

No. 704,780.

Patented July 15, 1902.

A. DE VILBISS.
ATOMIZER.

(Application filed Nov. 4, 1901.)

(No Model.)

Fig. 1.

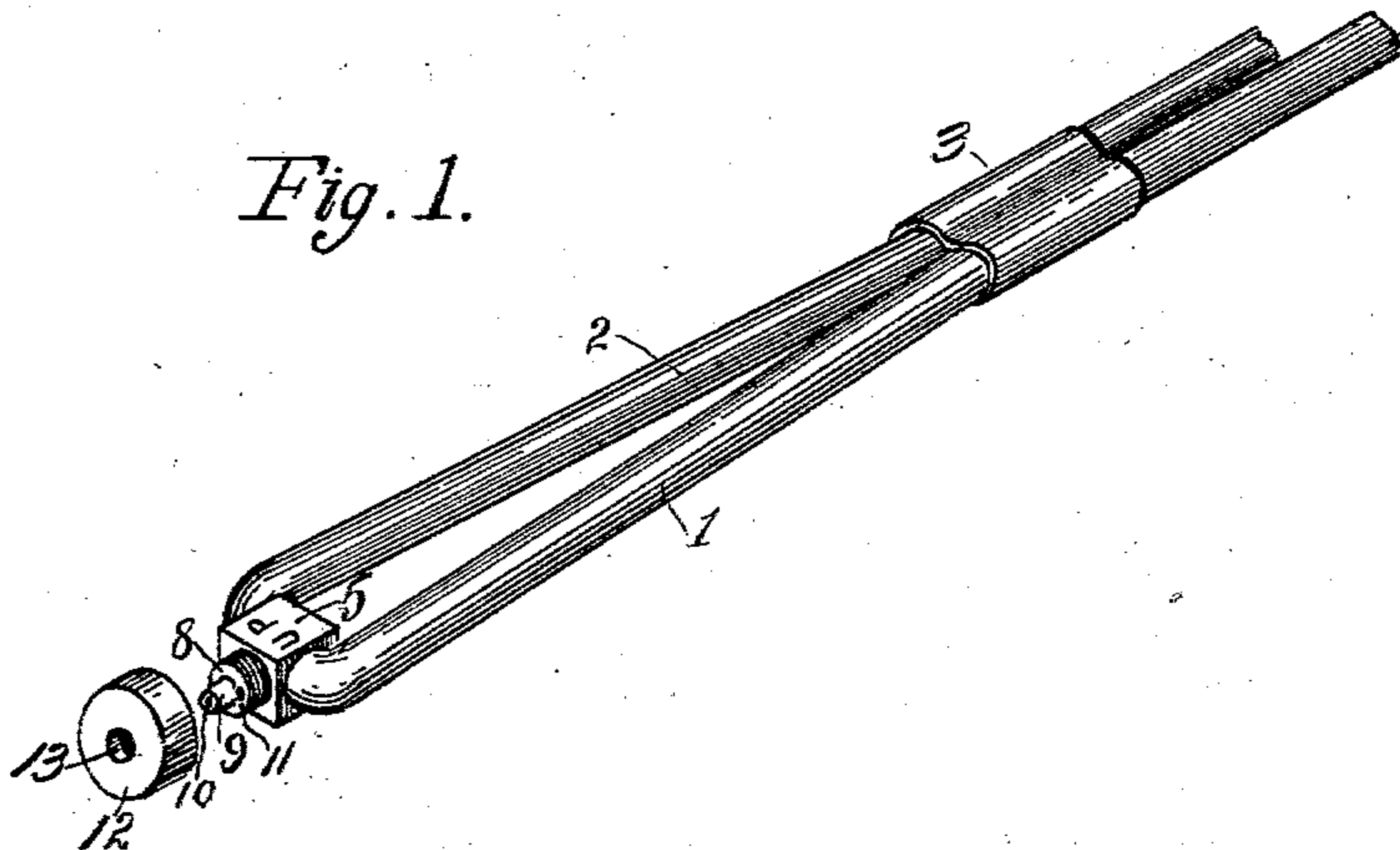


Fig. 2.

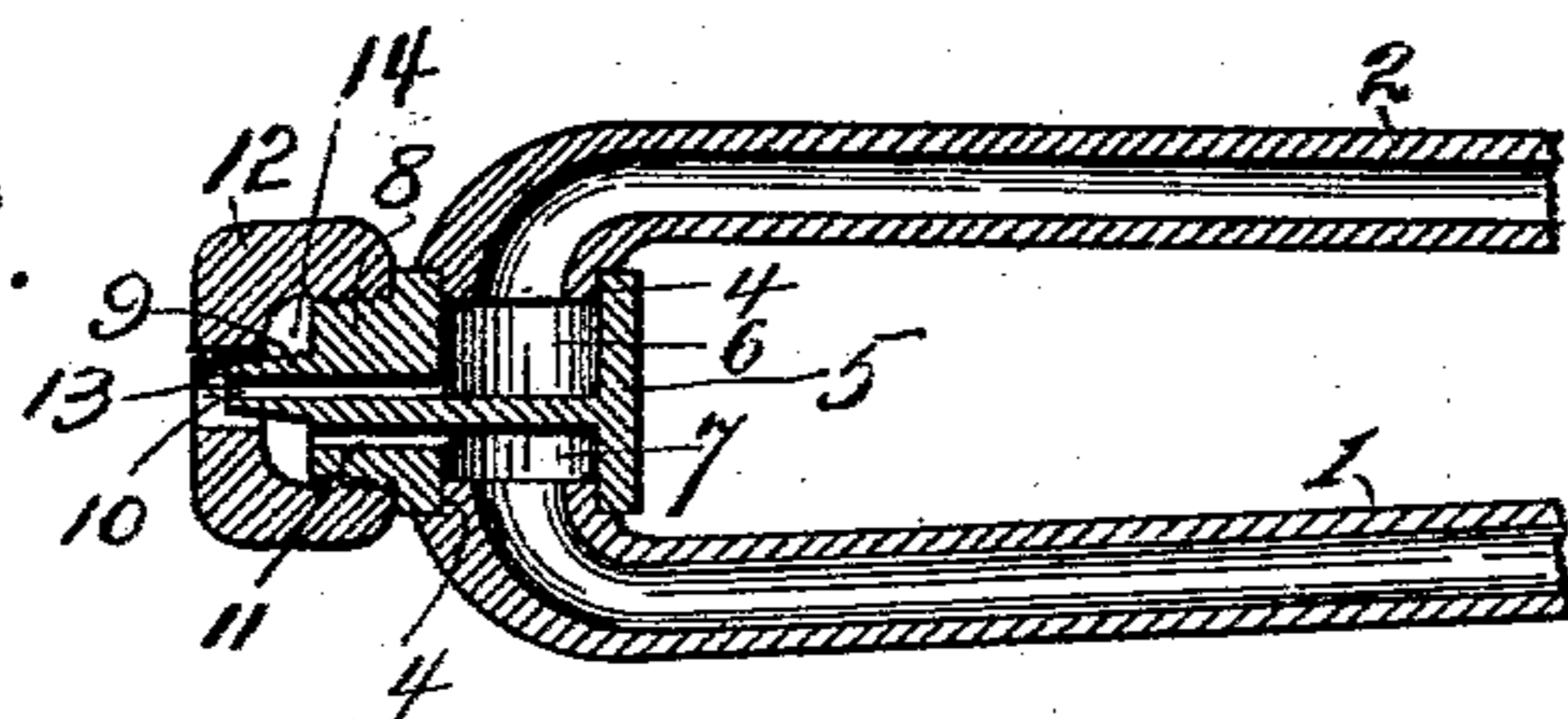
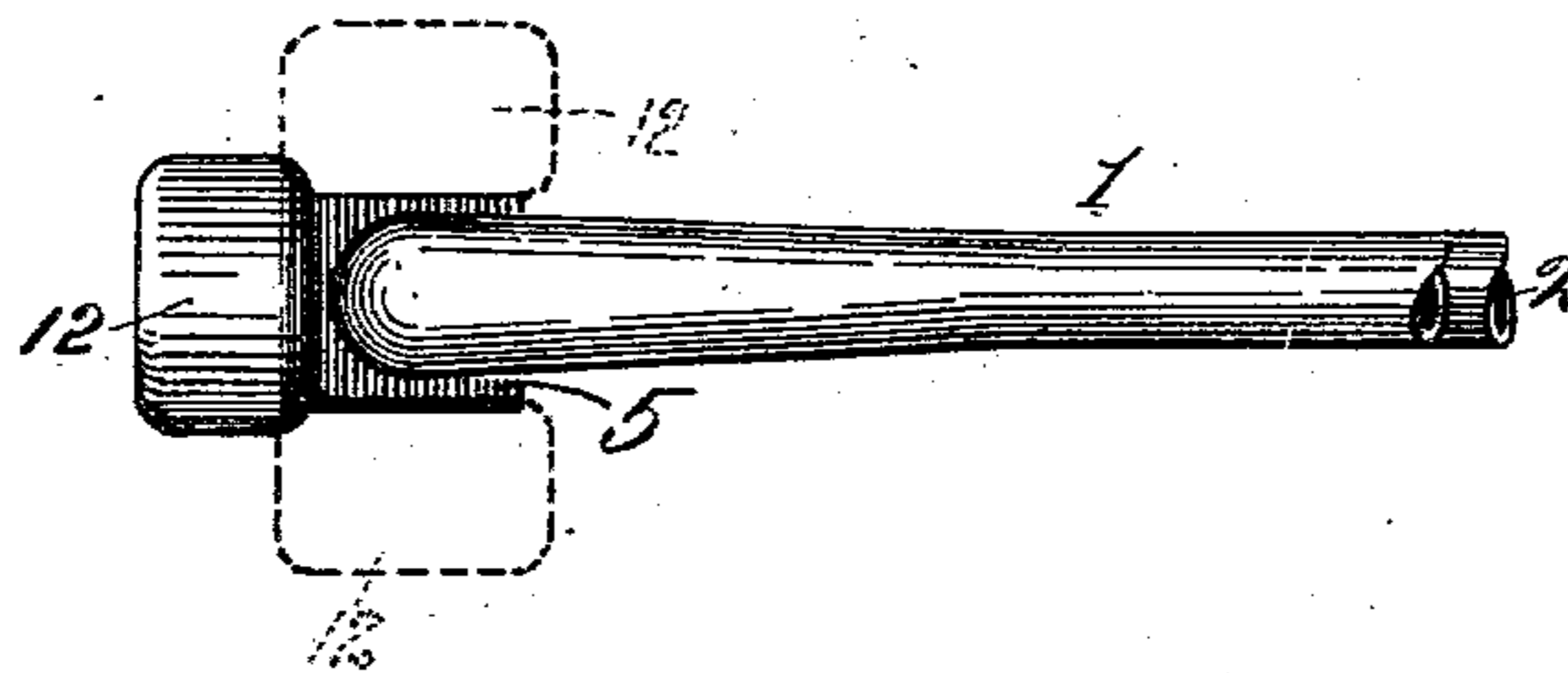


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALLEN DE VILBISS, OF TOLEDO, OHIO.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 704,780, dated July 15, 1902.

Application filed November 4, 1901. Serial No. 80,988. (No model.)

To all whom it may concern:

Be it known that I, ALLEN DE VILBISS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have
5 invented certain new and useful Improvements in Atomizers; and I do 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
10 make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of atomizers or spray-forming devices in which the
15 liquid to be sprayed is drawn from its vessel through a suitable conduit by a stream of air, with which the liquid mingles and is discharged in the form of spray or vapor.

20 My invention relates more particularly to an atomizer which is designed for the anterior and posterior applications of medicinal vapors in the treatment of the nasal passages.

The object of my invention is to provide a
25 cheap, simple, and efficient nozzle and head for an atomizer of the class above referred to, which nozzle and head may be readily and easily set at any angle in its plane of rotation, which, despite the absence of packing or gas-
30 kets, will not leak, and which may be readily and easily taken apart for inspection and for cleansing. I attain these objects by means of the devices and arrangement of parts hereinafter described and shown, and illustrated in
35 the accompanying drawings, in which—

Figure 1 is a perspective view of my device with the cap hereinafter referred to detached; Fig. 2, a central longitudinal sectional elevation of my device with the cap in place, and
40 Fig. 3 a side elevation of the same. The drawings for the sake of clearness show my device on an exaggerated scale.

Like numerals of reference indicate like parts throughout the drawings.

45 In the drawings, 1 and 2 are tubes which at some distance from their extremities are bound together in nearly parallel relation by metal band 3. The tube 1 is connected with an air-compressor bulb, and the tube 2 is con-
50 nected with the chamber of the vessel which contains the liquid to be atomized. The bulb and the vessel here referred to are omitted

from the drawings, as they form no part of my invention and being of the usual form will be well understood without illustration. At
55 their outer extremities the tubes 1 and 2 are turned inwardly, so that their ends point toward each other. The tubes are here reduced in diameter externally, as at 4, as illustrated in Fig. 2, for the purpose hereinafter de-
60 scribed.

5 is a block or head formed in general outline, preferably, as a cube. Two opposite sides of this block have circular recesses 6 and 7. These recesses are exactly opposite each other,
65 having coincident axes, and are of such diameter as to receive with a snug fit the reduced ends of the tubes 1 and 2. These tubes at their outer extremities may be sprung apart and the block may be slipped in between the
70 separated tube ends. The tubes by reason of their resiliency pinch and hold the block in place, and the ends of the tubes form a swivel upon which the block 5 may be rotated. The shoulders of the reduced end portions
75 of the tubes resting against the sides of the block form tight joints, which prevent leakage.

One of the unrecessed sides of the block 5 has a projection 8, which is cylindrical in form
80 and is exteriorly screw-threaded. Projecting centrally from the outer flat side of the part 8 is a nozzle-point 9. This point has a central bore 10, which extends into the chamber 6. A bore 11 extends from the flat face of the parts
85 8 into the chamber 7.

12 is an interiorly-screw-threaded cap, having a central orifice 13 and a hollow or cham-
ber 14. This cap screws onto the part 8 such
90 distance that the point 9 projects into and part way through the orifice 13, thus forming a thin annular opening surrounding the ex-
tremity of the point and connecting the cham-
ber 14 and the orifice 13. The bore or pas-
95 sage 11 connects the chambers 7 and 14.

The operation of my device is as follows: Assuming that the parts are assembled as shown and that the tube 1 is connected with an air-compressor and that the tube 2 is con-
100 nected with the liquid to be sprayed or vaporized, now if a strong current of air be sent through the tube 1 into the chamber 7 and thence on through the passage 11, chamber 14, and out through the annular orifice 13 the

flow of the air around the point 9 will create a partial vacuum, causing the liquid to flow through the tube 2, chamber 6, orifice 10, and into the opening 13. Here the liquid mingles
5 with the stream of air and is finely subdivided and discharged as a spray or vapor. It will be seen that the stream of mixed air and liquid may be discharged in any direction in the plane of rotation of the head or block 5 by
10 turning this part upon its bearings to the desired position.

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

15 1. In an atomizer, a head having two of its opposite sides formed with chambers therein, a pair of arms which enter and engage said chambers, a chambered cap adapted to engage said head and having a central orifice there-
20 through, a nozzle-point projecting into said orifice and connected with one of the cham-

bers of said head, and connections between the other chamber of the head and the chamber of the cap.

2. In an atomizer, a head having two cham- 25
bers therein, one of which has an air-supply connection, the other of which has a liquid-supply connection, a chambered cap detachably secured upon said head and having a cen-
tral aperture, a spraying-point upon said head 30
which enters said aperture and which has an axial passage connected with one of the chambers in said head, and connections between the chamber of the cap and the other chamber
of the head. 35

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

ALLEN DE VILBISS.

Witnesses:

M. D. MERRICK,
L. E. BROWN.