arranged within the casing. Upon the opposite side of the air-chamber is provided an extension of pipe c^3 upon which is mounted a washer $c^{4'}$ designed to abut against the side of the casing, through which the threaded end of the pipe extends, in order to act as a clamp to support the air-chamber rigidly in its upright position when the cock c^4 has been screwed upon the extreme end of the pipe upon the outside of the casing.

The simplicity and compactness of this apparatus are at once apparent. The valves of the pump are both contained in one small casting which can be removed at once through the opening thereunder in case of accident to the valves; or the valves themselves may be removed at will by simply unscrewing them; or after removal of the cap, thus obviating the necessity of removing the entire pump or unsoldering the bottom of the casting as heretofore.

I am aware that it is not new in the manufacture of pumps for sprinkling or irrigating to employ a sealed opening in the bottom of

the reservoir and I do not claim the same broadly.

I am also aware that it is not new to attach the valve cage to the bottom of the pump cylinder and I do not claim the same broadly.

I am also aware that it is not new to place the air chamber relatively to the pump and I do not claim the same broadly, but

I do claim the following as my invention

1. In combination with a tank or reservoir, adapted to being supported and carried on the back and having a sealed opening in the bottom thereof, a pump, placed in alignment with said opening and provided at its lower end with a removable cylindrical valve cage provided with removable ball valve seats all the parts being located substantially as shown and described.

2. In combination with a tank or reservoir, adapted to being supported and carried on the back, having an enlarged opening provided with a strainer cup in its top and a sealed opening in its bottom, a pump, located in said reservoir above the sealed opening and provided at its lower end with a removable cylindrical valve cage said cage having removable valve seats and containing ball valves, and an air chamber located within said tank and provided with coupled supporting pipes communicating between the pump and said chamber and the chamber and the escape cock, all substantially located as shown and for the purposes set forth.

3. In combination with a tank or reservoir adapted to being carried on and supported from the back and provided with a screened opening in its top and a sealed opening in its bottom, a pump located within said tank and an air-chamber located within said reservoir and placed relatively to said pump whereby the weight of the pump is counterbalanced and the tank prevented from tipping while the sprayer is in operation; said chamber being connected with said pump and the escape cock by means of suitable receiving and distributing ports or pipes, all substantially as shown and described.

4. A pump having a cylindrical piston chamber and removable cylindrical valve chambers provided with removable valve seats and situated at one end of said piston chamber substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES EDWIN ALBINSON.

Witnesses:

WALTER T. WRIGHT,

W. W. WRIGHT.