

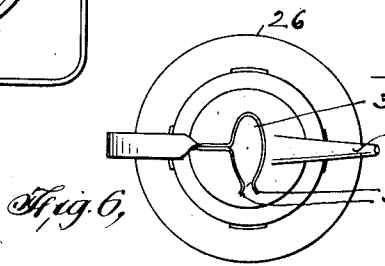
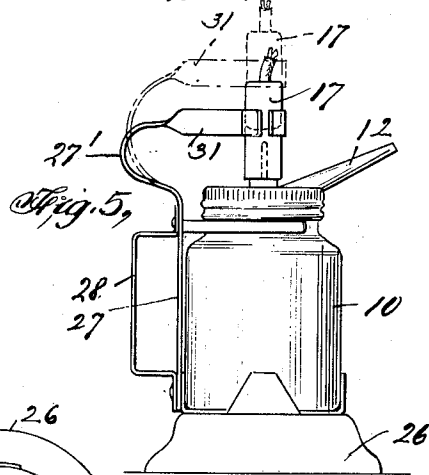
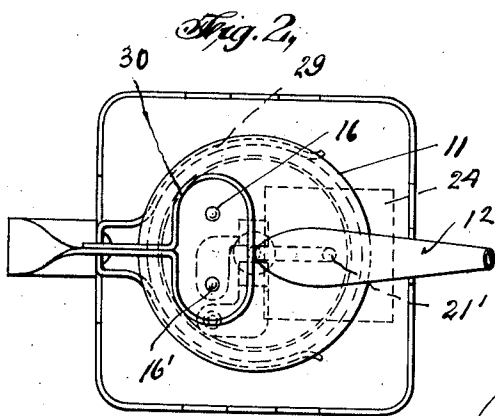
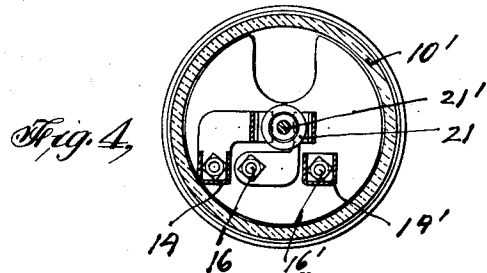
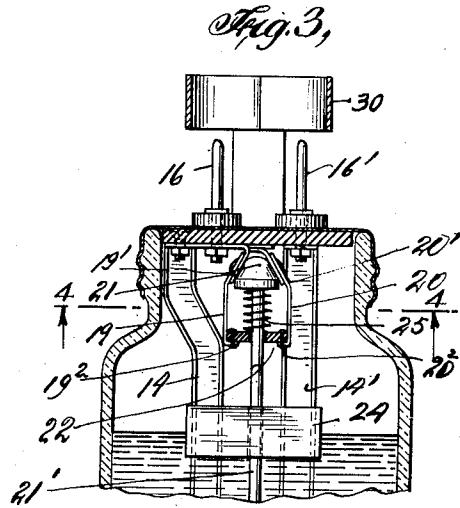
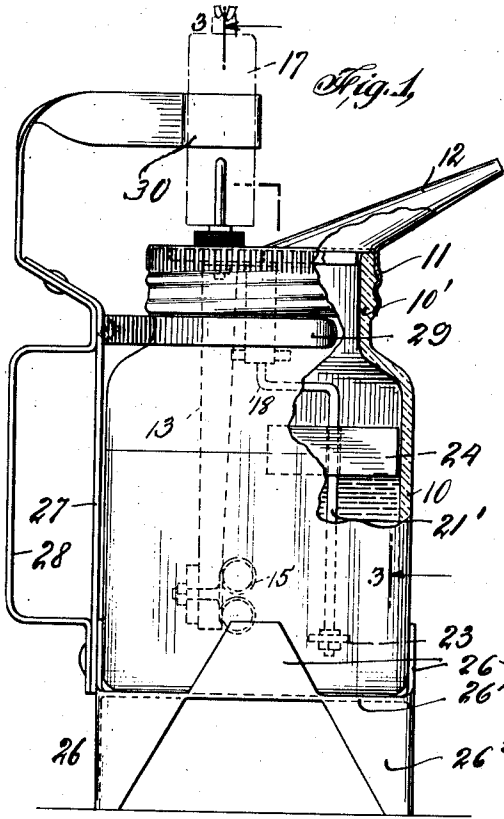
April 19, 1927.

1,625,034

N. LAWNER

VAPORIZER

Filed June 8, 1926



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UNITED STATES PATENT OFFICE.

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VAPORIZER.

Application filed June 8, 1926. Serial No. 114,448.

This invention relates to vaporizers of a kind which employs an electric heater suitable for heating liquids in small receptacles such as jars and the like.

5 The vaporizer is principally intended for use for treatment of bronchial diseases, such as asthma, etc., employing benzoin or similar liquids of which the vapors have curative properties. It has been found that with
10 hitherto known electric vaporizers of the kind referred to there is the disadvantage that when the liquid in the receptacle is entirely evaporated and the electric current is not shut off in time, as for instance, when
15 used by the patient during the night, there is not only waste of electricity but the danger that the receptacle when made of glass will crack.

20 One object of this invention is, therefore, to provide means whereby the electric current will be automatically shut off when the liquid is entirely evaporated or sinks below a certain level.

25 Another object of this invention is to provide suitable means for supporting the receptacle in steady position when in use and also to prevent the removal of the cover thereof while the current is on so as to avoid injury to the hands of the user.

30 With these and other objects in view, our invention consists in the construction, combination and arrangement of parts as will be hereinafter fully described and defined in the appended claims.

35 My invention is illustrated in the accompanying drawing in which similar reference characters denote corresponding parts and in which—

40 Fig. 1 is a side elevation of the vaporizer and its support, a part of the receptacle being broken away to show some details of construction;

Fig. 2 is a top plan view thereof;

Fig. 3 is a section on line 3—3 of Fig. 1;

45 Fig. 4 is a cross section on line 4—4 of Fig. 3;

Fig. 5 is a reduced side elevation of a slightly modified construction; and

Fig. 6 is a top plan view thereof.

50 In the drawing 10 denotes a glass jar or other suitable receptacle to contain benzoin or other suitable liquid to be evaporated. The jar is formed with a threaded neck 10¹ on which is screwed a cover 11 of

sheet metal or the like. This cover is provided with a nozzle 12 and has also fixed thereto a suitable electric heater 13 adapted to project downwardly into the jar and to be submerged in the liquid to be evaporated. The heater may be of any of the well known
60 types. In the present example the same consists of two electric bar shaped vertical conductors 14, 14¹, suitably fixed and insulated from the inner face of the cover, and each
65 carrying at its lower end a carbon 15, the two carbons constituting the positive and negative carbons or heating resistances which when the current is on produce the heat necessary to evaporate the liquid. This
70 heater is also well known in the art and a further detailed description thereof is therefore unnecessary.

The terminals of the conductors are formed by prongs 16, 16¹, which are fixed to the cover and adapted to project upwardly therefrom to receive the usual electric
75 plug 17. One of the terminals 16¹ is directly connected to the corresponding conductor 14¹ as seen in Figs. 3 and 4. The other terminal 16 is connected to the corresponding conductor 14 through an automati-
80 cally controlled make and break mechanism 18. In the present example this mechanism comprises a pair of oppositely located contact members 19, 20, and a float controlled
85 contact member 21, the contact member 20 being connected to the terminal 16. The members 19, 20, have upwardly converging portions 19¹, 20¹, and member 21 is cone-shaped so as to fit between and be capable of
90 making effective contact with said converging portions 19¹, 20¹, of the members 19 and 20. The lower ends 19², 20², are insulated from another by a non-conducting centrally
95 perforated disk 22. The member 21 is provided with a central extension in form of a rod 21¹ which is adapted to project vertically downward through the receptacle and when
100 the cone 21 is in operative position, to terminate near the bottom of the receptacle or at least below the lower ends of the heating elements. At this lower end it is provided with a shoulder or disk shaped member 23. Freely slidable on the rod 21¹ is a float
105 24, which when sinking down to the level of the disk 23 during the evaporation of the liquid will by its weight pull the member 21 out of contact with the members 19 and

20 and thereby break the circuit. A very light spring 25 mounted around the upper part of the rod and acting against the cone 21 will tend to return said member into operative position.

It will be clear that while there is sufficient liquid in the receptacle and the plug 17 is in engagement with the terminals 16, 16¹, the heater will operate. When on the evaporation of the liquid the float reaches the shoulder 23 it will pull the cone 21 out of contact with the member 19 and 20 and break the electric circuit.

26 denotes a support for the receptacle to keep the latter in steady position when in use. This support comprises a base 26¹ formed with legs 26² and gripping members 26³ to grip the lower part of the jar. Projecting from and fixed to one side of the base is a vertical post 27 formed with a handle 28. From an upper portion of the post 27 projects horizontally a split resilient hoop-shaped clamping arm 29 adapted to embrace the neck of the receptacle when resting on the base 26.

The upper end of the post is extended and formed with a horizontally extending looped member 30 which is adapted to embrace the electric plug when the latter engages the terminals 19, 20. This engagement of the plug prevents the unscrewing of the cover 11 while the plug is in position of use to avoid injury to the user.

According to the construction shown in Figs. 5 and 6 of the loop 31 is not rigid but carried by or formed on a bendable arm or extension 27¹ of the post 27. This loop is

adapted to tightly engage around the plug and need not be disengaged therefrom. When it is desired to shut off the current the loop which may be formed with lateral grasps 31¹ is simply forced upwardly into the dotted line position shown in Fig. 5 whereby the plug 17 is disengaged from the terminal but remains supported in the loop away from the terminals. The loop 31 thus also serves as a support for the plug when in operative position.

With a support of the above described construction the vaporizer can be conveniently moved from place to place.

What I claim is:—

1. An electric vaporizer comprising a receptacle, a removable lid therefor, an electric heater suspended from said lid and having outwardly projecting terminals for the engagement of an electric plug and means engaging said receptacle and said plug to prevent the removal of said lid while the plug is in engagement with said terminals.

2. An electric vaporizer comprising a receptacle, a removable lid therefor, an electric heater suspended from said lid and adapted to be submerged in the contents of said receptacle, said lid having outwardly projecting terminals for the engagement of an electric plug and means engaging said receptacle and formed with a resilient extension adapted to engage said plug to prevent the removal of the lid while said plug engages said terminals.

In testimony whereof I affix my signature.
NICHOLAS LAWNER.