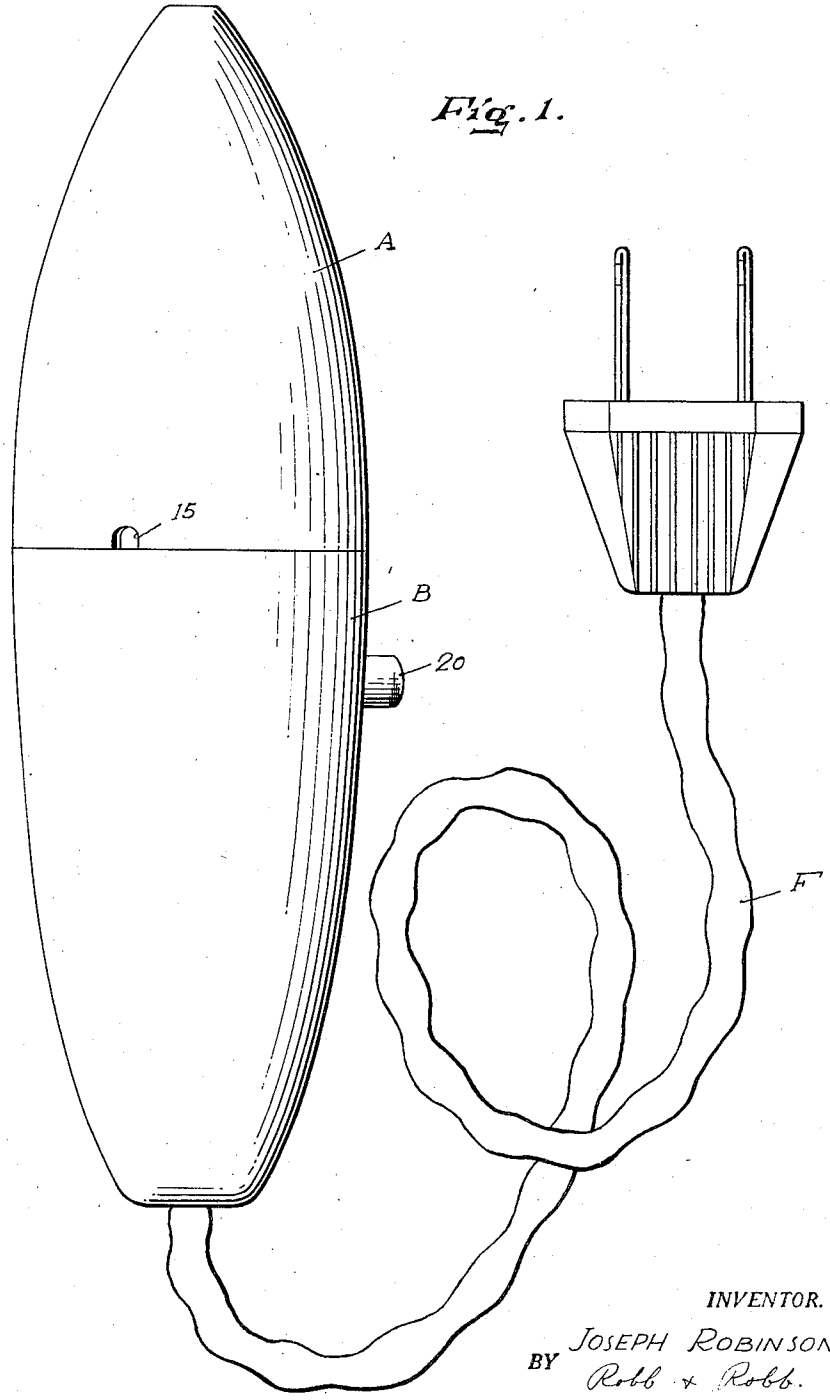
Feb. 4, 1941. J. ROBINSON 2,230,265

ELECTRICAL VAPORIZER

Filed July 21, 1938 3 Sheets-Sheet 1

Fig. 1.



INVENTOR.

BY JOSEPH ROBINSON,
Robb & Robb.
ATTORNEYS.

Feb. 4, 1941. J. ROBINSON 2,230,265

ELECTRICAL VAPORIZER

Filed July 21, 1938 3 Sheets-Sheet 2

Fig. 2.

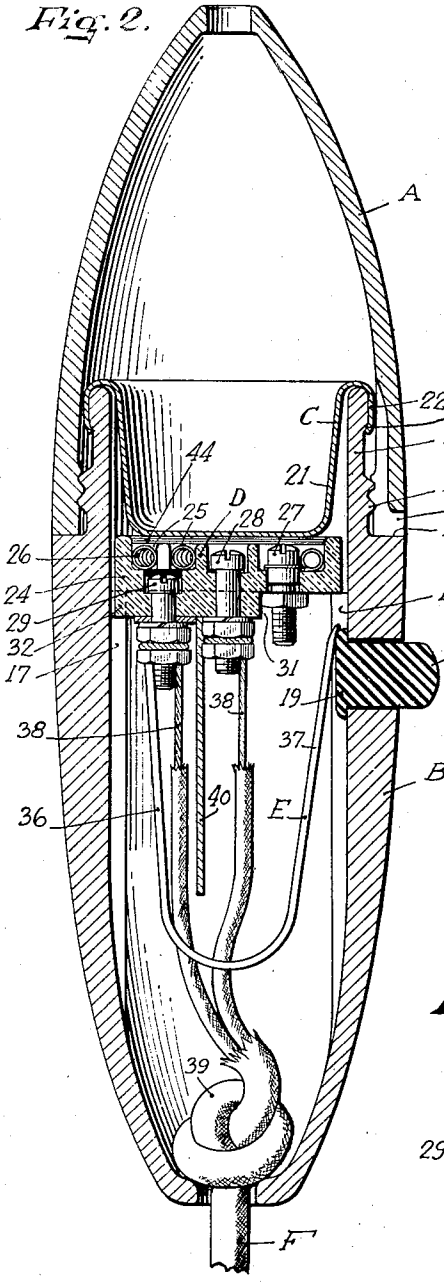


Fig. 3.

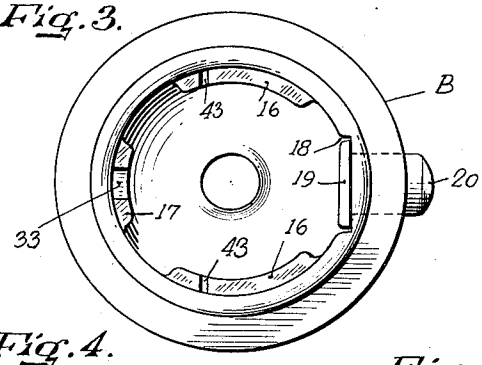


Fig. 4.

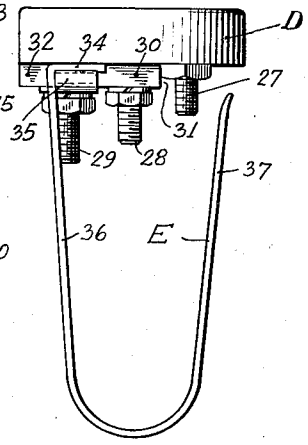


Fig. 5.

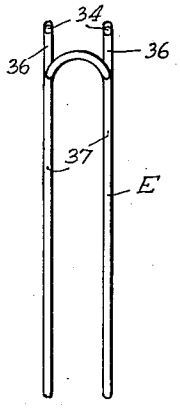


Fig. 7.

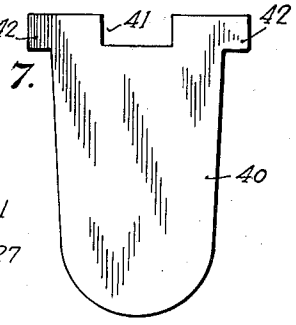
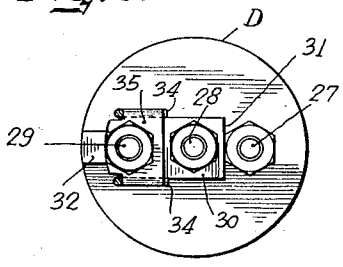


Fig. 6.



INVENTOR.
JOSEPH ROBINSON,
BY Robb & Robb.
ATTORNEYS.

Feb. 4, 1941. J. ROBINSON 2,230,265

ELECTRICAL VAPORIZER

Filed July 21, 1938 3 Sheets-Sheet 3

Fig. 8.

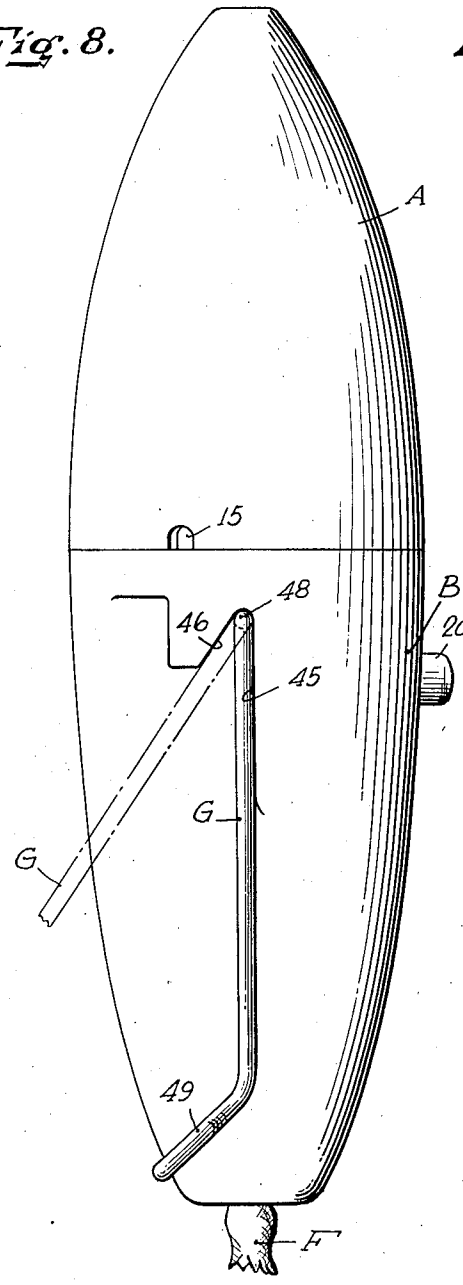
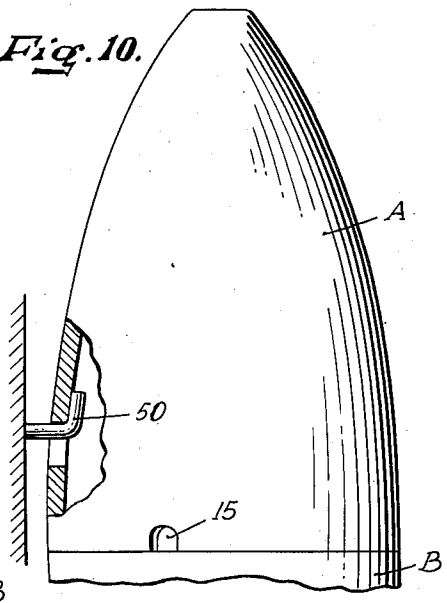


Fig. 10.



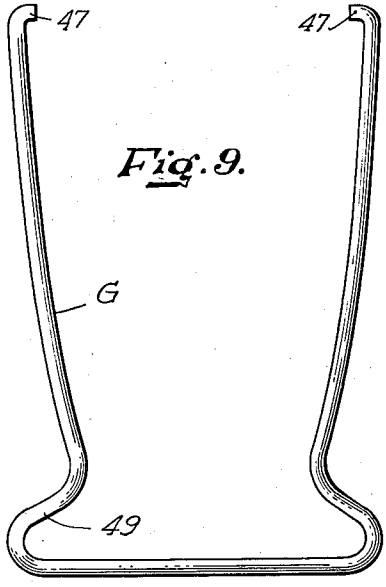


Fig. 9.

INVENTOR.
JOSEPH ROBINSON,
BY Robb & Robb.
ATTORNEYS.

Patented Feb. 4, 1941 2,230,265

UNITED STATES PATENT OFFICE

2,230,265

ELECTRICAL VAPORIZER

Joseph Robinson, New York, N. Y.

Application July 21, 1938, Serial No. 220,481

4 Claims. (Cl. 219—38)

This invention relates to electrical vaporizers of the hand type for generating hot medicated vapors for treating head colds, catarrh, sinus infection, and other afflictions of the upper respiratory organs. Among the objects are to improve the efficiency and appearance of previous types of these instruments by providing an attractive streamline casing for the mechanical parts; by removably connecting the cap or nasal member to the handle or housing of the instrument against accidental dislodgement therefrom; by making the heater and switch assembly a simple inexpensive unit; by effectively providing against seepage of the vapors into the interior of the handle of the instrument; by simplifying the construction of the medicament container, and by providing a new location for the heater whereby the liquid tight connection between the container and the handle will not be burned or loosened by heat from the heater. Simple means for supporting the vaporizer in a generally upright position are also provided.

In the accompanying drawings Figure 1 is a side elevation of my improvement.

Figure 2 is a vertical section therethrough;

Figure 3 is a top view of the handle B with the mechanical parts removed except the switch button 20;

Figure 4 is a side elevation of my improved heater and switch assembly;

Figure 5 is a front view in elevation of the contact blade;

Figure 6 is a bottom view of the heater D showing the method of attaching the blade thereto;

Figure 7 is a front view in elevation of the separator strip 40;

Figure 8 is a side elevation similar to Figure 1 showing the handle or housing B modified to receive a pivoted detachable stand G;

Figure 9 is a front elevation of the stand shown in Figure 8, and

Figure 10 is a side elevation of the cap A with a part thereof broken away, showing the cap modified slightly to receive a suitable wall hook or other support on which the vaporizer may be hung or supported.

The hollow cap or cover A and the elongated hollow handle or housing B may be made of any suitable material, but are preferably molded of a plastic such as Bakelite or Plaskon. The outline of the two parts is such that when assembled they produce a casing or shell having the graceful streamlines shown in Figure 1. The upper end of the handle is provided with an extension or neck 11 threaded at 12 to receive the threads of the cap A. The bottom of the cap fits tightly against the stop or shoulder 14 on the handle when the cap is screwed down. The arrangement provides means on the exterior of the neck 11, at or near the bottom of the neck, against which the insulating bottom portion of the cover A when in place has tight wedging engagement whereby the cover is held firmly on the handle and wobbling thereon and accidental dislodgement therefrom are prevented. On inhalation currents of air are admitted to the interior or chamber of the cap by vents 15 which extend inwardly through the bottom of the cap and thence turn upwardly, terminating at approximately the top of the container C.

To support the heater D horizontally in the handle with its top substantially in the plane of the shoulder 14, a plurality of suitable segmental seats 16—17, Figure 3, are provided on the interior of the handle. These seats are spaced so as to clear the vertical way 18 arranged for the flat head 19 of the switch button 20.

The container C is made of any desired material such an aluminum and is preferably, though not necessarily, of one piece construction turned back on itself to form the relatively deep medicament receiving cup 21 and the relatively short depending skirt 22 spaced laterally outward from the walls of the cup. The container is mounted and positioned on the upper portion of the neck 11 by pressing the skirt tightly on the neck and by then crimping or drawing the bottom edge of the skirt over a shoulder 23 formed on the neck to so receive it. The connection thus formed is liquid tight, and inasmuch as the heater D is not set on top of the neck, but is positioned a substantial distance below it where the handle or housing B is thickest, the exterior of the handle will remain comfortably cool, and the straight vertical walls of the neck which receive the skirt 22 will not be burned nor will they be heated to an extent causing any loosening of the connection between these parts.

The heater D includes a disc shaped base or coil support 24 in the top of which spiral like grooves 25 are formed to receive the resistance coil 26. One end of the coil is anchored under the head of the outer screw 27 and the other end is secured under the head of the center screw 28, as shown best in Figures 2 and 6. A third screw 29 cuts through one of the walls separating the grooves and, when in place, its head

is preferably covered with a suitable cement to prevent the coil 26 contacting it. The base 24 is reinforced by a heavy lug 30, Figures 2 and 6, which extends from one edge of the base inwardly beyond the center screw 28, its inner end 31 forming an abutment for the nut of the screw 27 and effectively locking the nut against rotation. The outer end of the lug is reduced in width for a short distance to form a tongue 32 to mate with a complementary groove or notch 33, Figure 3, in section 17 of the heater seat to prevent the heater from turning in the handle or housing B and moving the contact blade E of the switch out of alignment with the switch button 20. The blade E is preferably U-shaped and made of spring wire. At one end it terminates in inwardly turned fingers 34, Figures 4 and 6, which span the lug 30 on the bottom of the heater and which are rigidly clamped to the heater by the screw 29 and by a spanner or wedge 35 which straddles the lug and is placed under the nut of this screw, shown best in Figures 4 and 6. The rear uprights 36 of the blade rest against the adjacent interior walls of the handle or housing and are supported thereby against lateral movement when the switch button 20 is pressed. The inner uprights 37 of the blade project upwardly beyond the bottom of the screw 27, against which the blade is adapted to be pressed to close the electric circuit, and bear against and exert pressure on the switch button to hold the latter firmly at the limit of its outward movement. One of the strands 38 of the electric cord F connects to the outer screw 29 and the other strand connects to the center screw 28, both strands being embraced by the arms of the blade E, Figure 2. The cord is knotted at 39 to relieve the strands of pulling strains in service. To permanently prevent contact between these strands I separate them with a fibre or other insulator strip 40 which is notched at 41 to closely span the lug 30 of the heater D, and is provided with projections 42 that fit in complementary grooves 43 molded in sections 16 of the heater seat in the handle B. It will be observed from Figure 2 that the heater is locked to its seat by the container C when the latter is secured to the neck 11 of the base in the manner hereinbefore described, the bottom of the cup 21 of the container being seated on a mica disc 44 which separates and insulates it from the resistance coil 26.

The modification shown in Figures 8 to 10 provide means for supporting the vaporizer vertically or generally vertical. One arrangement involves reducing the wall thickness of the base B from the outside to form the stops 45 and 46 against which the removably pivoted wire stand G bears when folded, shown in full lines in Figure 8, and when swung out as shown in dotted lines in the same figure. The stand closely spans the base B and is provided at its top with inwardly turned portions 47 which snap into bearings 48 formed in opposite sides of the base, but not extending through its walls, to receive them. The bottom of the stand may be widened as to 49 to more firmly support the vaporizer against lateral tilting. The support shown in Figure 10 is produced by merely forming an opening in one side of the cap A to receive a suitable wall hook, nail, or other support 50. Inasmuch as the cap is threaded to the handle or housing B, the entire vaporizer will be supported by the hook 50 when hung thereon.

What I claim is:

1. An electrical vaporizer of the hand type comprising, in combination, an elongated hollow handle which terminates at its upper end in a vertically extending hollow neck formed integral with the handle, said neck being provided with an exterior shoulder near its upper end, a horizontally disposed rigid seat integral with said handle and arranged on the interior thereof adjacent the bottom of said neck, a heater mounted on said seat and supported thereby in a horizontal position, a cup to contain the substance to be vaporized, said cup being in engagement with said heater and provided with a laterally spaced skirt which extends down over the top of said neck and fits snugly therewith, the lower edge of said skirt being spun or turned over said shoulder to tightly secure said heater to said seat and said cup to said neck with a clamping action, the connection between the cup and said neck being liquid tight whereby any of the contents of said cup which may spill over are prevented from entering said neck and contacting said heater, said heater and said seat being positioned adjacent the bottom of said neck as aforesaid to prevent destruction of the liquid tight connection between the neck and said cup due to burning or searing of said neck by said heater at the point of connection between the cup and said neck, an elongated hollow cover removably set over said neck and extending downwardly along the neck substantially the full length of the latter into engagement with a stop provided to determine the vertical position of the cover on said neck, the upper portion of said cover being reduced in diameter to form a nasal part for guiding the vapors directly to the nasal passage and the lower part of the cover cooperating with said neck to insulate against the heat from said heater, said cover being provided with a vent for admitting air to its interior from a point adjacent the bottom of said neck whereby, on inhalation, the air is caused to travel vertically along said neck and is heated in the journey, an electric cord extending in to said hollow handle, and a switch for connecting the cord into circuit communication with said heater.

2. An electric vaporizer of the class described, comprising in combination, a housing, a disc-shaped heater base mounted on said housing and having on its lower side a transversely extending lug, a resistance coil mounted in ways in the upper side of said heater base, a resilient switch member extending across said lug and positioned thereby and adapted to be anchored thereto and to said heater base, an electric cord including a pair of cables straddled by said switch member, common means for connecting said coil into circuit relation with said switch member and with said cord and for rigidly anchoring said cord and said member to said heater base, a button extending through a wall of said housing into operative engagement with said switch member, an insulator strip separating said cables, said strip being grooved at its top to snugly receive said lug thereby to prevent the strands of said cables working past the strip into engagement causing a short circuit, said strip being provided with portions which fit into grooves in said housing to position and support the strip vertically and laterally, and a projection 32 on said heater base adapted to enter a complementary opening in a wall of said hous-

ing to position said heater base and said switch member therein and with respect to said button, said switch member being carried entirely by said heater base.

3. A vaporizer such as described in claim 1, distinguished further by provision of means pivoted on said handle and carried thereby and adapted to be swung outwardly therefrom to support said vaporizer in an upwardly inclined position.

4. A vaporizer such as described in claim 1, distinguished further by the fact that said stop is externally arranged on said neck adjacent the bottom of the neck and that against said stop the insulating bottom portion of said cover when in place has tight wedging engagement whereby the cover is held firmly on said handle and accidental dislodgement of the cover from the handle, thereby exposing the hot exterior surfaces of said cup, is prevented.

JOSEPH ROBINSON.