

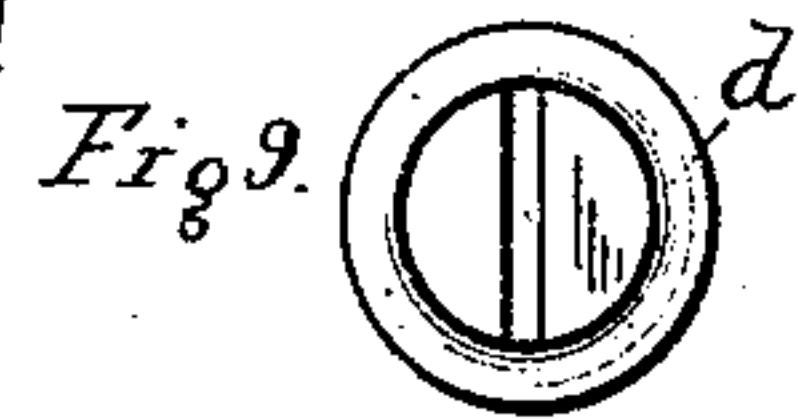
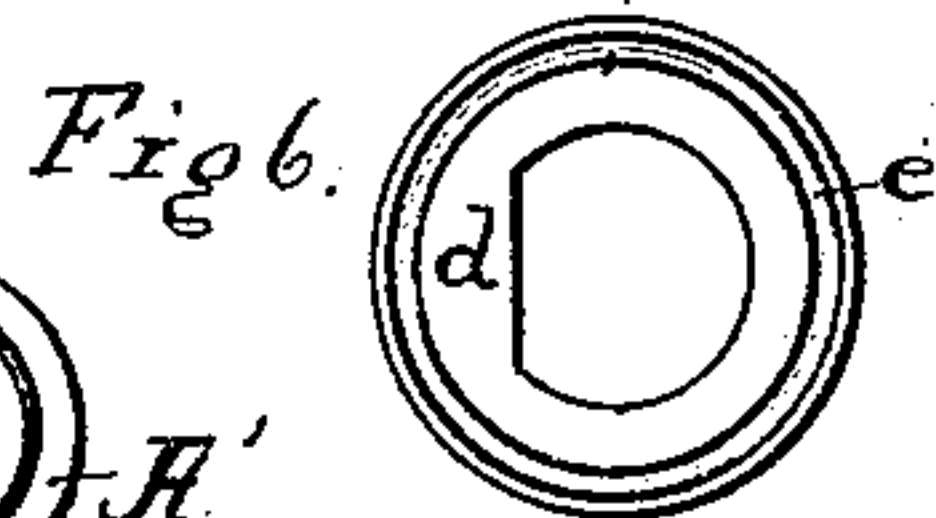
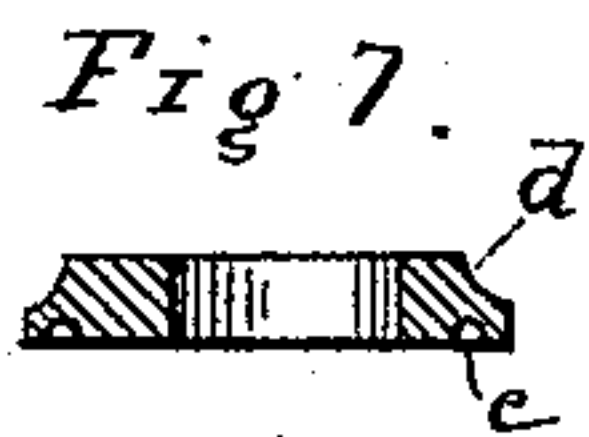
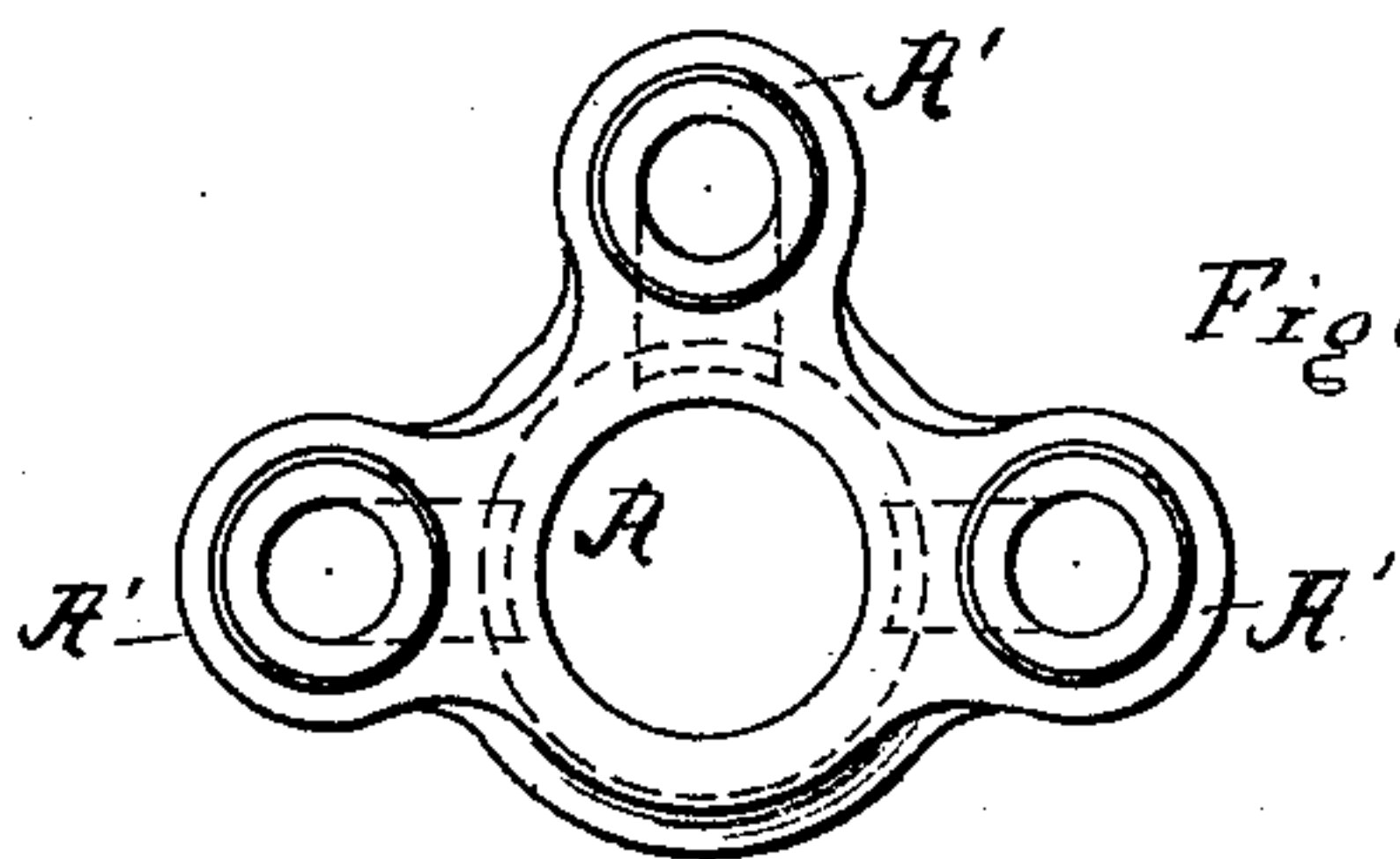
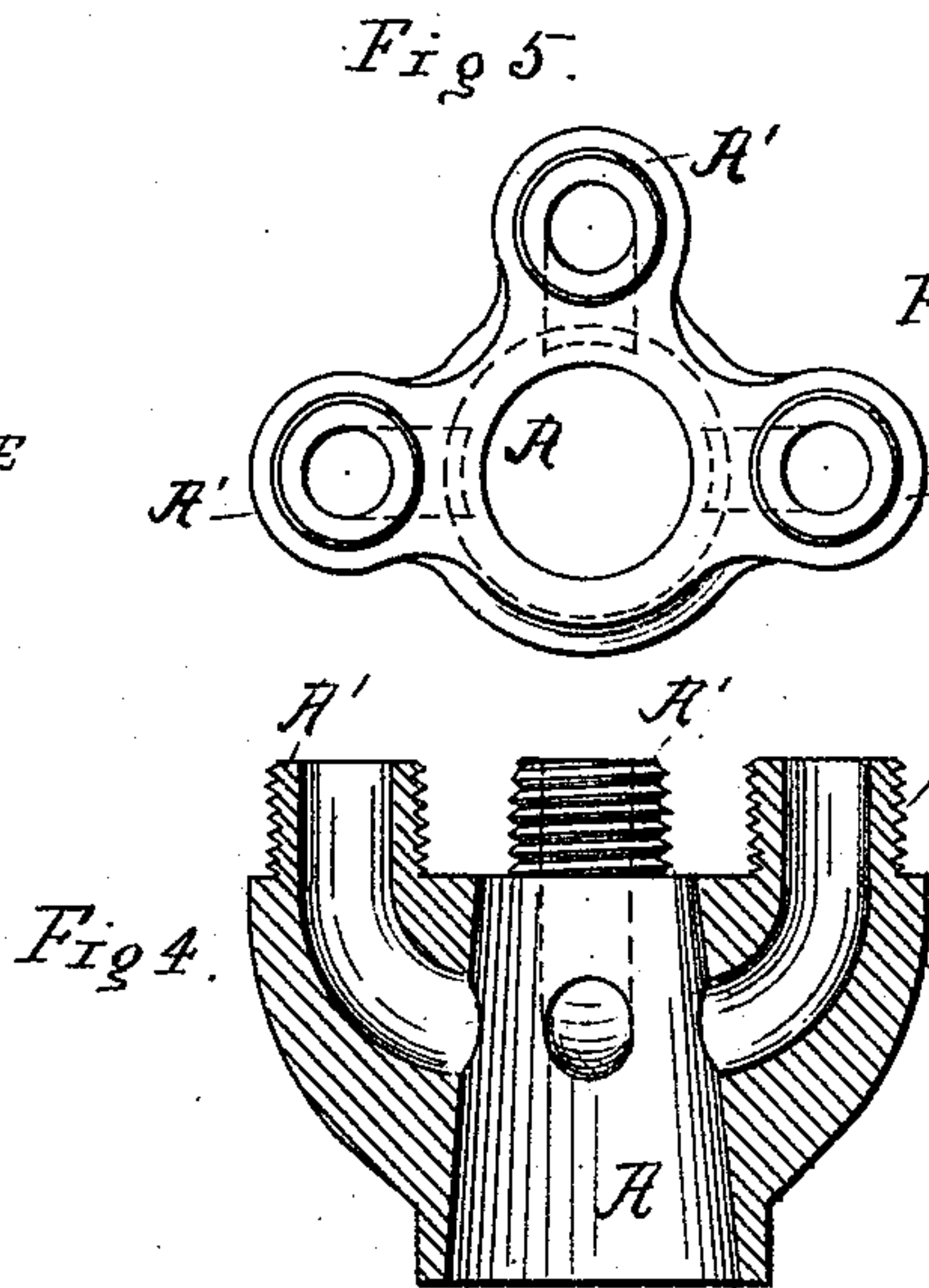
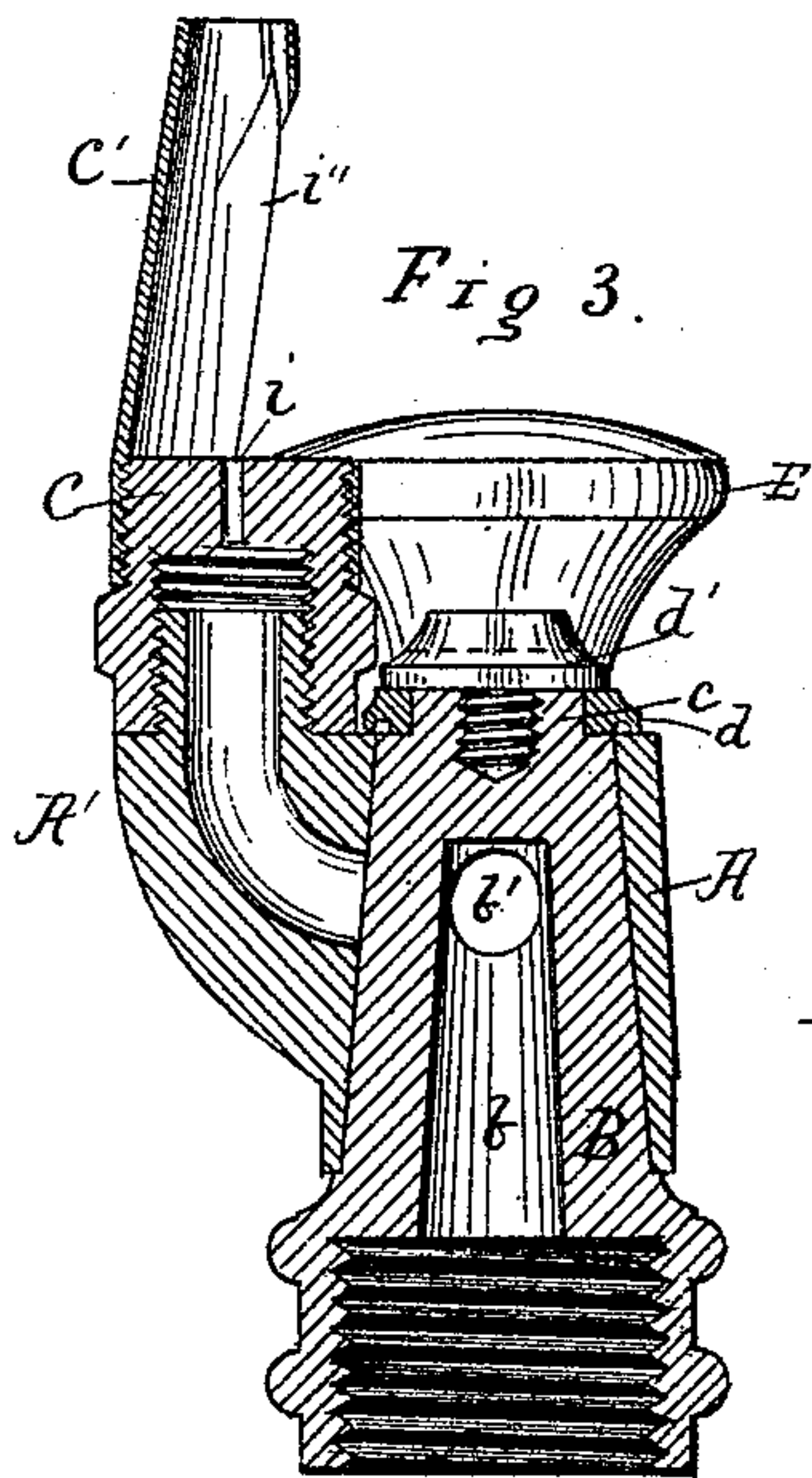
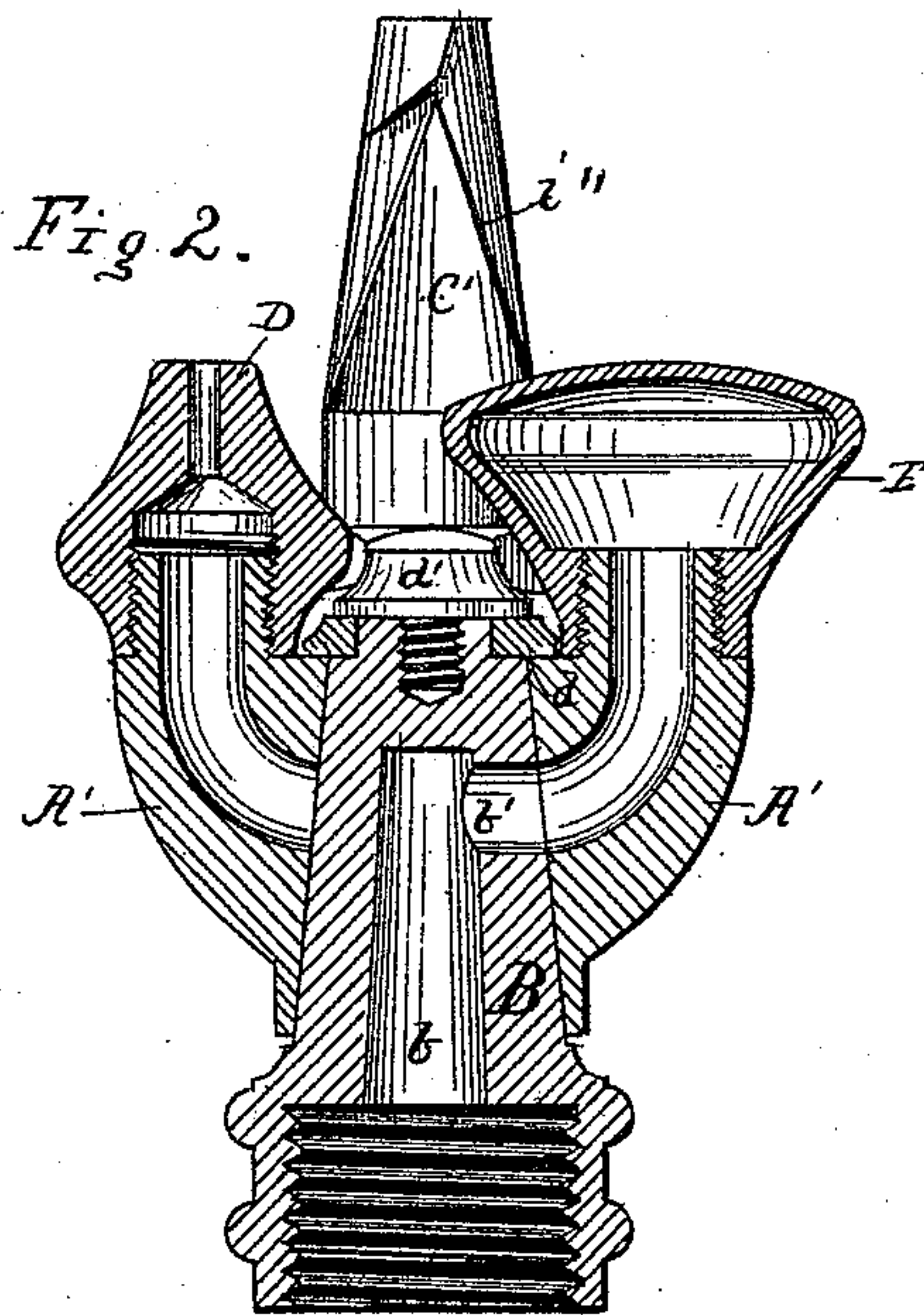
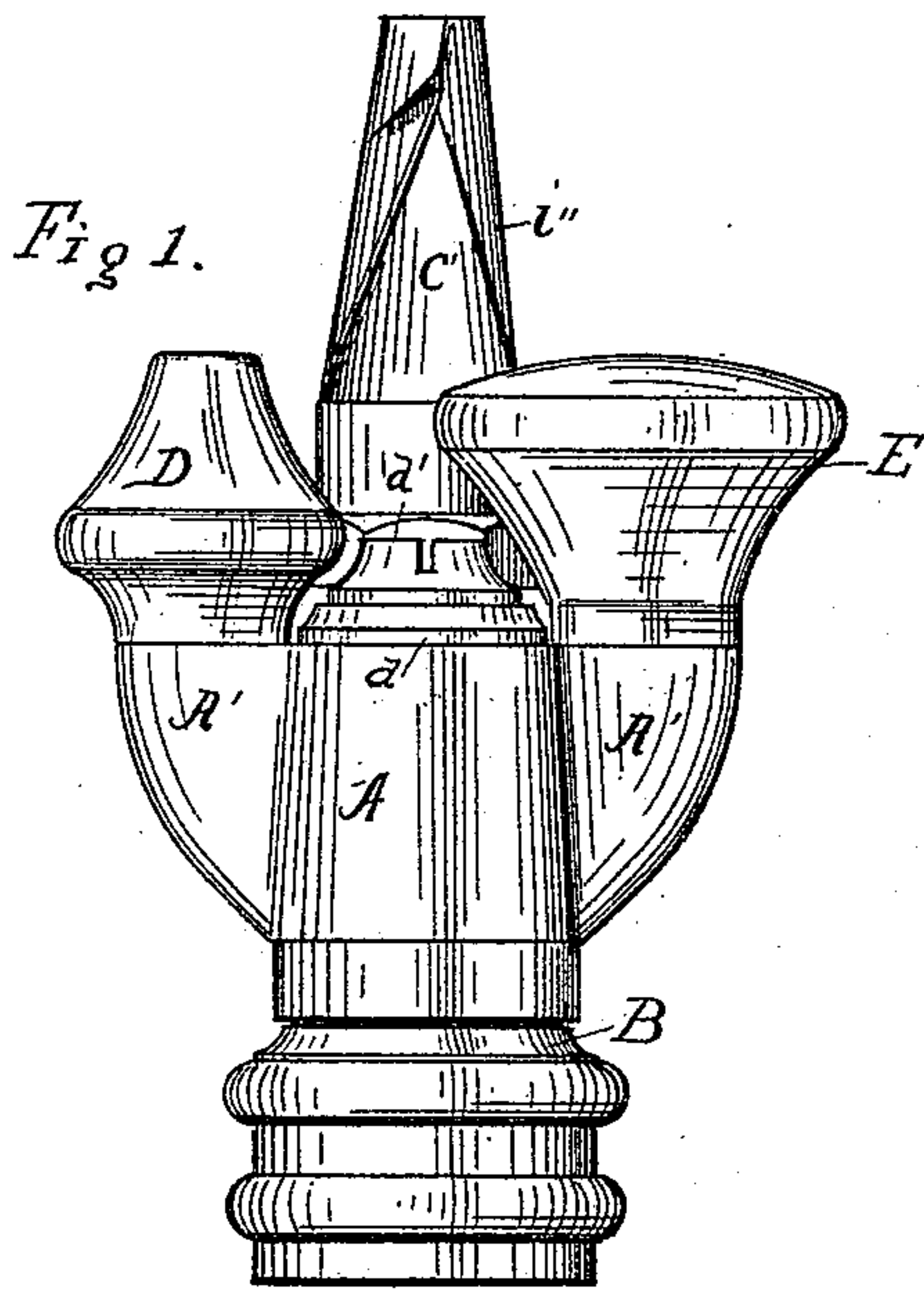
(No Model.)

2 Sheets—Sheet 1.

J. B. THIES.  
NOZZLE.

No. 497,480.

Patented May 16, 1893.



WITNESSES:

*L. C. Leoty*  
*D. J. Smith*

John B. Thies, INVENTOR.

BY

*Taulmin & M. Carty*  
his ATTORNEYS

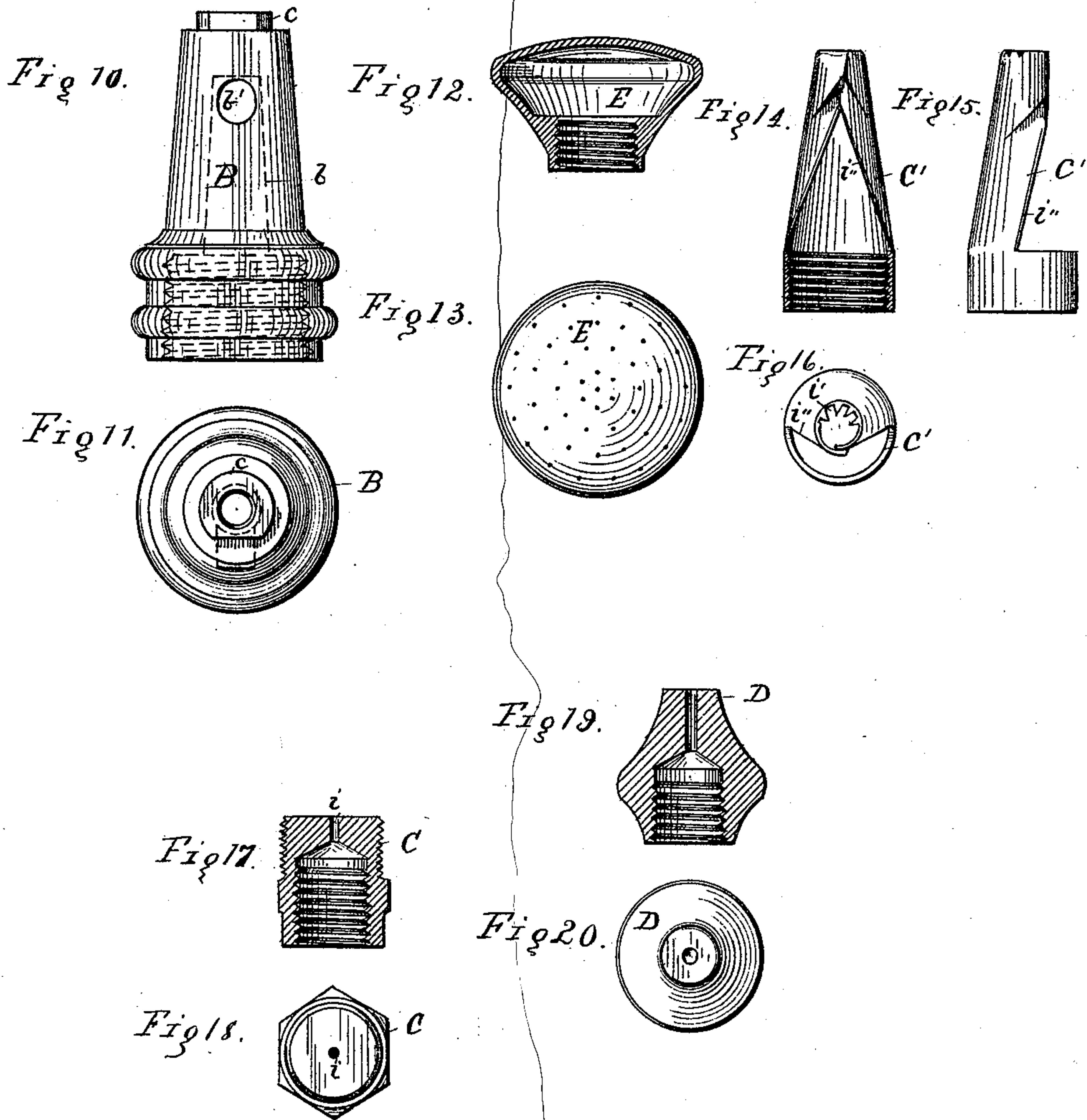
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WITNESSES:

L. C. Leoty  
D. J. Smith Jr.

INVENTOR,  
John B. Thies

BY

Paulmier & M. Carter  
his ATTORNEYS



# UNITED STATES PATENT OFFICE

JOHN B. THIES, OF DAYTON, OHIO, ASSIGNOR TO THE GEM CITY MANUFACTURING COMPANY, OF SAME PLACE.

## NOZZLE.

SPECIFICATION forming part of Letters Patent No. 497,480, dated May 16, 1893.

Application filed March 3, 1893. Serial No. 464,610. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. THIES, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement in Nozzles, of which the following is a specification.

My invention relates to improvements in liquid discharge-nozzles, and consists in combining in a hose nozzle means for discharging liquids in any desirable manner, either in a solid stream, a shower or sprinkle, or in an atomized form, the change from one form to the other being effected through a single nozzle proper, without having to remove any of the parts shown in the drawings and described in the following specification.

The object of my invention is to combine in a nozzle means for administering insecticides, and disinfectants, or deodorizing liquids, in an economical manner and to spray the same over a broader area of space than is usually done by devices for this purpose; further my improved nozzle furnishes means for delivering a solid stream of water for lawn or garden watering purposes, and still further it provides means for showering or sprinkling water upon flower pots, vases, &c., in any desirable quantities.

To these ends my improvements consist of a nozzle having three separate and distinct discharging ports that may be supplied from the hose, at will, through a single inlet, and the supply of liquid may be lessened without curtailing the capacity of the delivery port to discharge the same; in other words, the volume of pressure surface may be decreased, and yet the capacity to deliver at the exit remains unaffected thereby.

The accompanying drawings, copiously illustrate my improved nozzle, and as preliminary to the written description, will now be referred to.

Figure 1. is a side elevation of my triple arm nozzle. Fig. 2. is a horizontal section of Fig. 1. Fig. 3. is a sectional view at right angles to and through the center of Fig. 2. Fig. 4. is a section of the nozzle with the perforated stem incased therein, and the exit tips detached therefrom. Fig. 5. is a plan view of the globe A; Fig. 6. a detached detail view

of the washer; Fig. 7. a cross section of the same; Fig. 8. a detached detail view of the screw; Fig. 9. a plan view of the same; Fig. 10. a detached detail elevation of the perforated stem; Fig. 11. a plan view of the same; Fig. 12. a detached, detail cross section of the exit tip or rose for delivering a shower; Fig. 13. a plan view of the same; Fig. 14. a detached, detail cross section of the exit tip for an atomized delivery; Fig. 15. a side elevation of the same; Fig. 16. a plan view of the same; Fig. 17. a detached, detail view of the exit tip to which the part C' is attached; Fig. 18. a plan view of the same; Fig. 19. a detached, detail view of the exit tip for delivering a solid stream; Fig. 20. a plan view of the same.

Coming to a detailed description, the letter A indicates the globe or nozzle proper, having a central opening with arms A', A', A', leading therefrom. These arms are provided with conduits or passageways leading from the opening in the globe to the exit port, and are provided at their upper extremities with external screw threads, upon which the exit tips, to be hereinafter described, are placed.

B, is a tapering stem provided with internal screw threads at its largest end by which the hose is secured; this stem is provided with a central orifice b, which does not extend the entire longitudinal extent of said stem, but terminates near the upper end which end is solid; a second orifice b' intersects the orifice b at right angles, and extends through the side of the stem, as is seen in the various views. The extreme upper end of the stem terminates in an extension c, of a smaller diameter than the stem, and of a shape to receive the washer d. This extended part of the stem also has a threaded aperture or screw seat adapted to receive the broad-headed screw d', by means of which the stem is secured within the globe A, and the latter permitted to revolve freely thereon by the hand. The washer d is also constructed with an annular groove or seat e, which is designed to secure a bit of elastic packing between the end of the stem and the washer, should it be found that the wearing of these parts would at any time render such expedient.



Thus far I have described the mechanical construction of the globe A and stem, which conjointly may be said to form the nozzle proper. It will be readily seen, that by turning the stem B, the orifice *b'* is made to register full, or partially with the orifices in the arms A', A', A', or by turning the said stem so as to bring the orifice against the inner surface of the globe, the supply of water is entirely cut off. The passage of water or other liquids from the smallest supply to the fullest capacity of the nozzle, is regulated by simply turning the globe A; in either event the capacity of the exit port is not affected, although the pressure incident to the supply of liquid is variable.

C represents an exit tip attachable to an arm of the nozzle, upon which is screwed the thimble C'. This device is used for spraying insect destroying fluids, which are injected therethrough by means of a pump suitable for such purposes. The liquid is forced through the orifice *i* in the tip C; is dashed against the inclined sides of the thimble and is cut into a vapor or spray by the teeth *i'* in the extreme outer end of said thimble. There is no drippage or waste of liquid attending the discharge; the slotted portion of the thimble as at *i''*, allows a sufficient amount of air to enter and assist in the speedy vaporization of the liquid.

D designates an exit tip adapted to an attachment with another of the arms A' through which is ejected a solid stream.

E designates a rose or exit tip through which a shower is deliverable. Several variations in the discharges herein referred to may be effected by adjusting the stem with reference to the pressure introduced into the exit ports.

It will be understood that when water is used in the nozzle, it may be supplied from any source having the requisite amount of force.

In the foregoing description, my improved nozzle has been described as especially applicable to domestic or sanitary uses, but its use is valuable in connection with a fire-department, the facility with which a discharge may be alternated between a solid stream and a shower, having been described; the former, for the useful purpose of quenching the flames, while a shower would provide a cooling barrier between the firemen and the

flames and would dissipate the accumulating smoke.

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

1. In a nozzle, the combination with the globe having a longitudinal opening, and arms projecting from the sides thereof with conduits or passage-ways therethrough, of a stem adapted to fit the longitudinal opening in the globe, and be secured thereto as herein described, a longitudinal opening terminating near the upper end, and an orifice in the side of said stem, registering one with the other, the orifice in the side of said stem also adapted to register with the conduits or passage-ways in the arms of the globe, substantially as and for the purposes specified.

2. The nozzle having a plurality of arms extending from the body thereof, and integral therewith, the nozzle and arms having longitudinal openings therein, in combination with a stem affording a bearing for the nozzle to rotate upon, the said stem being provided with an extension adapted to receive a washer and a screw by means of which it is secured within said nozzle, an orifice in the side, and a longitudinal passage through the center of said stem, registering with each other, and with the conduits in the arms, substantially as and for the purposes specified.

3. In a nozzle, the combination with the globe having arms extending therefrom, and longitudinal openings in said globe and arms, a stem having a longitudinal orifice in the center, and an orifice in the side thereof, adapted to register with the conduits in said arms; of the exit tips C, D and E attachable to said arms, substantially as herein described.

4. In a nozzle, the combination with the globe having arms extending therefrom, and longitudinal openings in said globe and arms, a stem having a longitudinal orifice in the center, and an orifice in the side thereof, registering with the conduits in said arm as the globe is rotated on the stem; of the exit tips C, D, and E, the latter having the thimble C', substantially as herein described.

In testimony whereof I have hereunto set my hand this 18th day of February, 1893.

JOHN B. THIES.

Witnesses:

R. JAY MCCARTY,  
L. C. LEOTY.