Jan. 5, 1932. J. F. BLANCHARD 1,839,193

THERAPEUTIC GAS GENERATOR

Filed July 1, 1930

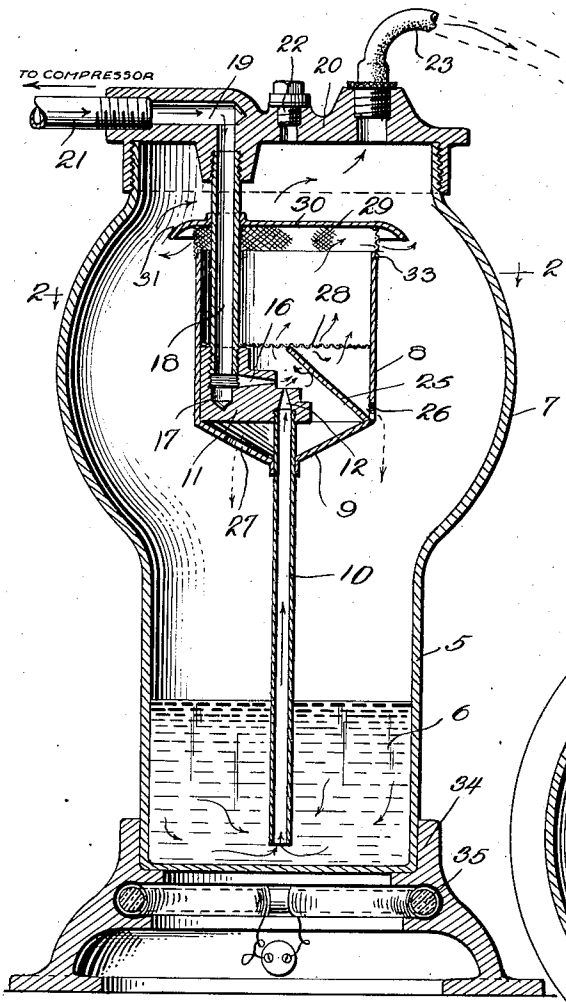


Fig. 1

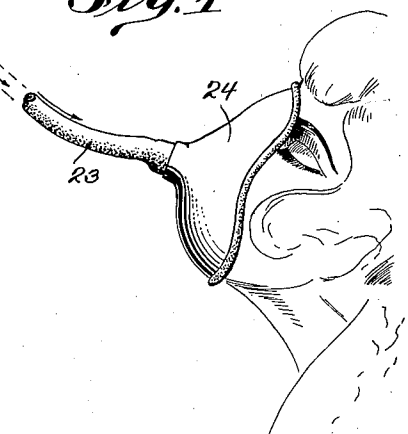
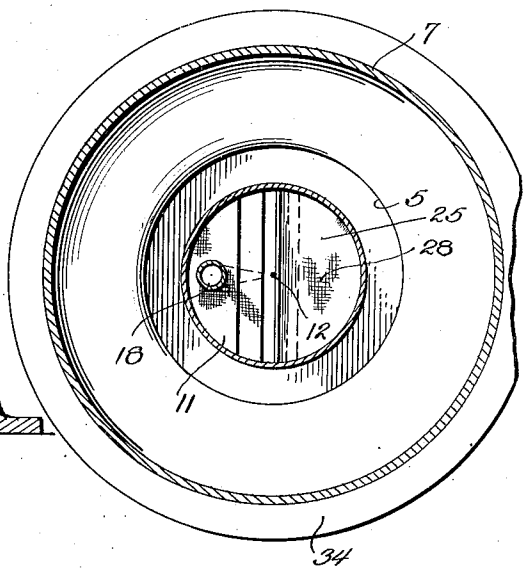


Fig. 2



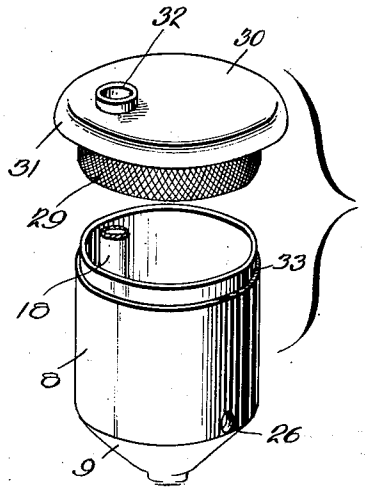


Fig. 3

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Patented Jan. 5, 1932 1,839,193

UNITED STATES PATENT OFFICE

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THERAPEUTIC GAS GENERATOR

Application filed July 1, 1930. Serial No. 465,211.

The present invention relates to improvements in therapeutic gas generators, and has for an object to provide an improved medicinal gasifying device for administering gaseous medicaments through the mouth and nose.

Another object of the invention is to provide a compact and simple form of device having a high atomizing action and adapted to quickly gasify the liquid medicine.

A further object of the invention is to provide an improved gasifying unit which will have the effect to secure purity of gas and a proper mixture and proportion thereof.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a vertical sectional view taken through an improved therapeutic gas generator constructed in accordance with the present invention and shown as applied for use.

Figure 2 is a horizontal section taken on the line 2—2 in Figure 1, and

Figure 3 is a perspective view of the improved gasifying unit.

Referring more particularly to the drawings, 5 designates the lower portion of a bronze or other container in which the liquid body of the medicine is contained and indicated at 6. In the upper globular portion 7 of the container which encloses the gas space, is arranged the gasifying unit and supported therein in any appropriate manner. This unit includes the cylindrical wall 8, from the lower edge of which extends the inverted conical bottom 9.

The liquid suction tube 10 extends up through the center of the conical bottom 9 and its lower end is immersed in the liquid body 6. The upper end of the suction tube 10 extends into a socket in a nozzle block 11 mounted within the container wall 8 and having therein the conical nozzles 12 and 16, the axes of which are disposed at substantially right angles whereby the jets or streams from the nozzles will intercept one another at a point just beyond such nozzles.

The vertical nozzle 12 is an extension of the socket in which the suction pipe 10 is fitted; while the horizontal nozzle 16 communicates with a space 17 into which the compressed air pipe 18 is screw threaded or otherwise removably connected.

This compressed air pipe extends up through the container wall 8 and connects with passages 19 in the top cover 20 of the device. The passages 19 connect with a pipe 21 in communication with a source of compressed air supply. The cover 20 is provided with a removable plug 22 through which the medicine 6 may be introduced into the device. This cover 20 is also provided with a connection for the flexible tube 23 to which the face cover or hood 24 is attached. This hood 24, in Figure 1, is illustrated as extending over the face of the patient.

A baffle plate 25 is disposed within the container 8 and is diagonally disposed extending from the junction of the wall 8 with the bottom 9 at a point remote from the nozzle block 11 and extending up diagonally toward and above the nozzle block and intercepting the stream of compressed air issuing from the nozzle 16. The side wall 8 is provided with one or more perforations 26 at the base thereof just above the point of connection with the baffle 25. The hopper bottom 9 is also provided with one or more drain openings 27.

A screen 28 is stretched across the gasifying chamber within the container 8 just above the nozzle block 11 and upper end of the baffle plate 25 and a second vertical screen section 29 surrounds the upper open portion of the chamber and forms substantially a continuation of the side wall 8.

This screen section 29 may be carried by a cover 30 formed with a downturned marginal flange 31 to direct the liquid medicine down into the lower portion 5 of the container. A boss upon the cover 30 provides for receiving the compressed air pipe therethrough. The container wall 8 is formed with a shoulder 33 at its upper end to receive the screen section 29.

In the use of the apparatus, compressed air is turned into the pipe 21, descends through the pipe 18 and enters the nozzle 16, from which it issues in a minute strong stream. This stream crosses the mouth of the nozzle 12 causing a suction of the liquid medicine 6 up through the suction tube 10. This liquid medicine is entrained with the jet of compressed air and the mixture impinges against the baffle plate 25, being broken up and gasified thereby, and deflected downwardly toward the hopper or conical bottom 9, which will catch any precipitated liquid, allowing the excess thereof to flow out through the drain openings 27. The gas will rise upwardly through the screen 28 which will strain out foreign matter.

The horizontal screen 28 will have a like effect and the depending flange 31 will cause the gas after passing through the screen section 29 to be deflected downwardly, thus providing a baffle surface on which any particles of moisture may lodge and drip down into the container below. The pure gas goes out through the tube 23 to the hood 24 and is inhaled by the patient.

The device may rest upon a base 34 if desired having an electric or other heating unit 35 therein, which will raise the temperature of the liquid medicine body 6, thereby increasing its tendency to gasify. The fine mesh screens will act to atomize and break up the mixture.

The oily, aqueous or alcoholic solutions are atomized to such an extent that they can enter the red corpuscles of the lungs and be carried to all parts of the body by the blood. This requires the finest and driest form of gaseous drugs; atomized and nebulized vapors being unable to enter the red corpuscles.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claim.

What is claimed is:—

In a therapeutic gas generator, a gasifying unit for inhaling devices comprising a cylindrical container wall having an inverted conical bottom, a suction tube entering through the bottom, a nozzle connecting with the tube, a compressed air nozzle angularly disposed to the medicine nozzle, a diagonal baffle plate extending in front of and above said nozzles, a fine screen stretched across said container above the nozzles and baffle plate, a cover having a marginal downwardly directed flange, and a screen stretched between the cover and wall of the container.

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