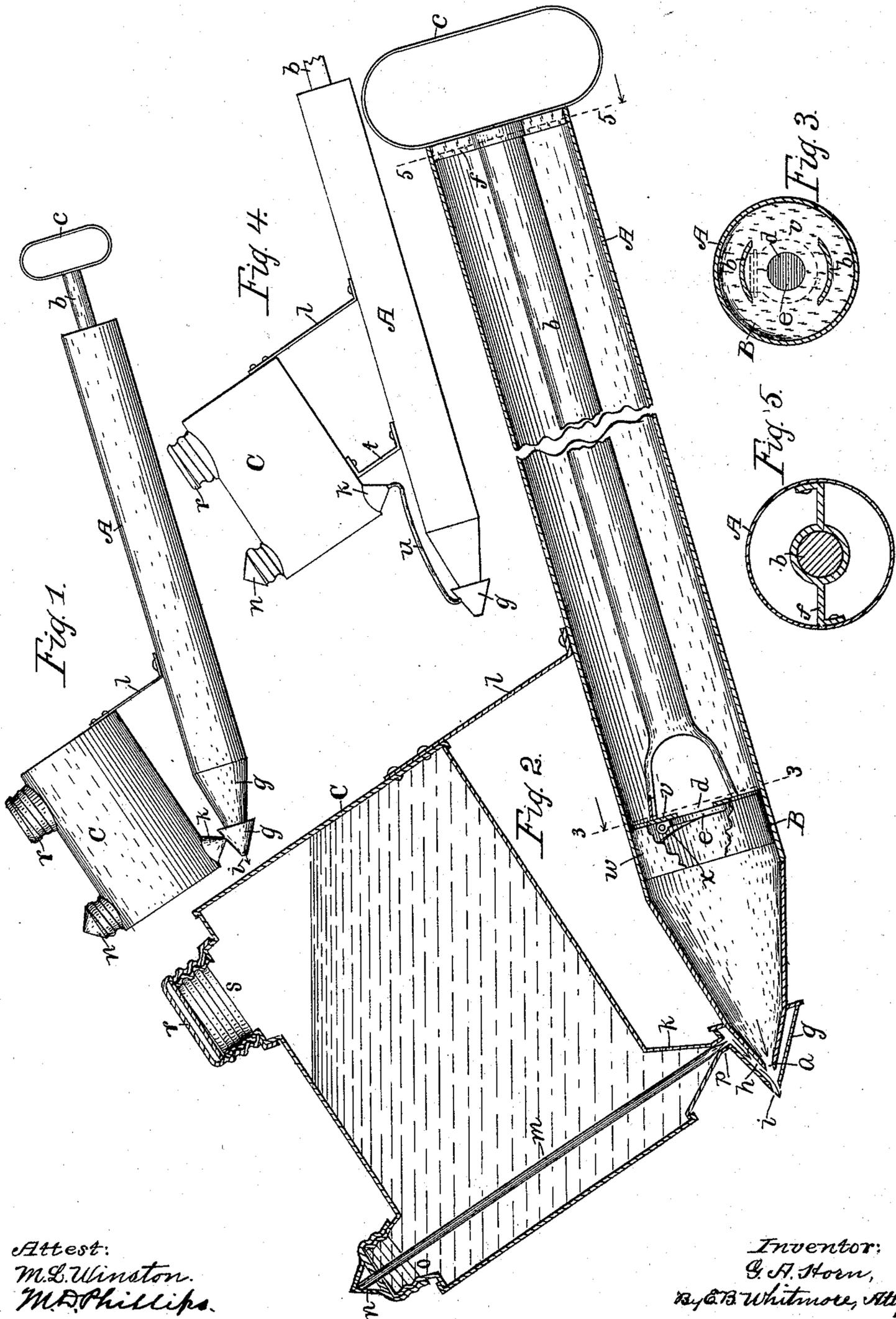


(No Model.)

G. A. HORN.  
SPRAYING DEVICE.

No. 604,151.

Patented May 17, 1898.



Attest:  
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# UNITED STATES PATENT OFFICE.

GEORGE A. HORN, OF NEWARK, NEW YORK.

## SPRAYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 604,151, dated May 17, 1898.

Application filed December 15, 1897. Serial No. 662,011. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. HORN, of Newark, in the county of Wayne 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.

The object of my invention is to produce a simple and convenient spraying device to be carried in the hand of the operator, the invention consisting in parts and devices hereinafter fully described and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of the device. Fig. 2 is a central longitudinal section showing the interior parts, parts being broken away. Fig. 3 is a cross-section on the dotted line 3 3 in Fig. 2. Fig. 4 shows a slight modification in construction. Fig. 5 is a cross-section on the dotted line 5 5 in Fig. 2. Figs. 2, 3, and 5 are drawn to a scale larger than those of Figs. 1 and 4.

Referring to the parts, A is a piston or plunger barrel, formed of sheet metal, open at its upper end and made conical at its lower end, at which latter is an exit-opening *a*.

B is a piston or plunger having a rod *b* reaching out at the open end of the barrel and provided with a handle *c* for operating the plunger. The latter is formed with a central opening *d*, Fig. 3, controlled by a valve *e*.

*f*, Fig. 5, is a guide in the barrel, at its upper end, for guiding the piston-rod. The conical end of the barrel is covered at its point with a conical housing or cap *g*, concentric with the barrel and rigidly secured thereto, there being a space *h* between the barrel and the cap. The latter has an exit-opening *i* at its apex in line with the adjacent opening *a* of the barrel.

C is a reservoir above the barrel for holding the spraying liquid, formed with a conical downward projection *k*, communicating with the interior of the cap *g*, as clearly shown in Fig. 2. This conical part *k* is rigid with the cap *g*, which part *k* and the rigid standard *l* constitute the means by which the reservoir is held securely to the barrel. Now it will be understood that (the plunger being at the upper end of the barrel) if the liquid be allowed to trickle into the space *h* and the

plungers be forced down the liquid will be forced out through the opening *i* in the form of spray.

*m* is a pointed rod controlling the outflow from the reservoir into the cap *g*. This rod passes diametrically through the reservoir, which is preferably cylindrical in form, the upper end of the rod being rigid with and controlled by a screw-cap *n* at the upper side of the reservoir. The screw-cap *n* is threaded upon a nipple *o* of the reservoir, and by turning the screw-cap one way or the other the point of the rod will be carried into or drawn out of the passage *p*, communicating between the interior of the cone *k* and the space *h*. By means of thus raising or lowering the rod *m* the outflow of liquid through *p* may be controlled at pleasure. The reservoir is further provided with an ordinary screw-cap *r* and opening *s*, through which the reservoir is supplied with the spraying liquid.

The plunger B is hollow, consisting of a band or cylindrical part *w* to fit the interior of the barrel A and a disk or head *v* rigid with the part *w*. The valve *e* is within the hollow of the plunger and is hinged to and operates on the under side of the disk *v*. The plunger-rod *b* is divided near the plunger to uncover the opening *d* through the disk *v*, and when the plunger is drawn upward air passes through the opening *d* to fill the space below the plunger. When the plunger is depressed, the valve closes and the air is forced out of the openings *a* and *i*, as already stated. A simple spring *x* serves to keep the valve normally closed.

It may be convenient to locate the reservoir back from the nozzle of the barrel, as shown in Fig. 4, connecting the cone *k* with the cap *g* by a tube *u*. This is only a matter of convenience and does not materially change the operation of the parts. In case the reservoir is relatively located, as shown in Fig. 4, a second short standard *t* is provided, connecting the reservoir with the barrel.

What I claim as my invention is—

1. A spraying device comprising a plunger-barrel and contained plunger, the barrel having a delivery-opening, a cap for said delivery-opening having a delivery-opening in line with the opening of the barrel, and a reservoir for liquid so placed and arranged

with reference to said barrel and cap as to deliver the liquid by gravity into the space between the cap and barrel, substantially as specified.

5 2. A spraying device comprising a plunger-barrel having a delivery-opening, a cap extending over the end of the barrel and having a delivery-opening in line with the delivery-opening in the barrel, a plunger within  
10 said barrel, a reservoir for liquid so placed and arranged with reference to said barrel and cap as to deliver the liquid by gravity into the space between the cap and barrel, and means for controlling the passing of liquid  
15 from the reservoir to the interior of the cap, substantially as specified.

3. A spraying device comprising a plunger-barrel having a conical apertured extremity and a plunger within the barrel, a  
20 conical cap carried by the end of the barrel and provided with a delivery-opening in line with the delivery-opening therein, a reservoir supported by the barrel and provided with a conical chamber at its bottom communicating  
25 with the cap and designed to discharge liquid into the cap and around the end of the barrel, and mechanism designed to control the

passage of liquid from the conical chamber to the cap, substantially as specified.

4. A spraying device comprising a plunger-barrel having an apertured conical extremity and a contained plunger, a conical cap fitting over the conical end of the barrel and provided with a discharge-opening in line with the aperture therein, a reservoir supported upon the exterior of the barrel and provided with a conical chamber at its bottom and communicating with the cap and designed to permit the gravitation of liquid from the reservoir to the space between the cap and  
30 the conical end of the barrel, a rod extending through the reservoir and designed to be reciprocated for the purpose of opening or closing the passage from the reservoir to the cap, and a screw-cap secured to said rod and  
35 designed by its rotation to actuate the same, substantially as and for the purpose specified. 45

In witness whereof I have hereunto set my hand, this 9th day of December, 1897, in the presence of two subscribing witnesses.

GEORGE A. HORN.

Witnesses:

W. H. O'DONNELL,  
E. P. HAWS.