

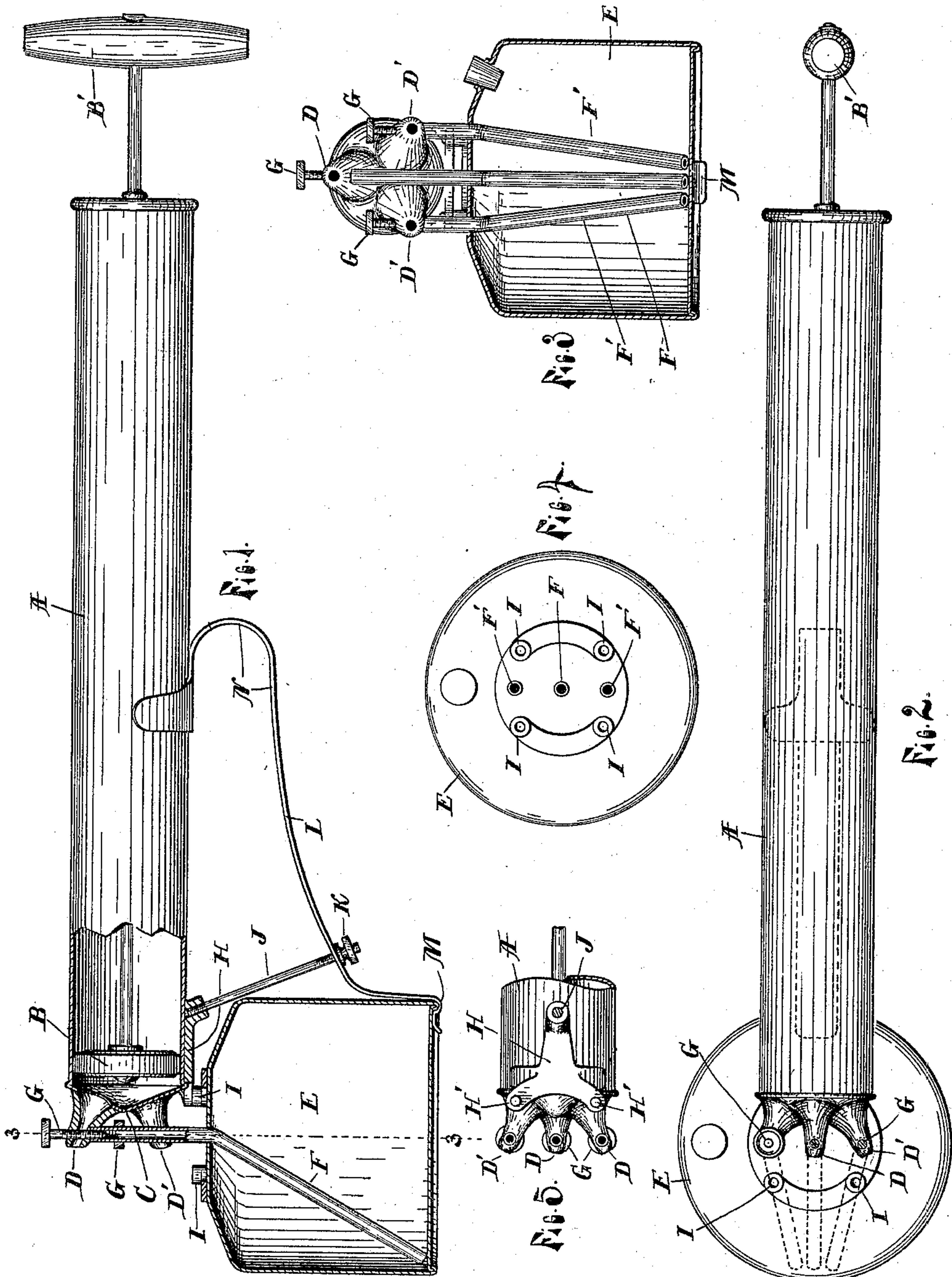
No. 638,435.

Patented Dec. 5, 1899.

W. H. ALLEN.  
SPRAYER.

(Application filed Dec. 17, 1898.)

(No Model.)



WITNESSES:

*Joseph Furman*  
*George Hollway*

INVENTOR:

William H. Allen.

By *Moulton & Flanders*  
Attorneys.



# UNITED STATES PATENT OFFICE.

WILLIAM H. ALLEN, OF SAUGATUCK, MICHIGAN.

## SPRAYER.

SPECIFICATION forming part of Letters Patent No. 638,435, dated December 5, 1899.

Application filed December 17, 1898. Serial No. 699,522. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. ALLEN, a citizen of the United States, residing at Saugatuck, in the county of Allegan and State of Michigan, have invented certain new and useful Improvements in Sprayers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in sprayers, and more especially to sprayers for distributing solutions of paris-green or other materials upon trees, plants, or other vegetation; and its object is to provide the same with means for ejecting a number of streams at one time or a single stream at pleasure, for using a flat-bottomed receptacle and draining its contents fully when throwing spray either at an upward or downward angle, and to provide the device with certain new and useful features hereinafter more fully described, and particularly pointed out in the claims.

My invention consists, essentially, in providing the device with tubes extending from the nozzles to near the angle formed by the side and bottom of the receptacle and adapting these tubes to be reversed relative to the axis of the nozzles, whereby they will drain the receptacle at either an upward or downward inclination of the nozzles, and in the various other novel features hereinafter more fully pointed out, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying my invention, having parts broken away to show the construction; Fig. 2, a plan view of the same; Fig. 3, a front end view of the same, partly in section, on the line 3 3 of Fig. 1; Fig. 4, a plan view of the liquid-receptacle, and Fig. 5 a detail of the fastening for the receptacle.

Like letters refer to like parts in all of the figures.

A is the cylinder of the air-pump, and B the piston of the same, reciprocated by the handle B'.

C is the forward head of the cylinder, provided with a series of diverging nozzles D D' D'.

E is the receptacle for the solution to be

discharged in spray from the nozzles by means of the air-blast through the same.

F F' F' are a series of tubes extending downward from the nozzles D D' D' to the bottom of the receptacle E, the tube F being in the axis of the receptacle and the tubes F' F' at each side of the same, the three tubes being in a row across the axis of the receptacle and in a plane at right angles to the axis of the cylinder A. These tubes converge within the receptacle E and extend vertically through the top of the same and thence diagonally downward, terminating close together and within the angle formed by the bottom and side of the receptacle. By this arrangement when this side of the bottom is lowest the contents of the receptacle will be completely removed by the tubes.

In use it is sometimes desirable to throw the spray at an angle upward and sometimes to throw the same at an angle downward. It therefore becomes necessary to reverse the relative positions of the receptacle and tubes (or at least that of the tubes) to the axis of the nozzles, so as to bring the side where the tubes F F' F' terminate lowest at all times. For this purpose the receptacle E is reversibly attached to the cylinder A by means of a suitable casting H, attached to the cylinder and having at each side the pins H' to engage the openings in bosses I, attached at the respective sides of the top of the receptacle. By engaging these pins with the bosses above the inclined lower ends of the tubes F F' F' the forward end of the device may be inclined downward and the tubes will be in the lower part of the angle of the receptacle, and by engaging the pins with the pair of bosses at the other side the device may be inclined upward, and the same will be the result. To secure the receptacle in place and afford a proper brace to engage the hand holding the cylinder A, I provide a flexible strip of metal L, having a hook M at the lower end to engage the downwardly-extended flange around the bottom of the receptacle E and having a semicircular bend N to engage the hand and having its rear end secured to the cylinder A. To securely hold the hook in engagement and further strengthen the structure, a rod J extends from the casting H diagonally downward and backward through the strip L and



is provided with a thumb-nut K at its lower end, which nut when turned upward on the rod J engages and holds the hook M in engagement and when run down releases the same and permits detachment of the receptacle E. To cut off the flow from any one or more of the nozzles, I provide a screw G for each nozzle, having a milled head to turn the same and extending downward through the nozzle and into the end of the receptacle-tube, which screw when run out opens the nozzle and tube and when run inward each screw simultaneously closes both the nozzle and the adjacent tube. By closing all of these the device is completely closed and the contents cannot be spilled or evaporate.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of an air-pump having a nozzle, a liquid-receptacle having a flat bottom, and a rigid tube extending from the nozzle to near the angle formed by the bottom and side of the receptacle, and means for reversing the angle of the tube relative to the axis of the nozzle by rotating the tube about its vertical axis, substantially as described.

2. The combination of an air-pump having a nozzle, a liquid-receptacle having a flat bottom, and a rigid tube extending vertically from the nozzle through the top of the receptacle and thence diagonally to near the angle formed by the bottom and side of the receptacle, and means for reversing the angle of the tube relative to the axis of the nozzle by rotating the tube about its vertical axis, substantially as described.

3. The combination of an air-pump having a nozzle, a receptacle having a flat bottom, a tube fixed in the receptacle and extending from the nozzle to near the angle formed by the bottom and side of the receptacle, and means for reversing the position of the receptacle and tube relative to the axis of the nozzle, substantially as described.

4. The combination of an air-pump having a series of diverging nozzles, a liquid-receptacle having a flat bottom and reversibly attached to the air-pump, and a series of tubes

arranged in a row across the axis of the receptacle and extending vertically through the top of the same and thence diagonally to near the angle formed by the bottom and side of the receptacle, substantially as described.

5. The combination of an air-pump having a nozzle, a liquid-receptacle having a tube extending vertically through the axis of the top of said receptacle and thence diagonally to near the angle formed by the bottom and side of the receptacle, pins extending downward from the under side of the air-pump, bosses at each side of the top of the receptacle to engage the pins, a strip extending from the air-pump to the receptacle and having a hook engaging the flange on the bottom of the receptacle, substantially as described.

6. In a sprayer, an air-pump having a nozzle, a liquid-receptacle detachably secured to the pump, a tube fixed in the receptacle and extending to the side of the nozzle and detachable therefrom, and a screw passing through the nozzle and into the end of the tube and closing both said tube and said nozzle, substantially as described.

7. In combination with an air-pump and a liquid-receptacle, a casting attached to the pump and having pins, bosses attached to the receptacle to engage the pins, a flexible strip attached to the pump at one end and having a semicircular bend to engage the hand and a hook to engage a flange on the bottom of the receptacle, substantially as described.

8. In combination with an air-pump and a liquid-receptacle, a casting attached to the pump and having pins, bosses on the receptacle to engage the pins, a flexible strip extending from the pump to the lower side of the receptacle and having a hook engaging a flange on the bottom of the same, and a rod extending from the casting on the pump through said strip and provided with a thumb-nut, substantially as described.

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

WILLIAM H. ALLEN.

Witnesses:

LUTHER V. MOULTON,  
LEWIS E. FLANDERS.