Dec. 29, 1931. L. L. SCOTT 1,838,873

ATOMIZER

Filed Feb. 27, 1930

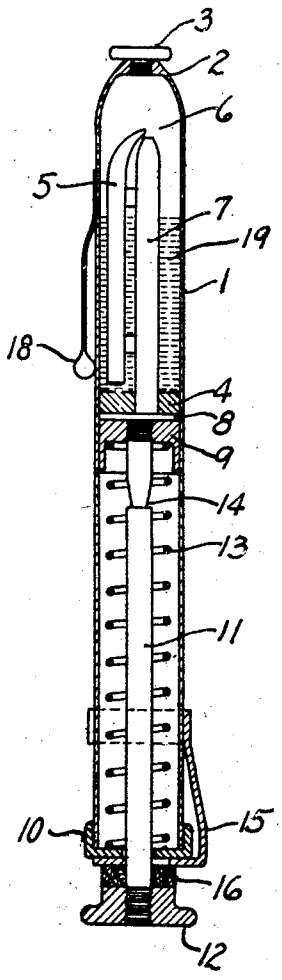


FIG. 1

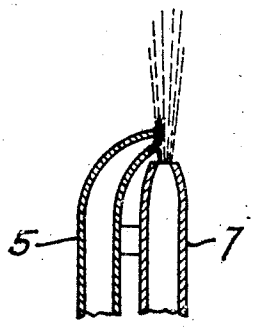


FIG. 3

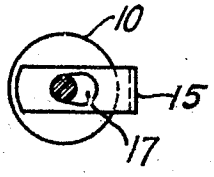


FIG. 2

INVENTOR.

Lewis L. Scott

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UNITED STATES PATENT OFFICE

LEWIS L. SCOTT, OF ST. LOUIS, MISSOURI

ATOMIZER

Application filed February 27, 1930. Serial No. 431,778.

This invention relates to atomizing instruments of the type employed for applying a medicated liquid in a spray or finely atomized form to the nose and throat.

The object of my invention is to provide an atomizer of very small compact dimensions, that is highly efficient and neat in appearance, and that may be carried in the pocket, if desired.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a sectional view of my atomizer, which is approximately full size.

Figure 2 is a bottom end view of Figure 1, shown with the pull button and bumper washer removed.

Figure 3 is an enlarged sectional view of a portion of the liquid suction and air pressure tubes.

Referring now to the drawings, the numeral 1 indicates a round tube which may be made of metal or any other desirable material, and which is formed at the top 2 with a tapered portion which is adapted to fit into the nostrils. 3 is a removable cap, or stopper for preventing liquid from running out in case the tube should be turned upside down, when not in use. The numeral 4 indicates a circular disc, which is pressed into the tube from the lower side, thereby forming an upper and lower compartment. The numeral 5 indicates a liquid suction tube contained in the upper compartment 6, having one end running near the bottom of said upper compartment, and the other end running near the top of said upper compartment. 7 is an air tube which supports the liquid suction tube 5, and is arranged within the upper compartment 6 in aspirating relation to the tube 5, said air tube 7 runs through the disc 4 and connects to the lower compartment 8 of the tube 1. The numeral 9 indicates a piston which is slidably mounted in the lower compartment of the tube 1. The lower end of the tube 1 is threaded and carries the nut 10, which nut 10 has a central opening to permit movement of the rod 11, which rod is secured to the piston 9 and carries at its lower end, a pull button 12. The numeral 13 indicates a coil spring which is around the rod 11 and has one end seating on the lower side of the piston 9 and the other end seating on the nut 10. Said spring 13 normally maintains the piston and connected parts in the position shown in Figure 1. The numeral 14 indicates a notch cut in the rod 11, which notch is adapted to be engaged by the flat spring 15, which spring is attached to the tube 1 and is arranged on the bottom side of the nut 10 and is normally under tension so that if free, it would move to the right of its position shown in Figure 1. The numeral 16 indicates a washer, which may be made of rubber or leather, which washer is placed between the pull button 12 and the lower part of the spring 15. The numeral 17, (see Figure 2), indicates an elongated slot cut in the lower side of the spring 15 so as to permit the operation of the rod 11 and to also permit the spring 15 to be manually moved to the left of its position shown in Figure 1. The numeral 18 indicates a pocket clip, commonly used on fountain pens. 19 indicates a medicated liquid contained in the upper compartment—this upper compartment is only partly filled with this liquid, as indicated in Figure 1.

When it is desired to use the atomizer, the cap 3 is removed and the tube 1 is held vertically while the pull button 12 is manually engaged and moved downward until the spring 15 engages the slot 14—this will put the spring 13 under tension. The piston 9 is then in its lowest position and air has been drawn into the chamber 8 through the tube 7. The tip 2 is then inserted in the nostril and the spring 15 is manually pressed to the left of its position shown in Figure 1 so as to release the rod 11, whereby the piston and connected parts will move rapidly upward, forcing the air from the chamber 8 through the tube 7, thereby drawing liquid from the upper compartment through the tube 5 and finely atomizing said liquid and forcing said atomized liquid through the upper part of the tube into the passages of the nose. The bumper 16 provides a cushion stop so that the piston 9 does not contact with the disc 4.

I have found that it is highly desirable to provide the latching spring 15 so as to permit setting the piston 9 in its lower position

before the tip 2 is inserted in the nostril. If I did not provide the latch spring 15 and simply held the tube 1 in the left hand and pulled on the button 12 with the right hand, and then released said button, the tip 2 will be jabbed into the nose, because the left hand is resisting the pull of the spring 13, and when the button 12 is released, the left hand has a tendency to move upward, thereby moving the tube into the nostril. I have found, however, that by providing the spring 15 so as to latch the piston 9 and its connected parts into its lower position, I can avoid this difficulty.

Where it is desired to use this atomizer in the home, where it might be set on a dresser, it is obvious that I can provide any form of artistically designed base to support said atomizer in a vertical position.

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

1. In an atomizer for atomizing liquids, a cylindrical tube divided into an upper and a lower compartment, the upper compartment having an outlet for atomized liquid and being adapted to contain the liquid to be atomized, a liquid suction tube arranged within the upper compartment, one end of which is near the bottom of said compartment and the other end near the top, an air tube located within the upper compartment in aspirating relation to the top of the liquid suction tube, said air tube being in communication with the upper part of the lower compartment, a slidably arranged piston contained in the lower compartment, a spring arranged in cooperative relation with the piston normally maintaining said piston at the upper limit of its stroke, means arranged to permit manual movement of the piston downward, thereby storing energy in said spring, an automatic locking device arranged to lock the piston in its lower position, said automatic locking device being arranged to be manually released, thereby releasing the piston so that it will move rapidly upward by action of the spring and force air from the lower compartment through said air tube and thereby project an atomized spray from the top opening of the upper compartment, substantially as described.

2. In an atomizer for atomizing liquids and projecting said liquids into the nose, a cylindrical tube divided into an upper and lower compartment, the upper compartment having an outlet for atomized liquid and being adapted to contain the liquid to be atomized and having a tip adapted to be inserted into the nose, a liquid suction tube arranged within the upper compartment, one end of which is near the bottom of said compartment, and the other end near the top, an air tube located within the upper compartment in aspirating relation to the top of the liquid suction tube, said air tube being in communication with the upper part of the lower compartment, a slidably arranged piston contained in the lower compartment, a spring arranged in cooperative relation with the piston, normally maintaining the piston at the upper limit of its stroke, means arranged to permit manual movement of the piston downward, thereby storing energy in said spring, an automatic locking device arranged to lock the piston in its lower position, said locking device being arranged to be manually released, thereby releasing the piston so that it will move rapidly upward by action of the spring and force air from the lower compartment through said air tube and thereby project an atomized spray from the tip opening of the upper compartment into the nose.

3. In an atomizer for atomizing liquids and projecting an atomized spray into the nose, a container for the liquid, a tip having an opening through which the atomized spray may pass, said tip being adapted to be inserted into the nostril, a liquid suction tube located within the liquid container, an air tube located in aspirating relation to the top of the liquid suction tube, a plunger air pump rigidly secured to the liquid container and adapted to furnish air to the air tube for atomizing the liquid, a slidably arranged piston contained in the air pump, a spring arranged in cooperative relation with the piston, means arranged to permit manual movement of the piston so as to store energy in said spring, an automatic locking device arranged to lock the piston in a position where energy is stored in the spring, said atomizer being adapted to be held in the hand and so arranged that the automatic locking device can be readily released by the hand, thereby releasing the piston so that it will move rapidly by action of the spring and force air through the air tube and aspirate liquid through the liquid tube and atomize same, and force said atomized liquid into the nose, substantially as described.

4. In an atomizer for atomizing liquids, a cylindrical tube divided into an upper and lower compartment, the upper compartment having an outlet for atomized liquid and being adapted to contain the liquid to be atomized, a liquid suction tube arranged within the upper compartment, one end of which is near the bottom of said compartment, and the other end near the top, an air tube located within the upper compartment in aspirating relation to the top of the liquid suction tube, said air tube being in communication with the upper part of the lower compartment, a slidably arranged piston contained within the lower compartment, a rod attached to the piston and extending below the lower end of the pump barrel, a nut secured to the lower end of the pump barrel having a central opening through which the rod may pass, a

spring arranged around the rod, one end of which bears against the piston and the other end against the nut, a pull button secured to the lower end of the rod, whereby said piston and connected parts may be manually moved so as to store energy in the spring, an automatic spring locking device located between the nut and the pull button, said rod attached to the piston having a notch which is adapted to be engaged by the automatic spring locking device, said spring locking device being arranged to be manually released, thereby releasing the piston so that it will move rapidly by action of the spring and force air through the air tube and force liquid through the liquid suction tube, and atomize same.

In testimony whereof, I have hereunto set my hand.

LEWIS L. SCOTT.