

No. 612,081.

Patented Oct. 11, 1898.

R. B. WILLIAMSON.  
SPRAYING DEVICE.

(Application filed Apr. 18, 1898.)

(No Model.)

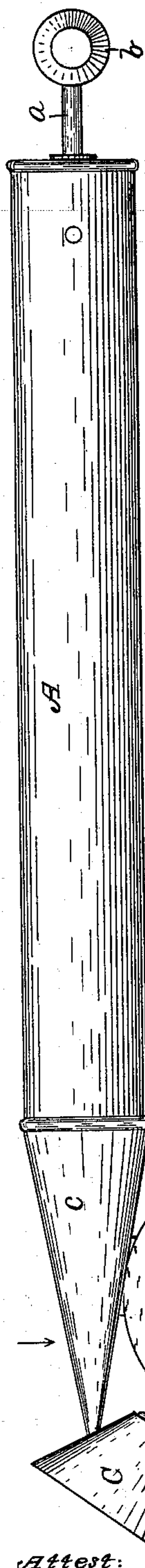


Fig. 1.

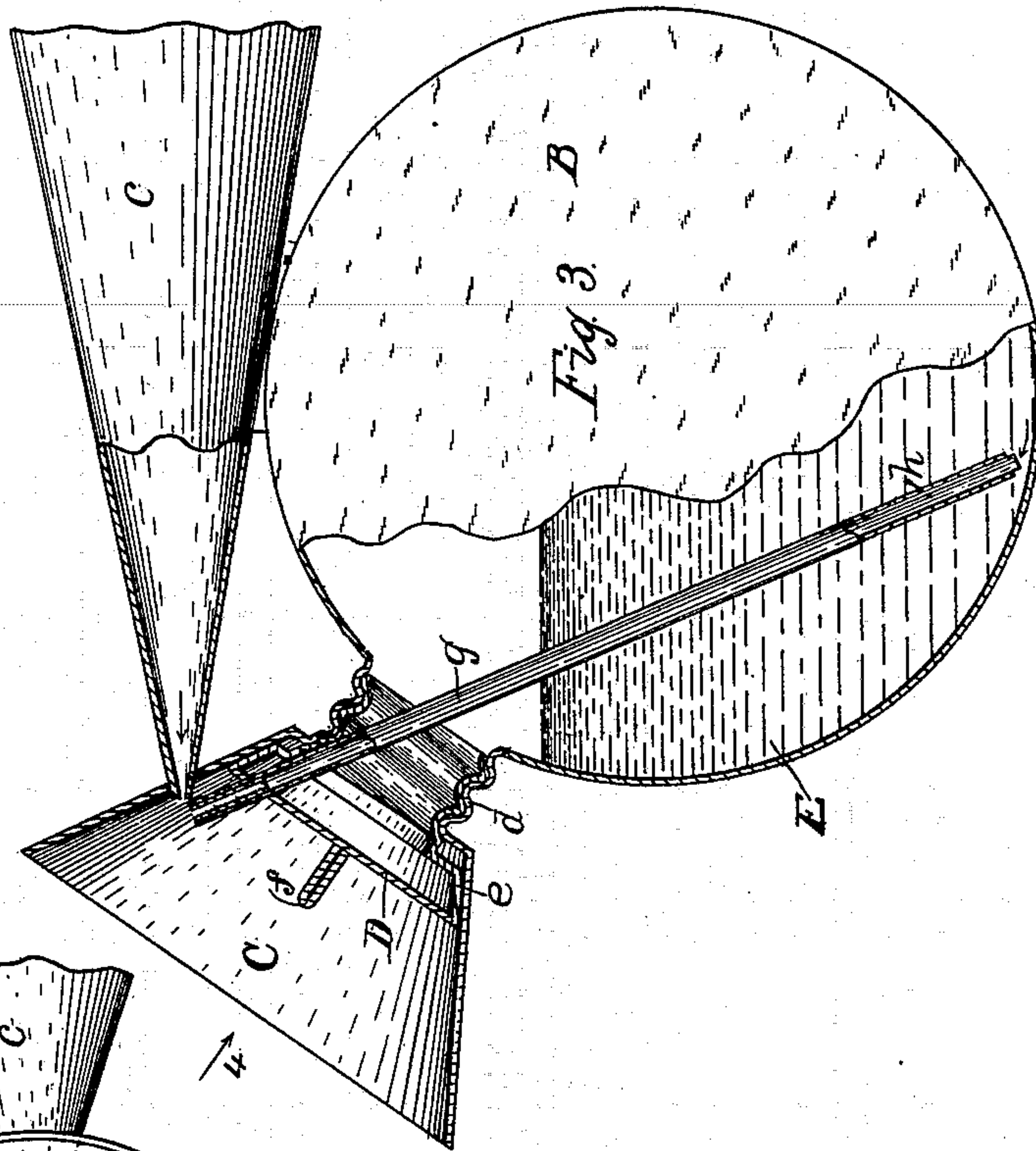


Fig. 3.

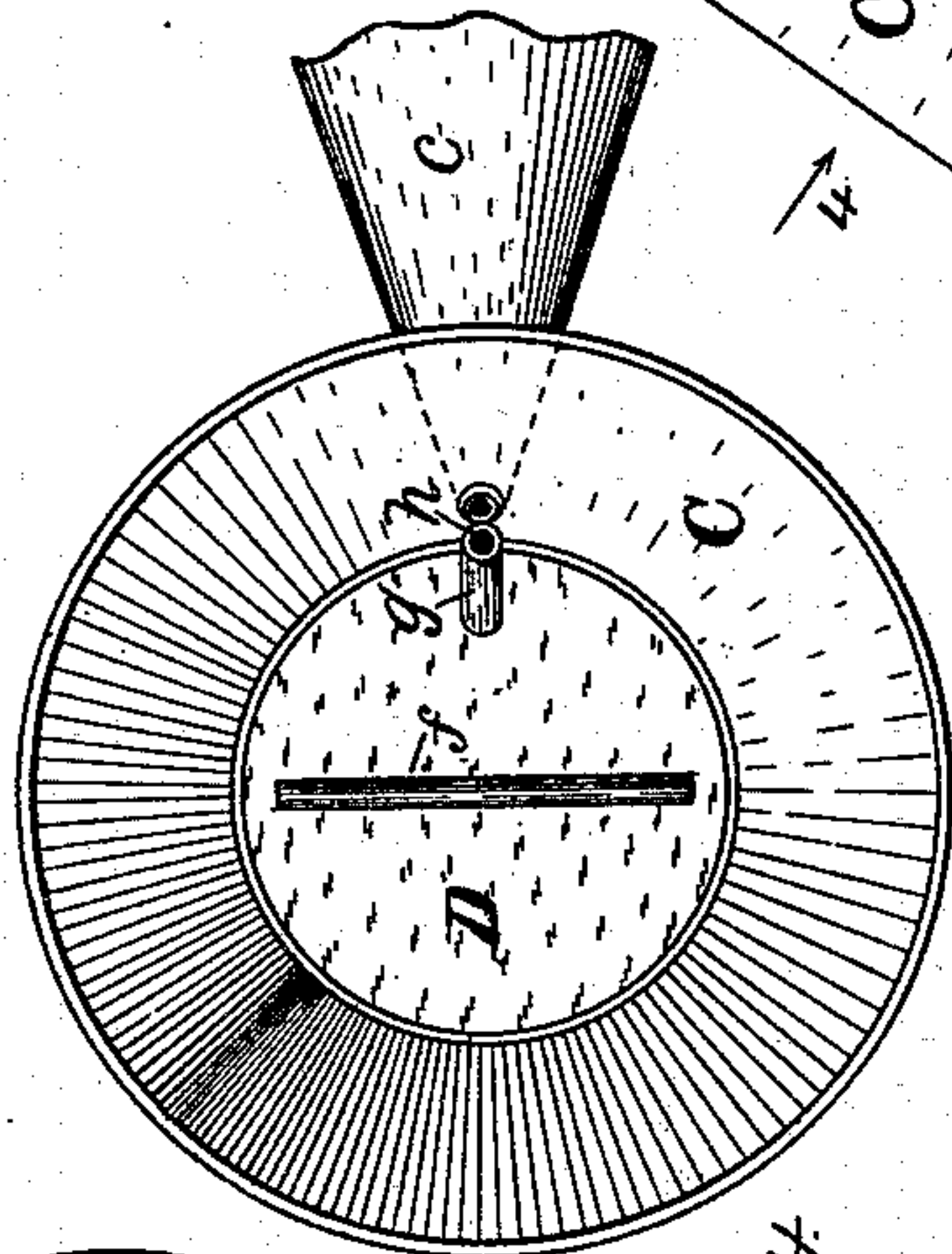


Fig. 4.

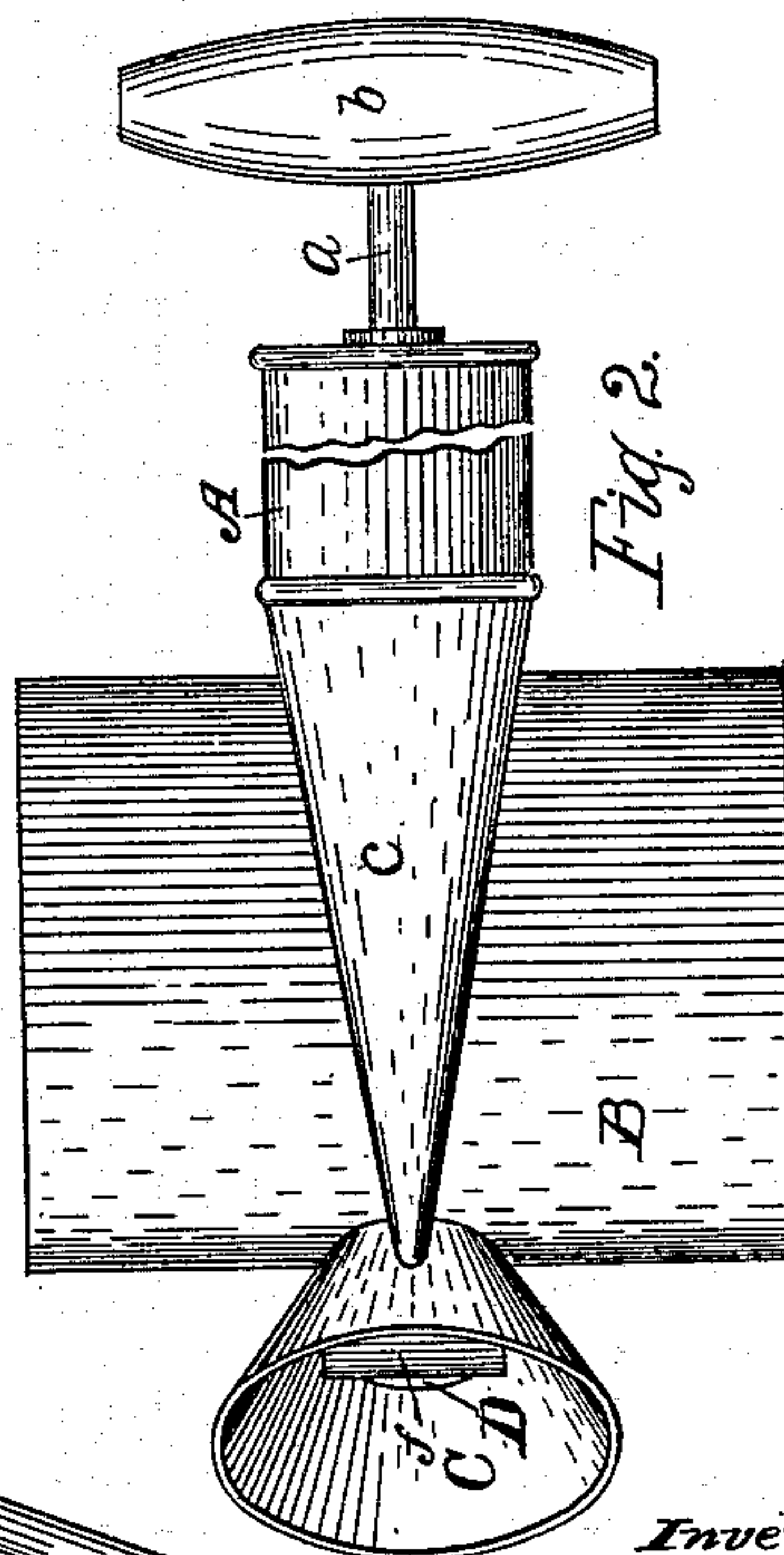


Fig. 2.

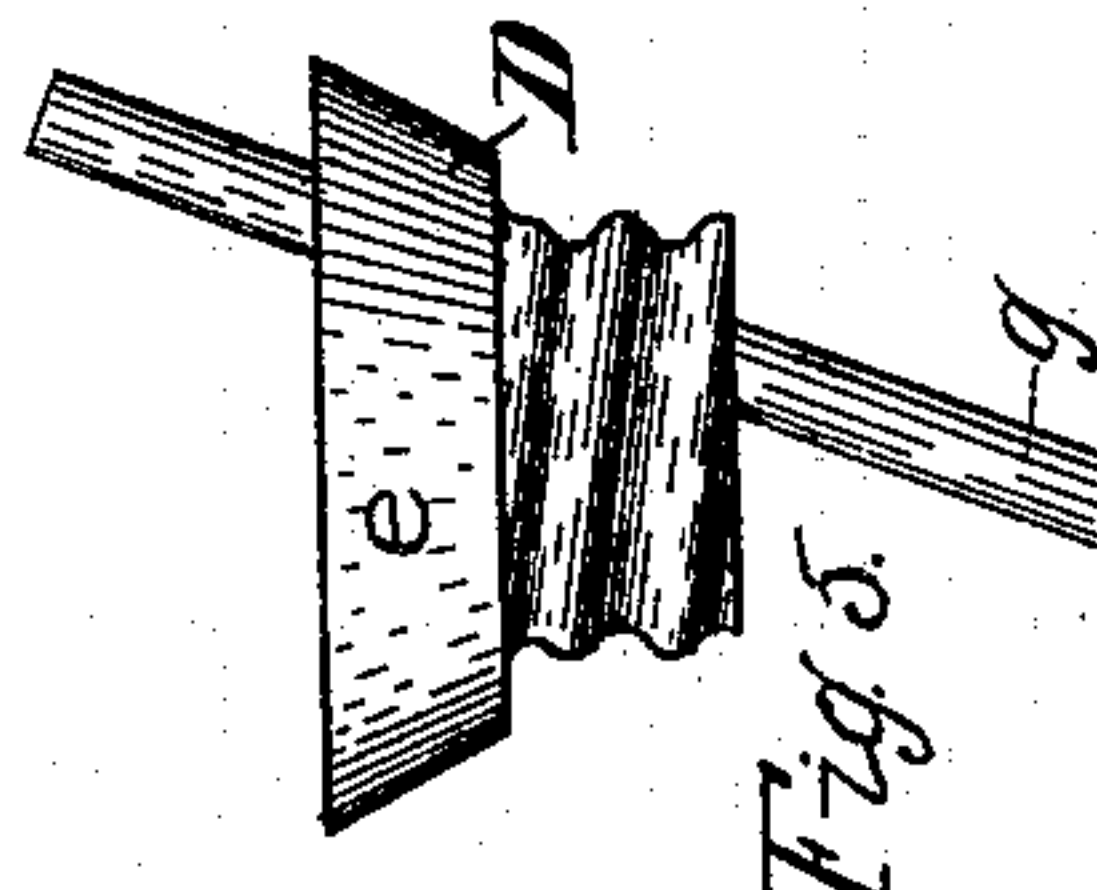


Fig. 5.

Attest:  
M. L. Winston,  
Notary Public.

Inventor:  
R. B. Williamson,  
By E. B. Whitmore  
Attorney.



# UNITED STATES PATENT OFFICE.

RUSSELL B. WILLIAMSON, OF CLIFTON SPRINGS, NEW YORK.

## SPRAYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 612,081, dated October 11, 1898.

Application filed April 18, 1898. Serial No. 678,045. (No model.)

*To all whom it may concern:*

Be it known that I, RUSSELL B. WILLIAMSON, a citizen of the United States, residing at Clifton Springs, in the county of Ontario and State of New York, have invented a new and useful Improvement in Spraying Devices, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention relates to small hand spraying devices; and it has for its object the better means for keeping the spraying liquid well agitated and mixed and for delivering the same in spray upon the plants and also the greater convenience and simplicity of the parts.

The invention is hereinafter fully described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of the device as a whole. Fig. 2 is a view indicated by arrow in Fig. 1, the air-pump or plunger-barrel being condensed as to length. Fig. 3 is a side elevation of parts at the forward end of the device, parts being broken away and sectioned. Fig. 4 is a view of the funnel and associated parts seen as indicated by arrow 4 in Fig. 3. Fig. 5 shows the screw-plug and conducting-tube.

Figs. 1 and 2 are drawn to a scale one-half size, the remaining figures being drawn full size.

Referring to the drawings, A is an ordinary sheet-metal air-pump or plunger-barrel having a plunger-rod *a*, provided with an ordinary plunger (not shown) in the barrel and an operating-handle *b*.

B is a reservoir, of sheet metal, for holding the spraying liquid E, which is secured to the under side of the barrel A, as shown. This reservoir is made cylindrical in form, its axis lying in a direction at right angles with the axis of the barrel, as appears in Fig. 2. The plunger-barrel is formed with a conical or tapered forward terminal *c*, beneath which the reservoir is secured by solder or other simple means.

C is a funnel formed with a concentric threaded or spiral part *d*, secured to the convex side of the reservoir midway of its length. This funnel opens into the interior of the reservoir and projects radially from the side of

the latter across the reduced end or point of the barrel, as shown, being secured both to the barrel and the reservoir. The axis of the funnel intersects the axis of the reservoir at right angles, but is inclined to the axis of the plunger-barrel, the axes of the latter and the funnel being in a vertical plane when the device is held in position for use. The funnel is inclined upward and forward and is pierced at its rear side by the point of the plunger-barrel, which point extends to some little distance into the open space of the funnel.

The funnel is provided with a screw-plug D, formed with a spiral part to turn into the spiraled part *d* of the funnel and having a conical part *e*, adapted to closely fit the interior surface of the conical funnel. This plug, which closes the passage through the funnel, is provided upon its upper surface with a cross bar or rib *f* to be seized by the thumb and finger for turning the screw-plug to place or for removing it from the funnel. The screw-plug holds rigidly a tube *g*, reaching at its lower end into the spraying liquid E and nearly to the bottom of the reservoir, as shown in Fig. 3, which tube constitutes a conductor for the liquid to the pointed end of the barrel. The axis of the tube intersects obliquely the axis of the screw-plug and the funnel, the tube being held by the screw-plug in such manner that when the latter is turned firmly to place in the funnel the axes of said tube, funnel, and barrel are in a plane.

The tube is of such length that its upper end meets the reduced point of the barrel in a manner shown in Fig. 3, so that a current of air forced out of the barrel will draw the spraying liquid up through the tube and atomize it.

In using the device it is held inclined downward at the front end, so that the stream of spray will be projected against the object to be sprayed, the funnel serving to ward off wind or currents of air that might otherwise tend to deflect the jet of spray. The reservoir is conveniently filled through the funnel C, and its weight, together with that of the contained liquid, being below the barrel tends to normally keep the device in a proper position for use. In using the sprayer the barrel is held by either hand, as may be convenient, the plunger being worked by the other, and



the center of gravity of the whole being below the barrel the device tends normally to keep its proper position in the hand.

The conducting-tube *g* is preferably made with large caliber and a smaller tube *h* inserted therein, as shown in Fig. 3. When small quantities or jets of spray are required, the inner tube remains in the outer tube; but should it be wished to deliver larger quantities of the liquid the inner tube is removed and the liquid drawn through the large tube.

What I claim as my invention is—

1. A spraying device comprising a plunger-barrel formed with a tapered or reduced end, and a reservoir secured to the plunger-barrel, and a funnel projecting from the reservoir and opening into the latter, the reduced end of the barrel piercing the side of the funnel, and a conducting-tube for the liquid co-acting with the plunger-barrel, substantially as shown and described.

2. A spraying device comprising a plunger-barrel formed with a pointed end, and a reservoir secured to the plunger-barrel, a funnel held by the reservoir and opening into the latter, said funnel having a spiral part, and a screw-plug to close the passage into the reservoir through the funnel, said screw-plug holding a tube extending into the reservoir with its upper end adjacent to and coacting

with the point of the barrel, substantially as set forth.

3. The combination in a spraying device of a plunger-barrel having a pointed end, a reservoir secured to the plunger-barrel, a funnel connected with both the reservoir and the plunger-barrel, a stopper for the funnel, and a conducting-tube held by the stopper, the axes of the plunger-barrel, the funnel and the conducting-tube being in a plane, substantially as shown and described.

4. A device for spraying comprising a plunger-barrel, and a cylindrical reservoir beneath the plunger-barrel, the axes of the latter and the reservoir lying in directions at right angles with each other, a funnel projecting radially from the convex side of the reservoir across the end of the plunger-barrel, a screw-plug or closer for the funnel formed with a conical part to fit the inner inclined surface of the funnel, and a conducting-tube held by the screw-plug, substantially as shown.

In witness whereof I have hereunto set my hand, this 13th day of April, 1898, in the presence of two subscribing witnesses.

RUSSELL B. WILLIAMSON.

Witnesses:

N. A. HALLENBECK,  
THOS. WELLS.