

Nov. 27, 1951

R. R. FISHER
ELECTRIC VAPORIZER

2,576,110

Filed March 22, 1949

2 SHEETS—SHEET 2

FIG. 3.

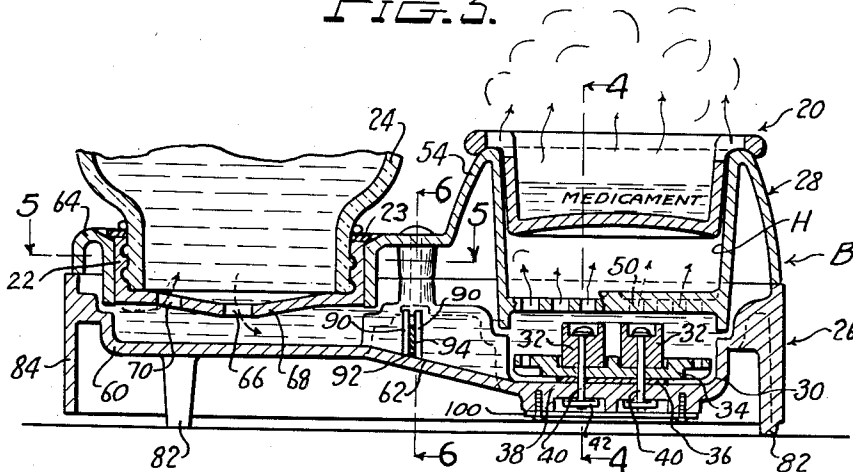


FIG. 4.

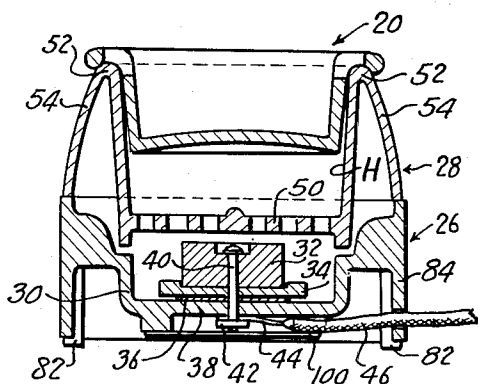


FIG. 5.

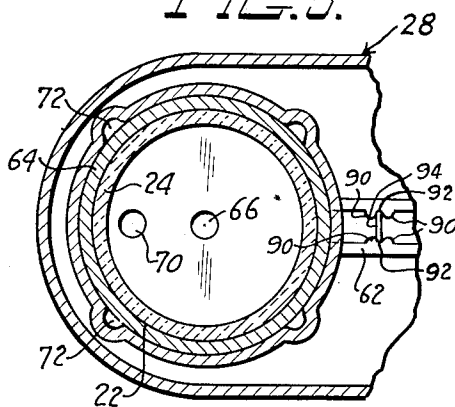
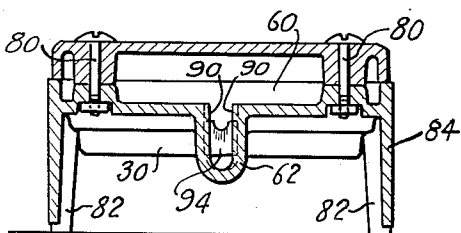


FIG. 6.



INVENTOR.
Roy R. Fisher

BY

Barnes, Kissel, Laughlin & Kirsch

ATTORNEYS

UNITED STATES PATENT OFFICE

2,576,110

ELECTRIC VAPORIZER

Roy R. Fisher, Paris, Ky., assignor to Electric
Steam Radiator Corporation, Paris, Ky., a cor-
poration of Michigan

Application March 22, 1949, Serial No. 82,833

6 Claims. (Cl. 219-40)

1

2

This invention relates to an electric vaporizer and has particularly to do with a steam vaporizer for use in hospitals and homes to relieve congestion due to colds and asthmatic conditions.

Briefly, this invention relates to a base structure having two adjacent wells in the top, one of which forms a water supply well and a support for an inverted bottle and the other of which forms an electrode holder and vaporizer chamber.

It is an object of the invention to provide a relatively inexpensive portable unit which may be plugged into any 120-volt electrical outlet and which will produce steam in quantities sufficient to raise the humidity of a single room and also create a heat sufficient to vaporize medicament such as menthol crystals or other similar materials. Another object is the provision of a vaporizer unit which holds a large supply of water which is fed slowly to spaced electrodes which change the water in steam. This supply of water may be renewed if desired without the necessity for interrupting the operation of the vaporizer. The unit is also designed to accommodate standard Mason jars of pint, quart, or two-quart size. Thus continuous and safe operation is assured without attention. The unit is so designed that when the water supply is exhausted it automatically shuts off.

Other objects and features of the invention, including details of construction and operation, will be found in the following description and claims.

Drawings accompany the specification and the various views thereof may be briefly described as:

Figure 1, a perspective view of the complete assembly showing the water supply bottle and the medicament holder elevated above their positions of rest.

Figure 2, a plan view of the base unit.

Figure 3, a longitudinal vertical section on line 3-3 of Figure 2.

Figure 4, a vertical section of the vaporizing chamber on line 4-4 of Figure 3.

Figure 5, a horizontal section on line 5-5 of Figure 3.

Figure 6, a vertical section showing the connecting structure between the two chambers on line 6-6 of Figure 3.

Reference is made to Patent 2,392,372, issued January 8, 1946, and Patent 2,433,750, issued

December 30, 1947, each of these patents being directed to steam vaporizers and the like.

As shown in Figure 1, a base B has a heating well H and a water supply well W. A vaporizer cup 20 such as described in the first patent above mentioned is adapted to be received by the well H. As shown in Figure 3, the water supply well is dimensioned to receive a screw cap 22 with a rubber seal ring 23 on the end of a Mason jar 24. Within the well H are spaced electrical conductive units which create steam when connected by a body of water. These will be described in detail later. Water supply from the Mason jar 24 feeds to these conductive units through a suitable connecting channel so that operation is continuous until the water supply is exhausted.

The base B is composed of a bottom unit 26 and a top unit 28. At the right-hand side of part 26, as viewed in Figure 3, is a heating chamber 30 in which are positioned, spaced and parallel electrical conductive blocks 32, each resting on an insulative disc 34 which in turn rests on a sealing washer 36. The bottom 38 of the chamber 30, together with the washer 36, the disc 34, and the blocks 32 is transfixed by two bolts 40 held in place by nuts 42. Suitable electrical terminals 44 (Figure 4) are also fastened by the nuts 42. The bolts 40 are of electrical conducting material which transmits current from a lead cord 46 to the blocks 32. Above the heating chamber 30 is the double-walled vaporizer well H, the bottom 50 of which is perforated to permit the escape of steam from the heating chamber. The sides of the well H terminate at a top rim 52 and then lead downwardly in walls 54 to the outer edge of the bottom member 26.

At the left end of the bottom unit 26, as viewed in Figure 3, is a supply chamber 60 for incoming water. The bottom of this supply chamber is spaced upwardly from the bottom of the heating chamber 30 but is connected thereto by a downwardly sloping channel 62 shown in section in Figure 6. Above the supply well 60, the top portion of the base 28 is formed at 64 to provide a cylindrical recess to receive the screw cap 22 at the end of an inverted bottle 24. The screw cap has a hole 66 at a center portion 68 which is raised from the rest of the cap and also a hole 70 adjacent the rim of the cap. The hole 70 serves as an inlet for air so that the water supply device acts in much the same manner as the well-known chicken watering trough. That is, a limited quantity of water will feed down as it is exhausted in the supply chamber 60. Suitable venting grooves 72 (Figure 5) are provided around

3

the cylindrical opening 64 to admit air to the chamber 60. This same ventilation may be accomplished by alternate grooves or ridges on the sides of the cap 22.

The parts 26 and 28 are held together by screws 80 between the two wells H and W. Suitable legs 82 support the assembly so that the outside skirt 84 of the bottom 26 is off the supporting surface to permit a cooling ventilation.

A feature of the invention not yet described relates to a water dam or gate in the feed channel to regulate flow through the channel and restrict the cross-sectional area of water connecting the heating chamber to the supply chamber.

In channel 62 are spaced ridges 90 disposed on opposite sides of the channel to form opposed grooves 92. Lying in the grooves is a piece of fiber board 94 serving much the same function as a sluice gate. The fiber-board 94 is formed of insulative material. It serves to block free flow through the channel, thus stabilizing the water levels in the two chambers. This gate 94 also restricts the cross-sectional area of the body of water connecting the two chambers and thereby eliminates any danger of the passage of an injurious amount of current through the water in the channel to the supply side.

It will be noted that the gate 94 is open at the bottom and that water also could flow over the top after reaching a certain level.

The base 26 being formed as a single molding of plastic heat and electrical insulative material is a water-tight vessel in itself. Consequently, there are no water-sealing problems in connection with the construction except at the bolts 40 where the washer 36 serves as an adequate seal. An insulative disc 100 protects bolts 40 and nuts 42 from contact.

In the operation, when the lead wire 46 is plugged into an electrical outlet so that a difference in potential is created between the resistance units 32, water in the well 30 creates a resistance between the two units and is changed into steam by the passage of current between the electrodes 32. This steam will rise through the perforated bottom 50 and be dispelled from the steam chamber or well H. The water supply in the chamber 30 continues to be replenished through channel 62 from the supply chamber 60 and the jar 24. According to well-known principles, atmospheric pressure keeps the water in the jar from going over a certain level in the bottom unit 26.

When the water supply is completely exhausted, the heating will cease even though the unit remains connected to the electrical supply.

It will be seen that various sized jars 24 could be used; and the unit could be further used either with or without the container 20, depending on whether or not it is desired to mix the steam with curative vapors arising from heated medicine in the cup 20.

What I claim is:

1. A steam vaporizer unit comprising a molded base member having an electrode well at one end and a supply well at the other end, means to

4

support said base member in spaced relation to a horizontal surface, a molded top member comprising a top surface provided with a formed edge to contact said base member and having a cylindrical recess positioned to lie above said supply well to support an inverted capped bottle, and means forming a heating chamber comprising a circular curved wall rising from said top surface at the other end of the top member formed integrally therewith, said wall terminating upwardly at the margins of a circular recess and depending downwardly from said margins to a point below the formed edge of the top member to form a double walled well, apertured supporting means closing the well at the bottom and lying above said electrode well in the base.

2. A steam vaporizer unit as defined in claim 1 in which attaching means is provided to engage said base and said top member, said means being engageable at an off-center position to prevent erroneous assembly of said parts.

3. A steam vaporizer unit as defined in claim 1 in which said bottle supporting cylindrical recess has a defining wall depending from said top surface to a point below said formed edge and within said supply well of said base.

4. A steam vaporizer unit comprising a molded base member having an electrode well at one end and a supply well at the other end, and an upstanding rim, the top edges of which lie in a single plane, a molded top member comprising a top wall and a formed edge projecting downward to provide a depending rim, the lower edges of which are in a single plane and conform to the rim of the base, depending wall means forming a cylindrical recess in said top member at one end extending to a level below said formed edge to support a capped inverted bottle, and means forming a heating chamber comprising a circular curved wall rising from said top surface at the other end of the top member formed integrally therewith, said wall rising to form a circular opening and depending downward from the margins of said opening to a point below the formed edge of the top member to form a double walled well, and means at the bottom of said well to support an article being heated and to pass steam from said well.

5. A vaporizer unit as defined in claim 4 in which vertical formations in the wall of said cylindrical recess permit passage of atmosphere to said supply well.

6. A vaporizing unit as defined in claim 4 in which the inner edges of the depending rim lie inside the inner edges of the upstanding rim.

ROY R. FISHER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,520,050	Blount	Dec. 23, 1924
2,049,899	Edelman	Aug. 4, 1936
2,379,034	Pargman	June 26, 1945