Sept. 21, 1948. G. KARP 2,449,853

INHALER

Filed Aug. 5, 1947

Fig. 1

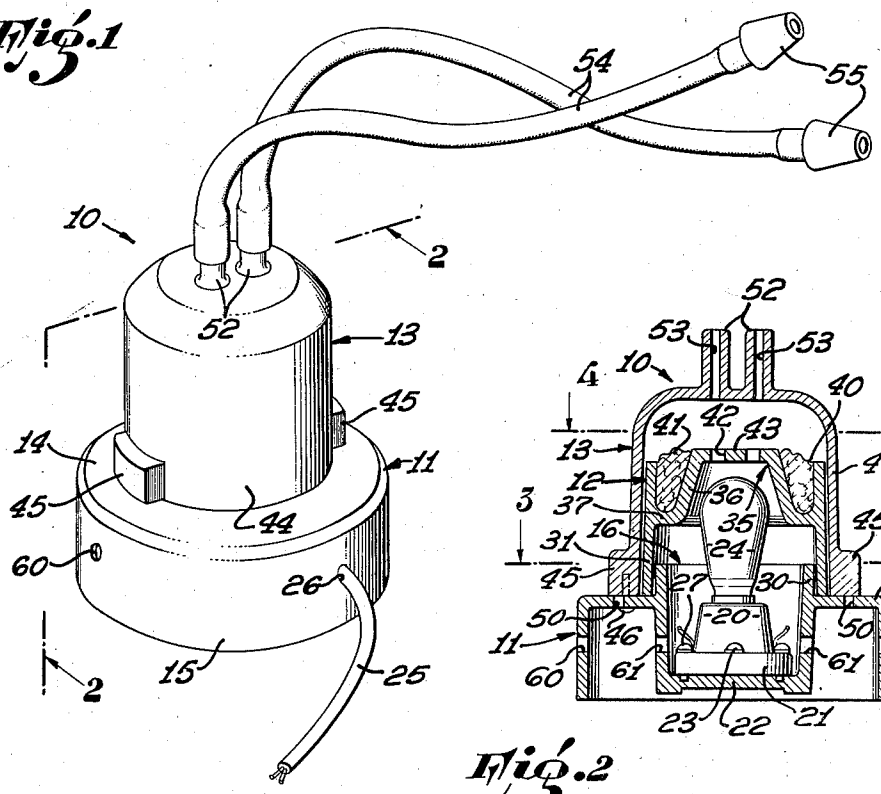
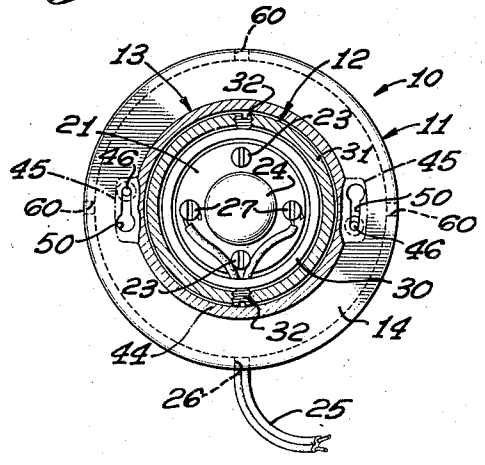


Fig. 2

Fig. 3



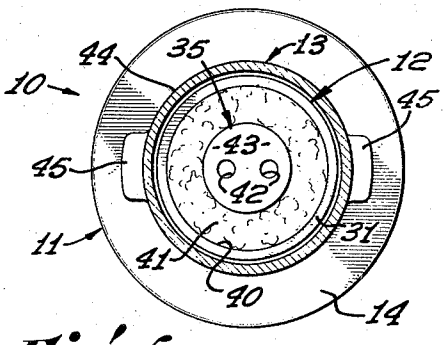


Fig. 4

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4 Claims. (Cl. 128—198)

1

The present invention relates to inhalers of the type used in the therapeutic treatment of bronchial or nasal congestions to obtain symptomatic relief therefor, and the principal object of the invention is to provide a new and improved device for vaporizing a volatile inhalant and conveying the released vapors, mixed with warm air, directly to the nostrils of the patient.

Another object of the invention is to provide an inhaler comprising a base having a socket mounted thereon, with a heating lamp screwed into the socket, and a reservoir member detachably connected to the base and completely enclosing the socket and heating lamp, said reservoir being removable to permit replacement of the lamp, yet at the same time being secured to the base in such a manner as to prevent casual removal therefrom by children who might touch the electrical contacts in the socket and receive electrical burns.

A further object of the invention is to provide an inhaler that is simple to use, quickly and easily disassembled for cleaning and refilling, and highly effective in its mode of operation.

Still another object of the invention is to provide an inhaler that is compact, light in weight, and simple and inexpensive to manufacture.

The foregoing and other objects and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the preferred embodiment thereof, reference being had to the accompanying drawings, in which:

Fig. 1 is a perspective view of an inhaler embodying the principles of the invention;

Fig. 2 is a vertical section of the same, taken along the line 2—2 in Fig. 1;

Fig. 3 is a horizontal sectional view, taken along the line 3—3 in Fig. 2; and

Fig. 4 is a sectional view, taken along the line 4—4 in Fig. 2.

In the drawings, the inhaler of the invention is designated in its entirety by the reference numeral 10, and comprises a base 11, reservoir member 12, and cover 13, which are assembled as shown in the drawings, to form the complete unit. The three elements of the unit may be made of any suitable material, but are preferably injection-molded of heat-resistant plastic such as phenol formaldehyde or the like, which produces an article that is light in weight, of good surface finish, and easily cleaned.

The base 11 is circular in plan form and includes a top 14 with an annular rim 15 extending downwardly from the outer periphery thereof, the

2

bottom edge of said rim being adapted to rest on a table or other structure for support. The center of the base top 14 is depressed to form a circular recess 16, and disposed within this recess is a lamp socket 20 having a base 21 which is secured to the recess bottom 22 by screws 23. A heating lamp 24 is screwed into the socket 20, and its bulb projects above the base top 14, as shown in Fig. 2. A cord 25 is led through a hole 26 in the rim 15 of the base, and through another hole in the side wall of the recess 16, and the two wires thereof are connected by screws 27 to the terminals of the lamp socket 20. Projecting upwardly from the top 14 of the base 11 around the margin of the recess 16 is an annular flange 30 to which the reservoir member 12 is attached.

The reservoir member 12 is cylindrical in shape, with side walls 31 extending down over the flange 30 and bearing on the base top 14. Set screws 32 are threaded into tapped holes in the wall 31 at opposite sides thereof, and bear against the flange 30 to secure the reservoir member 12 to the base 11. The top of the reservoir member 12 is formed by an inverted cup-shaped portion 35, the side walls 36 of which extend down into the space enclosed by the cylindrical side walls 31, rather closely adjacent the top end of the lamp bulb 24, and then turn outwardly at 37 to join the outer wall at a point spaced downwardly from the top edge thereof. The annular channel 40 defined by the side walls 31, 36, and bottom 37, forms a cavity that is adapted to receive cotton 41 or other absorbent material in which the medicinal inhalant is absorbed. The inner wall 36 of the cavity, and the inhalant absorbed in the cotton contained therein, are warmed by radiant heat from the lamp 24 to a temperature of about 205° F., so that the volatile medicinal ingredients of the inhalant are vaporized and mixed with warm air drawn through air holes 42 provided in the flat top portion 43 of the reservoir member.

The reservoir member 12 is completely enclosed within the cover 13, which is dome-shaped, with cylindrical side walls 44 extending down over the side walls 31 of the reservoir member, and bearing on the base top 14. A pair of lugs 45 project outwardly from the lower edge of the wall 44 on opposite sides thereof, and screwed into the bottom ends of the lugs are locking screws 46, the heads of which are spaced out from the ends of the lugs by a distance equal to the thickness of the base top 14. The heads of the screws 46 are adapted to be inserted through the enlarged openings in keyhole slots 50 which are formed in the base top 14 at opposite sides thereof, after which

the cover is turned slightly to bring the screws into the narrow ends of the slots. This type of connection is the well-known bayonet lock, which enables the cover 13 to be connected to or disconnected from the base 11 with only a slight twist of the cover.

Projecting upwardly from the top of the cover 13 are two nipples 52 having central passages 53 communicating with the interior of the cover. Conduit means, in the form of two lengths of rubber tubing 54, are inserted over the nipples 52, and nasals 55 are inserted into the outer ends of the tubing. The nasals 55 are tapered, tubular plugs of plastic which are adapted to be inserted into the nostrils of the patient so as to form a substantially leak-proof connection therewith. This arrangement provides a high concentration of the medicinal vapors in the air inspired through the nostrils, by eliminating dilution with air that has not been drawn through the device. As a result, relief from respiratory congestion is obtained quickly and with the use of relatively small quantities of inhalant, since none of the vapor is lost to the atmosphere until it has served its purpose.

Air is admitted to the interior of the inhaler 10 through passages or air holes 60 in the rim 15, and through other holes 61 in the sides of the socket 16. The air that is drawn into the space enclosed within the socket 16 and reservoir member 12 is heated by the lamp 24 and rises through the air holes 42 into the space enclosed between the cover 13 and reservoir member. Here, the air is mixed with vapor from the medicinal material absorbed in the cotton 41, and is drawn out through the nipples 52, tubing 54, and nasals 55 into the nostrils of the patient.

The advantages of my invention will be evident to those skilled in the art from the foregoing description. The several parts of the inhaler are quickly and easily assembled or disassembled for the purpose of cleaning the parts and refilling the reservoir with inhalant as the latter is used up. The reservoir member 12 can be removed from the base 11 by loosening the set screws 32 and lifting the member off the flange 30, giving access to the lamp socket for replacement of the lamp 24, if necessary. When the reservoir member 12 is locked to the flange 30 by set screws 32, the interior of the socket 16 is inaccessible to children who might otherwise be tempted to touch the terminal connection 25, or to explore the inner socket of the lamp base 20 with resulting injury.

While I have shown and described in considerable detail what I believe to be the preferred form of my invention, it is to be understood that such details are not restrictive, and that various changes may be made in the shape and arrangement of the several parts without departing from the scope of the claims appended hereto.

I claim:

1. An inhaler comprising a base having an annular flange projecting upwardly from the top surface thereof, a lamp socket mounted on said base within said flange, a heating lamp disposed within said socket, a reservoir member attached to said flange and enclosing said lamp, said reservoir member having an annular cavity formed in the top end thereof to receive medicinal material, said cavity encircling the top end of said lamp in close proximity thereto, a cover enclosing said reservoir member, and conduit means communicating with the interior of said cover for conveying the vapor from said material to the nostrils of the patient, said base and said reservoir member having passages formed therein to permit air to be drawn into said reservoir member and thence into the space enclosed by said cover.

2. An inhaler comprising a base having an annular flange projecting upwardly from the top surface thereof, a lamp socket mounted on said base within said flange, a heating lamp disposed within said socket, a reservoir member attached to said flange and enclosing said lamp, said reservoir member having an annular cavity formed in the top end thereof to receive medicinal material, said cavity encircling the top end of said lamp in close proximity thereto, a dome-shaped cover enclosing said reservoir member, a pair of nipples projecting from the top of said cover and having passages communicating with the interior thereof, and a pair of flexible tubes connected to said nipples, said tubes having nasals at the outer ends thereof adapted for insertion into the nostrils of the patient, said base and said reservoir member having passages formed therein to admit air which is warmed by said lamp and mixed with the vapors of said medicinal material before being drawn through said tubes.

3. An inhaler comprising a base having a recess formed in the top surface thereof, a lamp socket mounted in the bottom of said recess, a heating lamp disposed within said socket, an annular flange projecting upwardly from said base around the margins of said recess, a reservoir member enclosing said lamp and having side walls extending down over said flange, means on said reservoir member engageable with said flange to secure said member thereto, the top end of said reservoir member having an annular cavity formed therein to receive medicinal material which is vaporized by the heat of said lamp, a cover enclosing said reservoir member, and conduit means communicating with the interior of said cover for conveying the vapor from said material directly to the nostrils of the patient, said base and said reservoir member having passages formed therein to permit air to be drawn into said recess where it is warmed by said lamp and thence through the top of said reservoir member into the space enclosed by said cover, said air being mixed with the vapors given off by said medicinal material, and thereafter drawn through said conduit means.

4. An inhaler comprising a base having a central circular recess formed in the top surface thereof, a lamp socket mounted in the bottom of said recess, a heating lamp disposed within said socket, an annular flange projecting upwardly from said base around the margins of said recess, a reservoir member enclosing said lamp and having cylindrical side walls extending down over the outside of said flange, a set screw having threaded engagement with said reservoir member and bearing at its inner end against said flange to secure said member thereto, the top end of said reservoir member having an annular cavity formed therein to receive medicinal material which is vaporized by the heat of said lamp, the inside wall of said annular cavity encircling the top end of said lamp in close proximity thereto, a cover enclosing said reservoir member, and conduit means communicating with the interior of said cover for conveying the vapor from said material directly to the nostrils of the patient, said base and said reservoir member having passages formed therein to permit air to be drawn into said recess where it is warmed by said lamp and

thence through the top of said reservoir member into the space enclosed by said cover, said air being mixed with the vapors given off by said medicinal material, and thereafter drawn through said conduit means.

GEORGE KARP.

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