May 27, 1947. T. S. SUTHERLAND 2,421,359

ATOMISER

Filed June 20, 1944

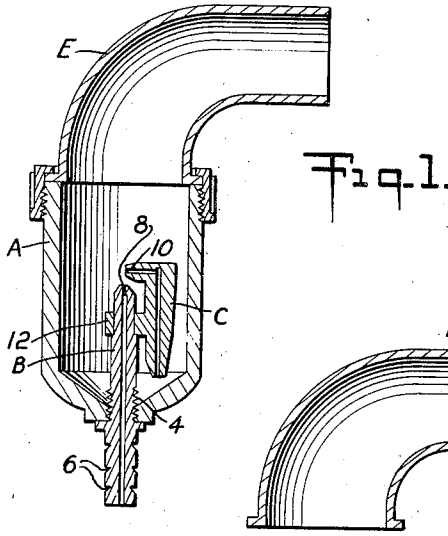


Fig. 1.

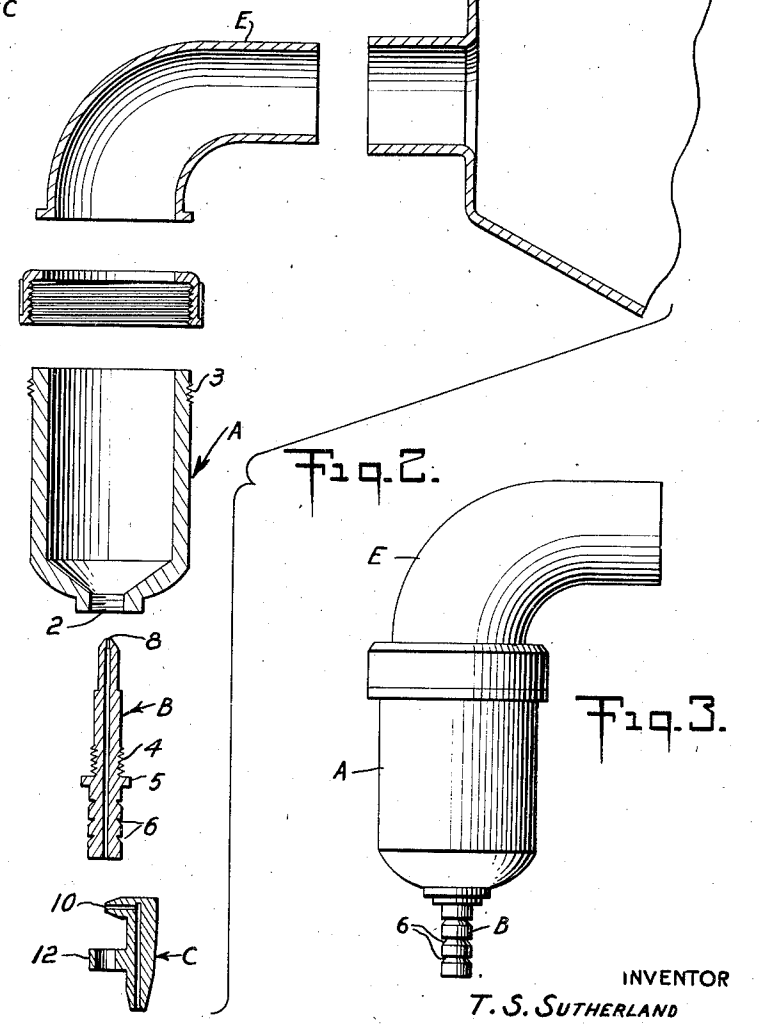


Fig. 2.

Fig. 3.

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ATOMISER

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2 Claims. (Cl. 299—88.5)

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This invention relates to atomisers for atomising or atomising and mixing a liquid and a gas or air and has for its chief object the simplification of the construction of such devices whereby cleaning, manufacturing and other difficulties may readily be overcome.

The invention is particularly applicable to atomising or spraying apparatus adapted for use in supplying an atomised liquid to, for example, parts of the body such as the nostrils and throat.

According to the invention, there is provided an atomiser for atomising or atomising and mixing a liquid and a gas such as air comprising a liquid container having a tubular element or air tube mounted therein and another tubular element or liquid tube adjustably and detachably mounted in position on the first mentioned tubular element or air tube.

In the preferred form of the invention, the tubular element or air tube is arranged so that it extends upwardly through the liquid contained in said container to a point above the level of the liquid and is provided at its upper end with a nozzle and the second tubular element or liquid tube is adjustable and detachably mounted in position on the upper part of the air tube and is formed with an offset outlet portion, the arrangement being such as to permit the relative positions of the nozzle and said outlet portion to be varied in order to obtain the proper and directed atomisation of the liquid.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be more fully described with reference to the accompanying drawings, in which—

Fig. 1 is a sectional view of the device showing the elements thereof in their assembled positions;

Fig. 2 is a view showing the individual elements in section and separated; and

Fig. 3 is a side view of the device.

In the form of atomiser illustrated in the accompanying drawings, A indicates the body portion thereof which is shaped or formed to constitute a container for the liquid to be atomised and is provided with a screw-threaded opening 2 at its lower end to permit a tubular element or air tube to be passed therethrough and secured in position therein. At its upper end the container may be threaded as indicated at 3 to enable a suitable cover member provided with an outlet for the atomised liquid to be fitted in position thereon or to enable a curved neck such as is shown at E to be fitted, which neck may be detachably connected to means such as a face mask F.

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The aforesaid tubular element or air tube is preferably formed as shown at B so that intermediate its ends it is provided with a screw-threaded portion 4 for engagement with the threaded opening 2 in the lower part of the container, said screw-threaded portion 4 terminating at its lower end in a shoulder 5 which is adapted to bear against the bottom of the container. The portion of the air tube below the shoulder 5 is preferably grooved as indicated at 6 to enable a length of rubber or other tubing to be attached thereto for the purpose of coupling the air tube with a deflatable bulb or source of air or gas under pressure. At its upper end, the air tube is formed with a restricted air outlet or nozzle 8. Also, fitted in position on the upper part of the air tube is a liquid conveying tube C having its outlet 10 disposed adjacent the nozzle 8. As will be seen, the outlet 10 is formed in an offset portion and the tubular member C is provided with an apertured lug 12 which is slidably mounted in position on the upper part of the air tube so that the position of the outlet 10 relatively to the nozzle 8 may be varied for the purpose of obtaining the correct setting and the proper and directed atomisation of the liquid. Also, the arrangement is such that the tubular member C may readily be removed from its position on the air tube when necessary as, for example, when cleaning.

It will be observed that the tubular member C is provided with a part which extends downwardly below the apertured lug 12 and it will be appreciated that the arrangement is such that this part extends into the liquid and that the nozzle 8 and the outlet 10 are disposed above the level of the liquid.

The component parts of the device may be formed of any suitable materials such as glass, metal or porcelain or the materials referred to generally as plastics.

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

1. An atomiser for mixing liquid and gas that is readily assembled and disassembled for cleaning comprising a liquid container having a removable breathing connection at the top thereof, and an opening in the bottom thereof, an air stem extending into said container from the bottom through said opening and forming a liquid tight seal therewith, said stem having a stop adjacent the top thereof, a fluid tube having thereon an encircling bracket tightly surrounding said stem, and contacting said stop, one end of said fluid

tube being near the upper end of said stem, being spaced therefrom by said bracket and stop, both said tube end and stem end being adapted to be above the liquid level of said container, and the other end of said tube being adapted to be below said liquid level, said tube and bracket being removable from said stem through the top of the container, to permit the removal of the stem from the container through the bottom opening therein for cleaning.

2. An atomiser for mixing liquid and gas that is readily assembled and disassembled for cleaning comprising a liquid container having a removable breathing connection at the top thereof, and a threaded opening in the bottom thereof, a threaded air stem screwed into said container from the bottom through said opening and having a shoulder thereon forming a liquid tight seal therewith, said stem having a stop adjacent the top thereof, a fluid tube having thereon an encircling bracket tightly surrounding said stem, and contacting said stop, one end of said fluid tube being near the upper end of said stem, being

spaced therefrom by said bracket and stop, both said tube end and stem end being adapted to be above the liquid level of said container, and the other end of said tube being adapted to be below said liquid level, said tube and bracket being removable from said stem through the top of the container, to permit the removal of the stem from the container through the bottom opening therein for cleaning.

THOMAS SCOTT SUTHERLAND.

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