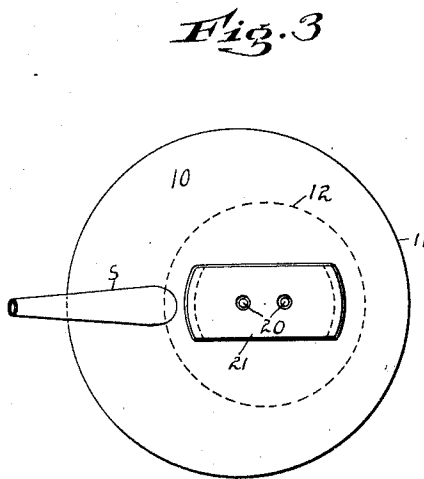
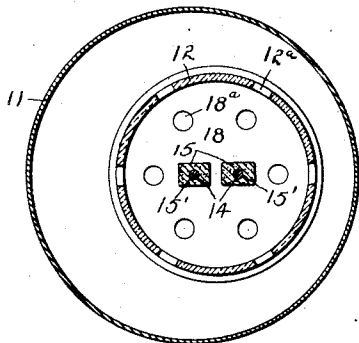
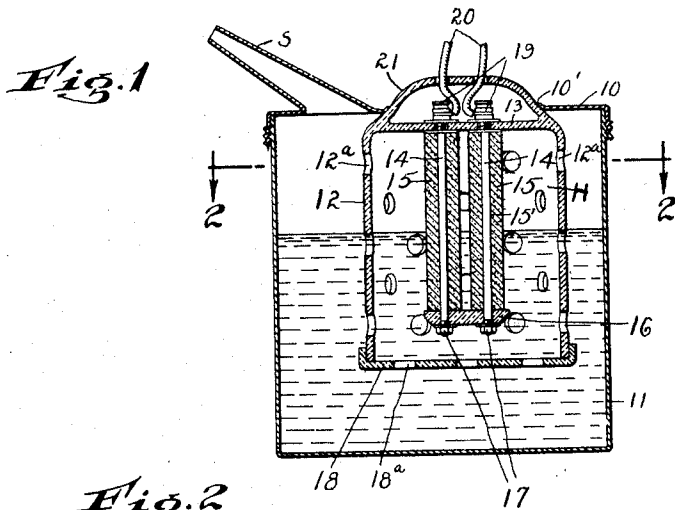


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N. LAWNER
ELECTRIC VAPORIZER
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ELECTRIC VAPORIZER

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The present invention relates to electric vaporizers in which an electric heater is employed.

The heater is based on the principle of heating an electrically conductive liquid such as, water, benzoin or the like by submerging therein electrodes through which an electric current is passed.

The primary object of the present invention is to provide a heater of this type that can effectively be used as a vaporizer for the treatment of diseases such as asthma, bronchial catarrhs or the like.

Another object is to construct a device which will be extremely simple and inexpensive to be within the most modest means.

A further object is to provide means which will render the heater safe against injury to the user and at the same time protect the heating elements from damage or disarrangement.

Still another object is to provide a device which is compactly constructed and may be conveniently carried for use while travelling.

Yet another object is to provide a device in which no stand for the vaporizer is necessary and in which the user is protected from injury upon removal of the heater from the receptacle while the electric current is on.

With the above and other objects in view, my invention consists in the novel construction, combination and arrangement of elements as will hereinafter be described, shown and defined in the appended claims.

In the accompanying drawing which forms part of this specification and in which similar reference characters denote corresponding parts:—

Fig. 1 is a sectional elevation of my new vaporizer;

Fig. 2 is a full section along line 2—2 of Fig. 1 seen in the direction of the arrows; and Fig. 3 is a top plan view of my device.

In the construction shown in Figs. 1-3 inclusive my heater H is suspended from the lid 10 which is threadedly or otherwise removably applied to the jar or vessel 11 adapted to contain the liquid to be vaporized. The said lid is provided with a spout S.

The electric heating unit consists of a cas-

ing 12 of porcelain or other insulating material having perforations 12^a throughout its circumference. Mounted in the top 13 of said casing are at least two electric conductors such as metal rods 14 which may be threaded at their lower ends. The said conductors extend parallel to one another and are spaced apart a predetermined distance and mounted on each rod 14 is a block or bar of carbon 15 which constitute electrodes. These electrodes are longitudinally perforated as at 15' to fit snugly on said rods and are held in position by a yoke or cross piece 16 mounted on said rods and bearing against the lower ends of said cartons. Nuts 17 which screw onto the threaded ends of rods 14 serve to tighten said carbons on said rods. The yoke may be made of porcelain or other insulating material and serves not only to support the carbons, but also to hold the latter rigidly at the proper spacing apart.

The blocks preferably have polygonical cross sections having at least two uneven sides. Thereby by rotating the said blocks in their respective rods, the gap between said blocks may be varied. The adjustability of the gap is vitally important because the water in some localities contains too much and in others too little minerals. If the water is too rich in minerals, a short circuit will occur between electrodes and if it contains too little minerals the passage of current will be too small for effective operation of the device. In addition the voltage used with lighting systems varies in different localities. Therefore, it is seen how important it is to make the gap variable. By using carbon blocks having uneven sides the variation in the gap is readily accomplished by loosening the nuts 17 and rotating said blocks on their respective rods.

The casing 12 is of such dimensions as to completely enclose the electrodes so that the electrodes may not be injured and also so that the user may not touch the latter and receive a shock or burns. The said casing may have the shape of an inverted cup or bell. The perforations 12^a serve as passages permitting the circulation of liquid through the bell and between electrodes. A remov-

able bottom 18 adapted to be screwed threadedly or otherwise mounted to said casing 12 is provided and perforations 18^a therein permit circulation of liquid through the bottom.

5 This insures complete protection of the user from shock when the heater is removed from the receptacle.

The upper ends of the conductor rods 14, upon which the carbons are mounted, project
10 through the top 13 of the casing and are formed with terminals 19 to which the lead-in wires 20 are adapted to be attached in any suitable manner. The said wires may be enveloped by water proof and insulation
15 covering (not shown).

To facilitate the handling and mounting of the heater and also to shield the terminals 19 to prevent their coming in contact with the user's hands, the casing may be formed
20 integrally with a head piece or grip 21 extending diametrically over the top thereof and completely enclosing the terminals 19. Suitable outlet openings 22 may be formed in said grip for said lead-in wires. The said
25 grip may be adapted to be suitably mounted through an opening 10' in the lid 10 and frictionally or otherwise suitably retained therein. In order to completely enclose the terminals 19 and yet permit the mounting
30 of the electrodes in the top casing and their connections to the terminals, side walls (not shown) for said head piece may be used and either both or one of them may be cemented or otherwise set in place after the aforesaid
35 operation is completed.

In operation the receptacle is partially filled with the vaporizing liquid and the lid put on tightly. Thereafter when the electric current is turned on the flow thereof heats
40 the liquid causing it to vaporize and emerge through the spout and the vapor may be inhaled by the user.

My device may be modified in many ways without departing from the spirit of my invention and I do not wish to be limited to the details shown and described.

What I claim is:—

1. In a vaporizer, the combination with a receptacle having a removable lid formed
50 with a spout, of an electric heater including a perforated casing, electrodes mounted in said casing with terminals projecting upwardly and through the top of said casing, said casing having a head piece over its top
55 adapted to enclose said terminals and said lid having a recess through which said head piece projects to the external side of said lid, said head piece constituting the support for said casing from said lid.

60 2. In an electric vaporizer, the combination with a receptacle of a removable lid therefor, a spout projecting from said lid and an electric heating unit supported from said lid, said unit comprising a perforated
65 casing of insulating material, two parallelly

extending electrodes supported in said casing and completely enclosed thereby, the perforations in said casing permitting access of liquid to said electrodes, a hollow head piece on the top of said casing, electric terminals for
70 said electrodes projecting into said head piece and completely enclosed therein to prevent contact therewith by the user, said head piece being mounted in and frictionally retained by said lid and electrical connection
75 to said terminals projecting through the wall of said head piece.

3. In an electric vaporizer, the combination with a receptacle of a removable lid therefor, a spout projecting from said lid
80 and an electric heating unit supported from said lid, said unit comprising a perforated casing of insulating material having a removable bottom, two parallelly extending electrodes supported in said casing and
85 completely enclosed thereby, the perforations in said casing permitting access of liquid to said electrodes, a hollow head piece on the top of said casing, electric terminals for said electrodes projecting into said head
90 piece and completely enclosed therein to prevent contact therewith by the user, said lid being provided with a recess through which said head piece projects to the external side of said lid, said head piece constituting the
95 support for said casing from said lid, and electrical connection to said terminals extending through the wall of said head piece.

In testimony whereof I affix my signature.
NICHOLAS LAWNER.

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