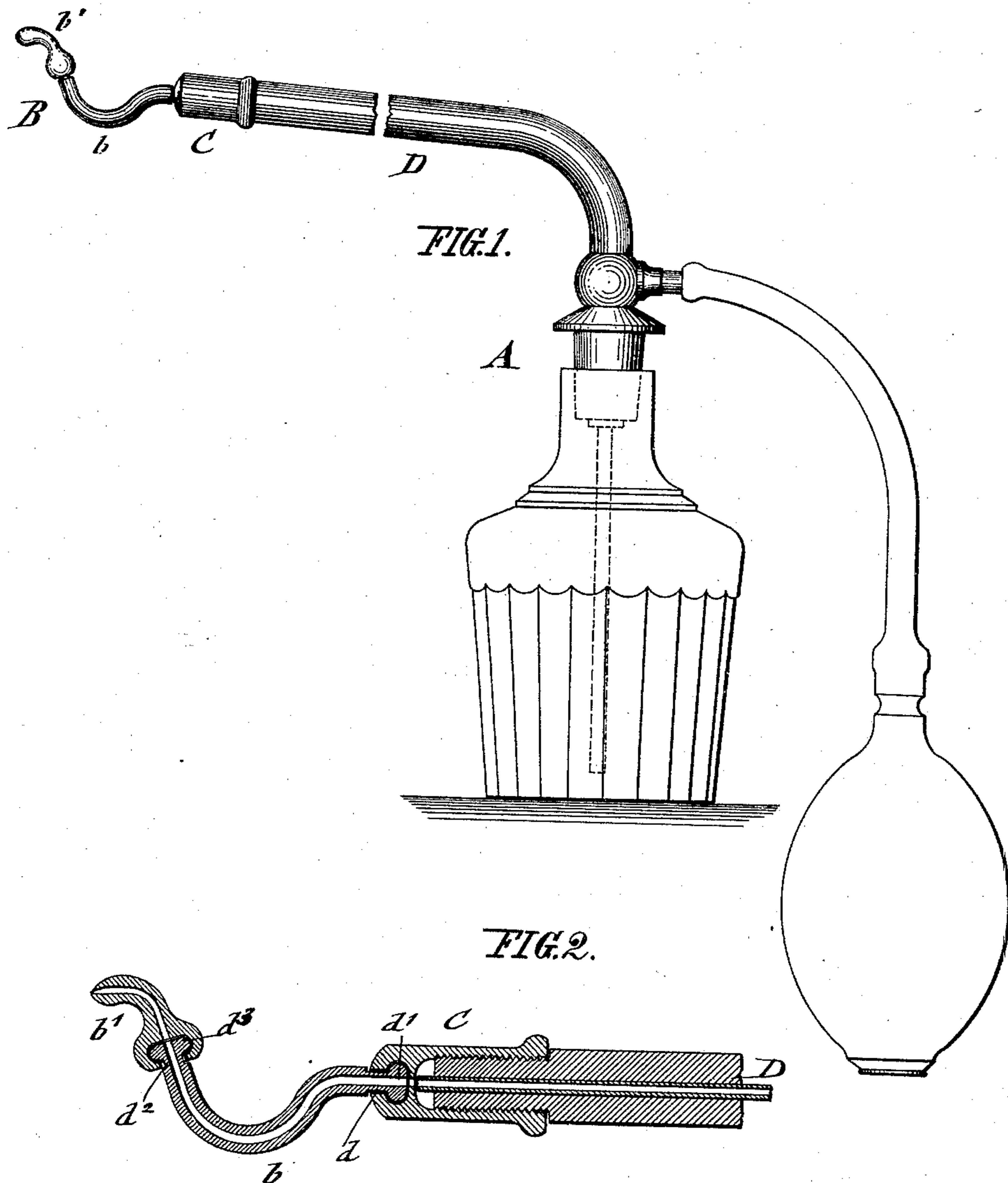


(No Model.)

W. HUGERSHOFF & F. LIPP.  
ATOMIZER NOZZLE.

No. 474,526.

Patented May 10, 1892.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM HUGERSHOFF AND FREDERICK LIPP, OF NEW YORK, N. Y.

## ATOMIZER-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 474,526, dated May 10, 1892.

Application filed October 26, 1891. Serial No. 409,773. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM HUGERSHOFF and FREDERICK LIPP, citizens of the United States, residing in the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Nozzles for Atomizers, of which the following is a specification.

This invention relates to an improved nozzle for atomizers and other instruments of this class, which nozzle has the advantage that it can be turned in every desired direction for use by being provided with a kind of universal joint for this purpose; and the invention consists of a nozzle for atomizers and similar instruments, which nozzle is made of two curved sections, one section being swiveled to the end of the atomizing-tube, while the other section is swiveled to the end of the first section, so that the nozzle can be turned in any desired direction and adjusted for any position required.

In the accompanying drawings, Figure 1 represents a side elevation of an atomizer with our improved nozzle, and Fig. 2 is a vertical longitudinal section of the nozzle drawn on a larger scale.

Similar letters of reference indicate corresponding parts in both the figures.

Referring to the drawings, A represents an atomizer or similar instrument, and B the nozzle of the same. The nozzle B is applied to a detachable cap C at the end of the atomizing-tube D, the nozzle being composed of two curved sections  $b$   $b'$ , of which the section  $b$  is preferably made larger, while the section  $b'$  is made of smaller size. The section  $b$  is swiveled to the cap C, which is accomplished by providing the end of the section  $b$  with an annular groove or depression  $d$  near its rounded-off end  $d'$  and springing the socket-shaped end of the cap C into said annular groove or depression, as shown in Fig. 2. The opposite end of the section  $b$  is likewise

rounded off and provided with an annular depression or groove  $d^2$  next to the rounded-off end  $d^3$ , over which the end of the outermost section  $b'$  is sprung. The connection of the cap C and of the outer section  $b'$  with the ends of the intermediate section  $b$  are readily produced by springing the end of the cap and the end of the outer section  $b'$  over the rounded-off ends of the section  $b$  while the cap and outer section are still in a heated and slightly-yielding condition, so that on cooling they shrink and fit snugly into the annular grooves or depressions of the section  $b$  and form a tight joint with the same. The so jointed and swiveled nozzle can be turned in any direction and placed in any desired position as required for use, so that an atomizer or other instrument provided with such a nozzle is more convenient for use than the ordinary atomizer provided with a fixed nozzle.

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

A nozzle for atomizers, composed of a cap screwed to the end of the air-supply tube and of two curved sections, one section being connected to the end of the cap by means of a rounded-off collar and an annular groove adjacent to said collar, which collar and groove fit into a corresponding recess of the cap, so as to turn therein, while the second or outer section is provided with an annular recess and lip that fits over the rounded-off end, and an adjacent annular groove at the opposite end of the first or intermediate section, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

WM. HUGERSHOFF.  
FREDERICK LIPP.

Witnesses:

PAUL GEOPEL,  
CHARLES SCHROEDER.