

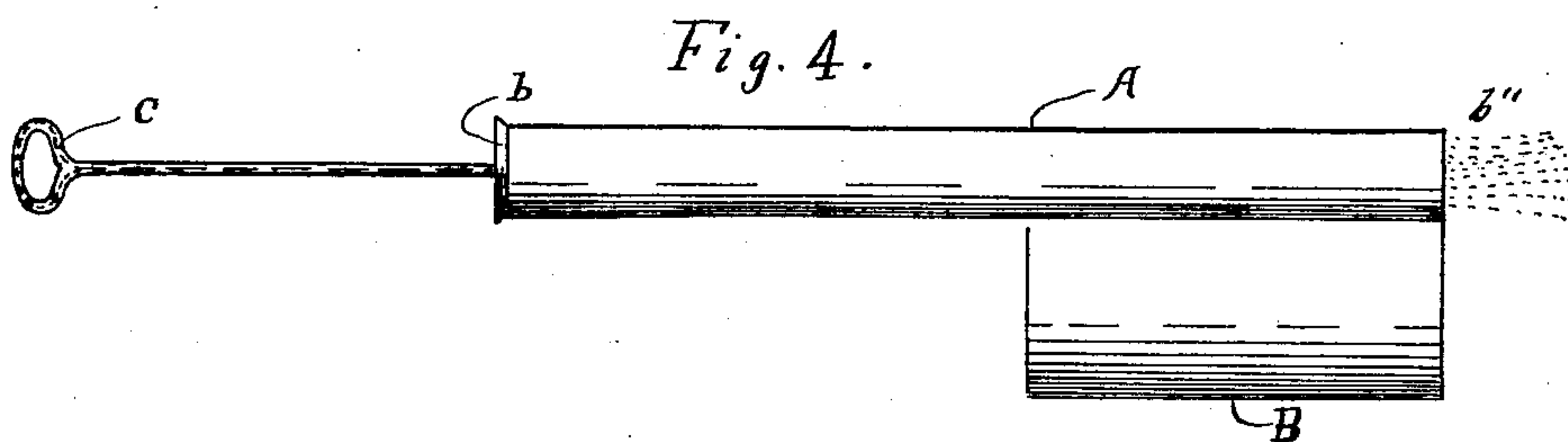
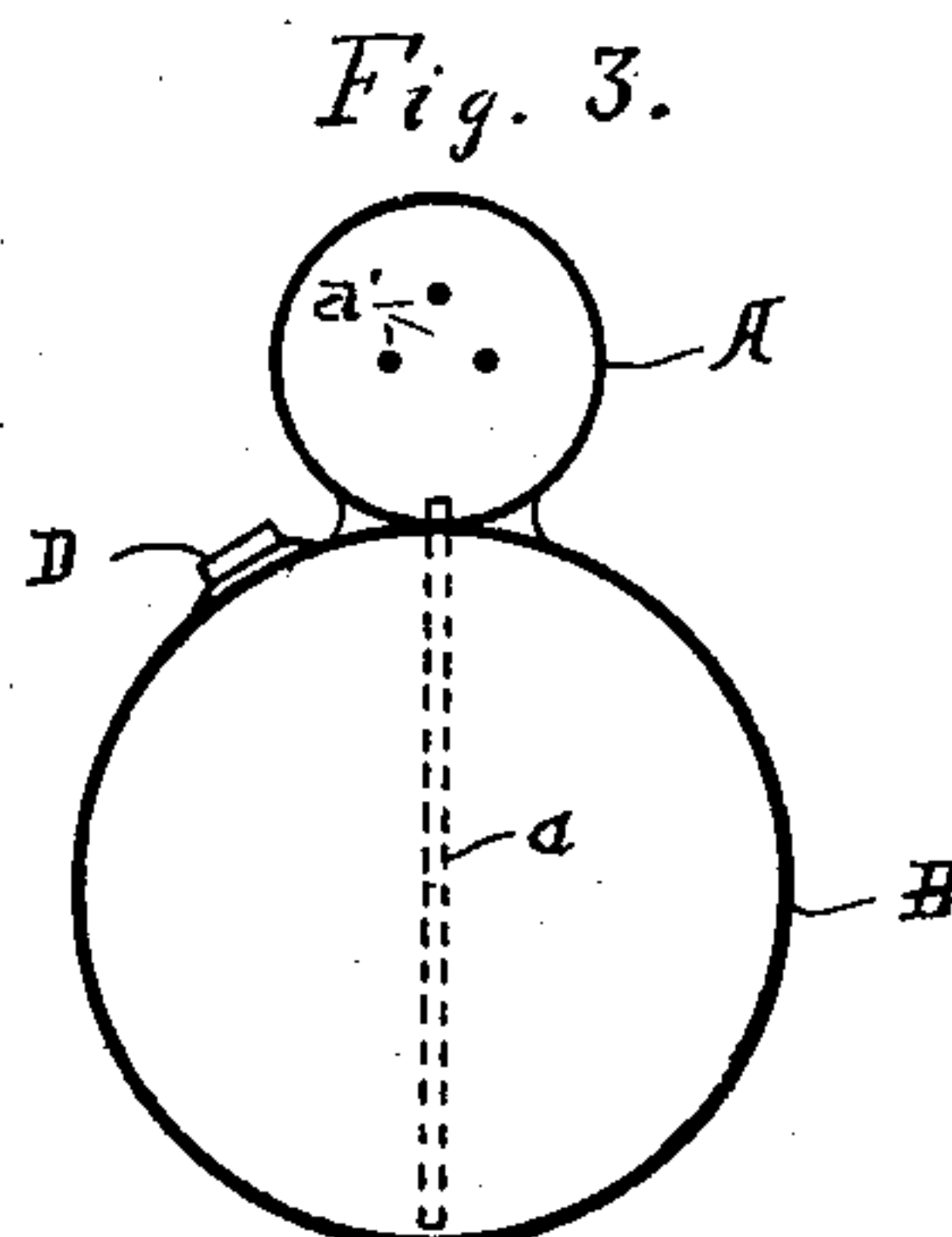
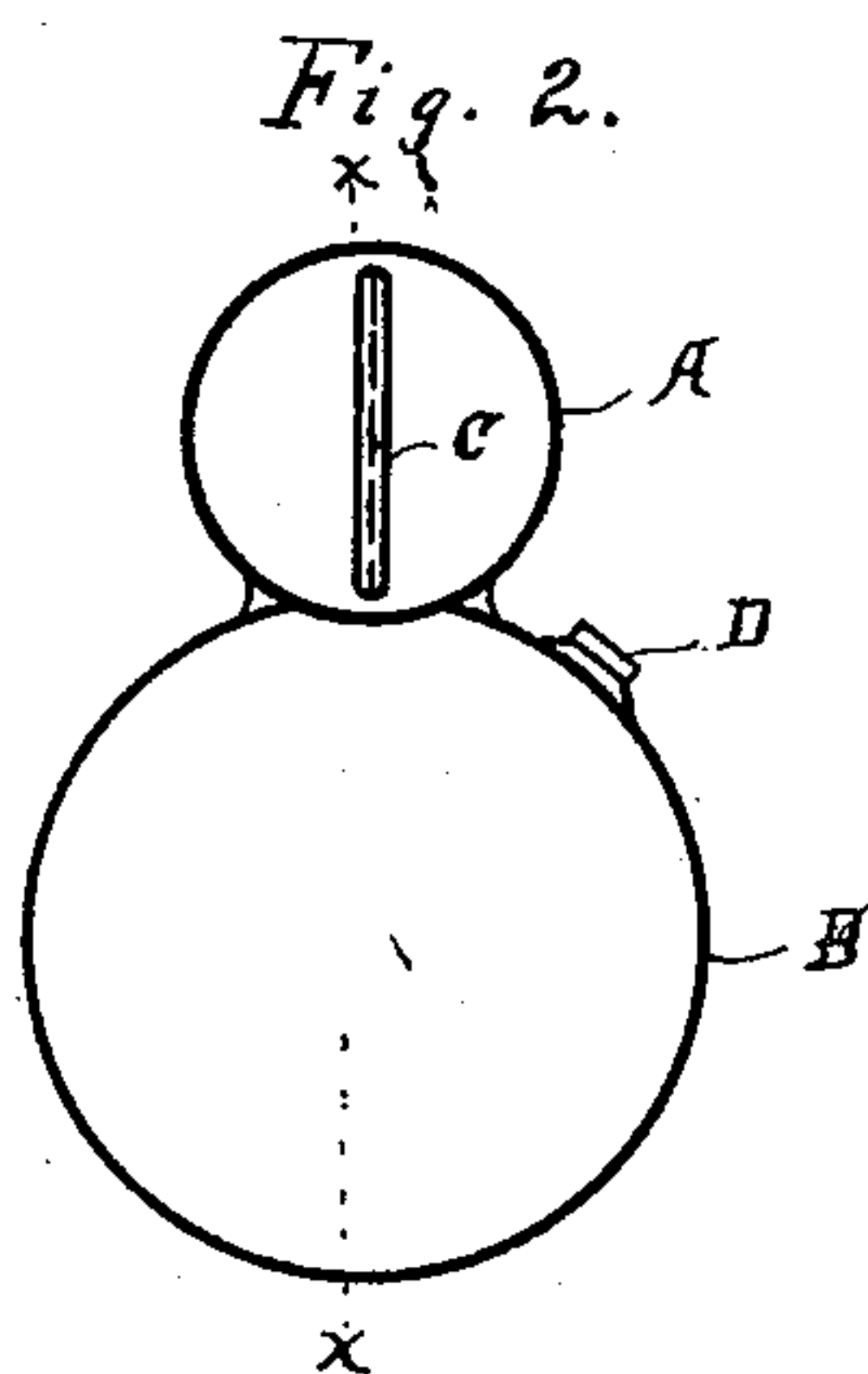
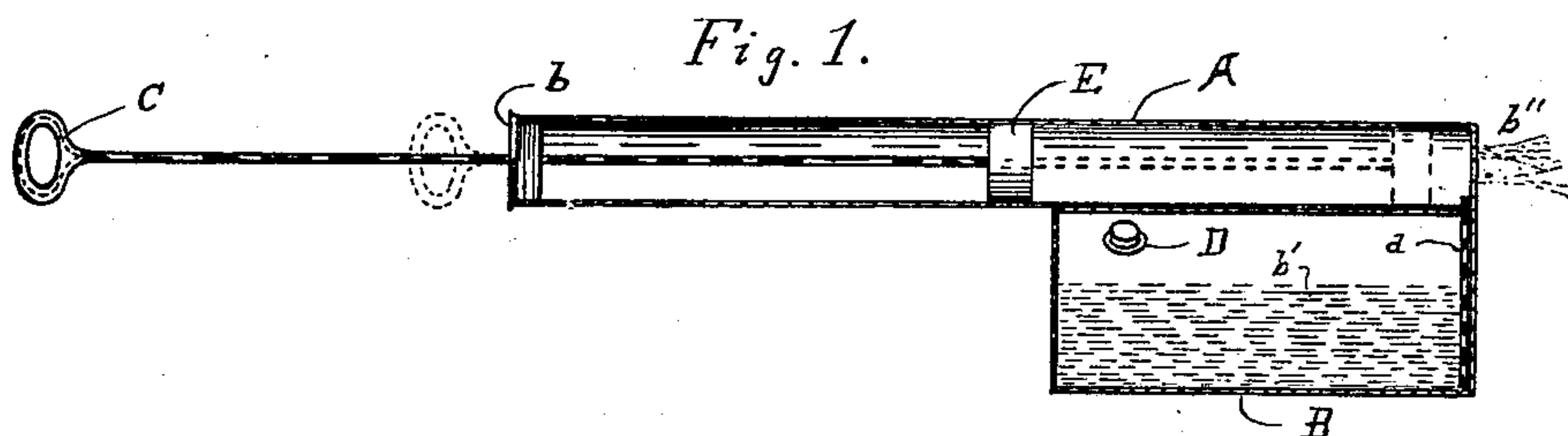
No. 631,704.

Patented Aug. 22, 1899.

H. B. ELLIOTT & F. ALBERTS.
SYRINGE FOR SPRAYING PLANTS, &c.

(Application filed Feb. 14, 1898.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

HANSON B. ELLIOTT, OF CHARLEVOIX, AND FRANK ALBERTS, OF
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SYRINGE FOR SPRAYING PLANTS, &c.

SPECIFICATION forming part of Letters Patent No. 631,704, dated August 22, 1899.

Application filed February 14, 1898. Serial No. 670,306. (No model.)

To all whom it may concern:

Be it known that we, HANSON B. ELLIOTT, residing at Charlevoix, in the county of Charlevoix, and FRANK ALBERTS, residing at Muskegon, in the county of Muskegon, State of Michigan, citizens of the United States, have invented certain new and useful Improvements in Syringes for Spraying Plants, &c., of which the following is a specification.

Our invention relates to improvements in syringes for use in spraying plants for the destruction of insects; and its objects are, first, to provide a syringe for the purpose stated that has attached a reservoir for storing and carrying the solution, so that it will not be necessary to refill the syringe from a pail with each ejection; second, to so arrange the inflow and outflow of the solution to and from the syringe-tube that the solution in the reservoir will be constantly and thoroughly agitated, and, third, to so arrange said flow of liquid as to avert the necessity of forming a vent in the reservoir for the inflow of air to replace the outflow of the liquid. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the syringe and its reservoir on the line *xx* of Fig. 2. Fig. 2 is a top plan. Fig. 3 is a bottom plan, and Fig. 4 is a side elevation of the same.

Similar letters refer to similar parts throughout the several views.

Our invention consists of a syringe-tube *A*, having the ordinary piston *E* and handle *b*, by means of which a vacuum is formed to draw the solution from the reservoir *B* into the syringe-tube and force it out of the tube upon the return stroke of the piston through the small apertures *a'* in the end of the syringe.

The reservoir *B* is attached to the lower side of the syringe near its outer end and is provided with a small tube *a*, so arranged that the back stroke of the piston will draw liquid from the reservoir into the syringe-tube and the forward stroke of the piston will force a

portion of the solution through the apertures *a'* in a fine spray and a portion back through the tube *a* into the reservoir with sufficient force to keep the contents constantly agitated, so that the poisonous substance will be kept thoroughly and uniformly mixed with the liquid portion. This tube extends from the syringe-cylinder of our spraying device to near the bottom of the reservoir, so that it is not necessary to turn the implement from its normal position to draw the solution from the reservoir to the spraying-cylinder. A second important object attained by this construction is that the solution is thereby more thoroughly agitated and insures a more perfect distribution of the poisons than would be otherwise possible. The piston area must be sufficient so that the inflow of air through the apertures *a'* cannot fill the tube fast enough to prevent a sufficient vacuum being formed in the tube to force the liquid from the reservoir through the tube *a* into the syringe-tube, and the tube *a* must be sufficiently small so that a strong spray will be forced from the apertures *a'* in addition to the forcible flow of liquid through the tube into the reservoir, as and for the purpose hereinbefore stated.

D is an opening for the introduction of the liquid into the reservoir.

b is a screw-cap and guide in the end of the syringe.

b' is the liquid solution in the reservoir, and *b''* represents the spray as ejected from the syringe.

A portion of the air that is drawn into the syringe-tube by the back stroke of the piston, sufficient to compensate for the outflow of liquid from the reservoir, is forced into the reservoir with the forward stroke of the piston, by which means we are enabled to exhaust the liquid from the reservoir, which averts the necessity of providing an air-vent for the purpose of avoiding a vacuum from the outflow of the liquid, and by this means we avert the danger of leakage through the vent.

Having thus fully described our invention,
what we claim as new, and desire to secure by
Letters Patent of the United States, is—

5 In a spraying-syringe, a syringe consisting
of a tube and piston, said tube having small
apertures through the end, a reservoir secured
to the lower side of said tube, and a tube com-
municating between said reservoir and the in-
terior of the syringe-tube and extending to

the bottom of the reservoir, substantially as is
shown and described.

Signed February 10, 1898.

HANSON B. ELLIOTT.
FRANK ALBERTS.

In presence of—

H. S. HARSHA,
FRED H. THOMAS.