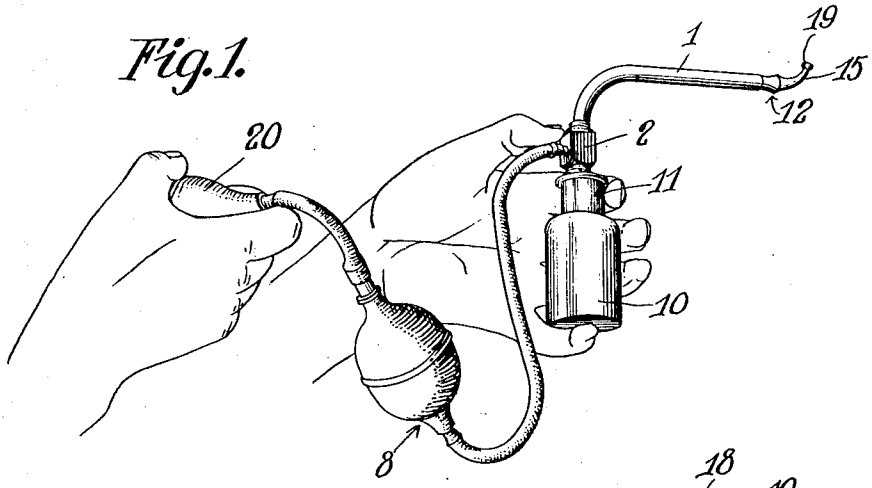
No. 891,911. PATENTED JUNE 30, 1908.

J. COOPERIDER.

ATOMIZER.

APPLICATION FILED FEB. 28, 1907.

Fig. 1.



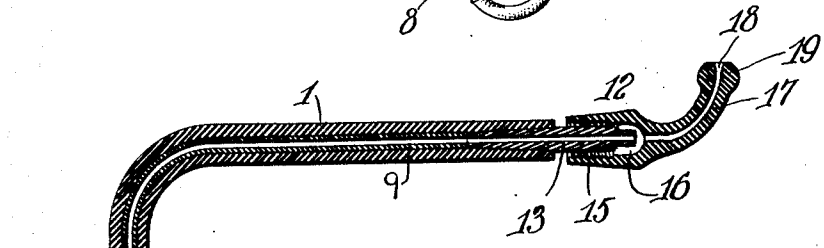


Fig. 2.

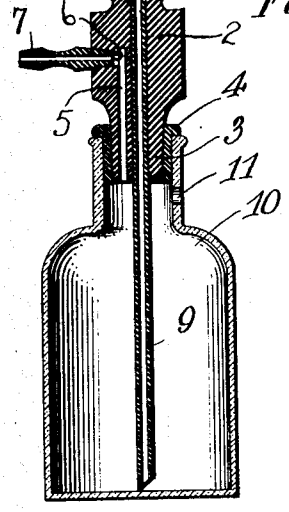
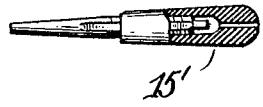


Fig. 4.



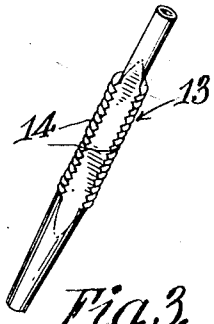
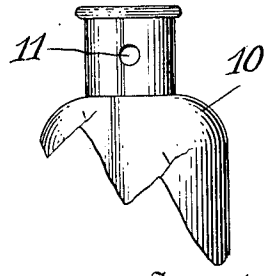


Fig. 3.

Fig. 5.



Inventor

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UNITED STATES PATENT OFFICE.

JEFFERSON COOPERIDER, OF MADISON, INDIANA.

ATOMIZER.

No. 891,911. Specification of Letters Patent. Patented June 30, 1908.

Application filed February 28, 1907. Serial No. 359,930.

To all whom it may concern:

Be it known that I, JEFFERSON COOPERIDER, a citizen of the United States, residing at Madison, in the county of Jefferson and State of Indiana, have 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 make and use the same.

This invention relates to an atomizer.

The object of the invention is to produce an atomizer especially designed for treatment of diseases of the nose and throat, in which the spray may be cut off without removing the point of the atomizer from the nose or throat of the patient, thereby rendering it more agreeable than the old form now in use.

Another object is to provide a small compact apparatus which may be carried within the hand and which may be easily changed from one bottle to another to permit the use of various medicaments on a patient at one sitting.

Another object is to provide an apparatus which may be readily taken apart and disinfected.

Another object is to so combine the spray point and tube whereby sprays of different volume may be made without changing the parts by adjusting the point to and from the outer end of the tube.

In the accompanying drawings,—Figure 1 represents a perspective view of this improved atomizer in position in the hands of the operator ready for use; Fig. 2 represents a vertical section thereof with the bulbed connecting tube omitted; Fig. 3 represents a perspective view of the spray point; Fig. 4 represents a side elevation of another form of the compound spray tip; Fig. 5 represents a side elevation of the top portion of the bottle to which this improved atomizer is adapted to be applied.

In the embodiment illustrated, a tubular member 1 is shown preferably composed of hard rubber and bent intermediate of its ends at an angle. The lower end of this tube terminates in an enlarged base or body portion 2, having a conical end 3 on which a gasket 4 preferably of rubber is adapted to fit. This body portion 2 has a longitudinally arranged channel 5 preferably extending parallel with its bore and communicating with this channel is a laterally extending channel 6 which extends through the side of the body 2. A hard rubber, hollow nipple 7 is inserted in this opening 6 and has a double bulbed-rubber hand-pumping tube 8 of ordinary construction attached thereto. This tubular member 1 may be of any desired length and has fitted in its bore a rubber tube 9 which extends from the spray tip hereinafter described backward through the end of the body portion 2 and projects a sufficient distance to extend into the bottle 10 to which it is to be applied, preferably to the bottom thereof. This bottle 10 is of ordinary construction except that it has an opening 11 through one side of its neck at a point below the end of the tapered end of the body 2 which forms a closure for the bottle, for the purpose to be described. The bottle to which this device is to be applied is preferably what is known as a "squat" bottle, and of a size to be held conveniently between the thumb and little finger of the hand of the operator when in use.

Mounted in the outer end of the tubular member 1 is a compound spray tip 12 consisting of a small hollow rubber tube 13 about one and three-quarter inches long with a bore of one-sixteenth of an inch in diameter. This tube 13 tapers at both ends and has two of its sides flattened on their outer faces to afford passages for the air to the spray point 15 which is screwed on one end of the tube 13. This tube 13 is about one-eighth of an inch in diameter at its middle and largest part and screw-threads, as 14, cut on it for about three-fourths of an inch commencing one-fourth of an inch from the point or end on which the spray point 15 is mounted, the opposite tapered end which is secured in the outer end of the tube 9 within the tube 1 and is preferably made longer than the end which is engaged with the tip or point 15. The spray point 15 is internally screw-threaded to engage the screw thread on the tube 13 and has an enlarged chamber 16 surrounding the end of the tube 13 when the parts are assembled. This chamber 16 terminates abruptly in a capillary tube 17 provided with an opening 18 which runs to the front end of the spray point 15. This spray point has a bulb-like

terminal 19, and this bulb-carrying end is bent at an angle of about 35° to permit the spray to be thrown in any desired direction. The end member 15 of the compound spray point 12 is adjustable on the tube 13 to change the spray from coarse to fine, and vice versa by turning it to the right or the left as desired. When the member 15 is screwed up the point of the tube 13 comes in close contact with the capillary opening 18, a solid stream is delivered through the end of the point, and when turned in the opposite direction it is moved away from the point of the tube 13 and the air is permitted to mix with the liquid in the chamber 16 and a spray is formed and the further the member 15 is unscrewed the finer the spray produced.

The form shown in Fig. 4 is similar to the other above described, except that the member 15 is made straight instead of being bent.

When the parts are assembled and applied to a bottle containing liquid to be sprayed as shown in Fig. 1, the opening in the neck of the bottle being closed with the tip of the fore finger of the left hand, the operator presses the end bulb 20 and air is forced into the bottle through the nipple and the channels in the body portion 2 and the liquid is forced up through the tube 13 and mixing with the air in the chamber 16 passes out through the capillary opening 18 in the tube 15 in the form of spray. When it is desired to cut off the spray the tip of the fore finger is raised off the hole 11 in the bottle neck and the spray instantly ceases.

I claim as my invention:—

1. An atomizer comprising a vessel, a tubular member provided with an enlarged top portion forming a closure for said vessel, a discharge tube passing therethrough, a connecting device secured in the tubular member and communicating with said discharge tube, said connecting device being flattened upon its sides and externally threaded, and a discharge nozzle adjustably threaded upon said connecting device to determine the space between the nozzle and tubular member and thereby the amount of air to be mixed with the material discharged from the vessel.

2. An atomizer comprising a vessel, a tubular member, a discharge tube therein, a connecting device secured to said tubular member and having communication with the discharge tube, said connecting device having flattened sides and a threaded exterior, means for forcing fluid through the discharge tube, a discharge nozzle adjustably mounted upon the connecting device and having a vaporizing chamber connected with its discharge spout, and means to regulate the size of said vaporizing chamber and thereby the volume of spray.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JEFFERSON COOPERIDER.

Witnesses:
WILLIAM T. FRIEDLEY,
NICHOLAS HARPER.