United States Patent [19]

Baum

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[45] **Jan. 16, 1973**

[54] DISPENSER FOR PROVIDING WARM LATHER FOR SHAVING

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[52] **U.S. Cl.**.....**222/146 HA**, 219/214, 219/302, 219/305

[51] **Int. Cl.**.....**B67d 5/62**

[58] **Field of Search**..222/146 HA, 146 HE; 219/214, 219/296, 299, 302, 303, 304, 305

[56] **References Cited**

UNITED STATES PATENTS

3,588,467	6/1971	Grosuean	222/146 HA
3,498,504	3/1970	Wilkins	222/146 HA
3,358,885	12/1967	Flowers	222/146 HA
941,215	11/1909	Wade	219/303

FOREIGN PATENTS OR APPLICATIONS

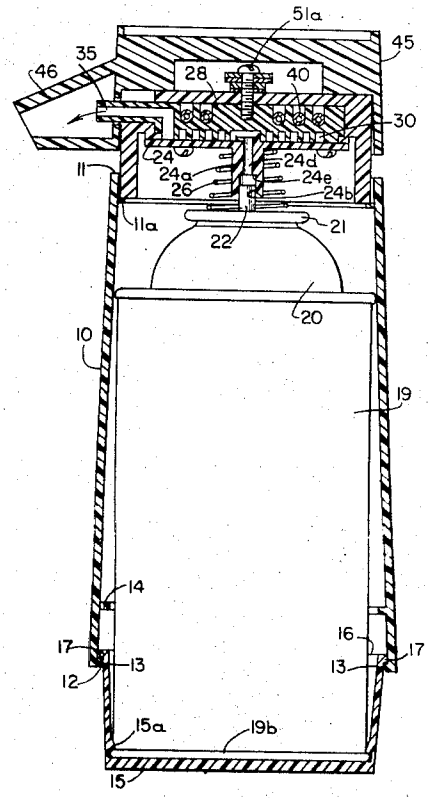
854,403	1/1952	Germany	219/305

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[57] **ABSTRACT**

A dispenser for providing hot lather from a pressurized container includes a housing with a telescoping base so that downward force on the dispenser will release lather from the pressurized container. A heat exchanger block of metal is electrically heated on one side of the heat exchanger block and on the other side thereof there is provided a spiral path for conducting the flow of lather released from the container. The entire construction provides for retention of the pressurized container within the housing and positive limits for the telescopic travel of the base into the housing proper. An electric heating element controlled by a thermostatic switch permits keeping the dispenser warm at all times, ready for instant use. Any fluid or semifluid material apart from lather may be handled.

4 Claims, 9 Drawing Figures



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SHEET 1 OF 2

FIG. 1

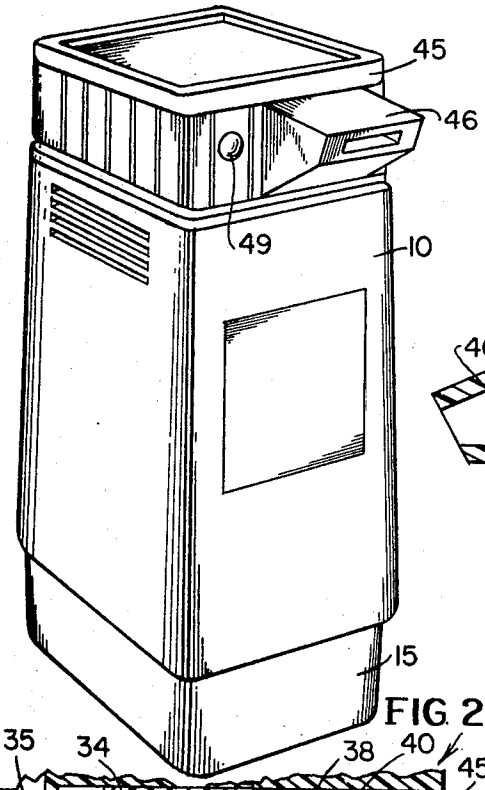


FIG. 2

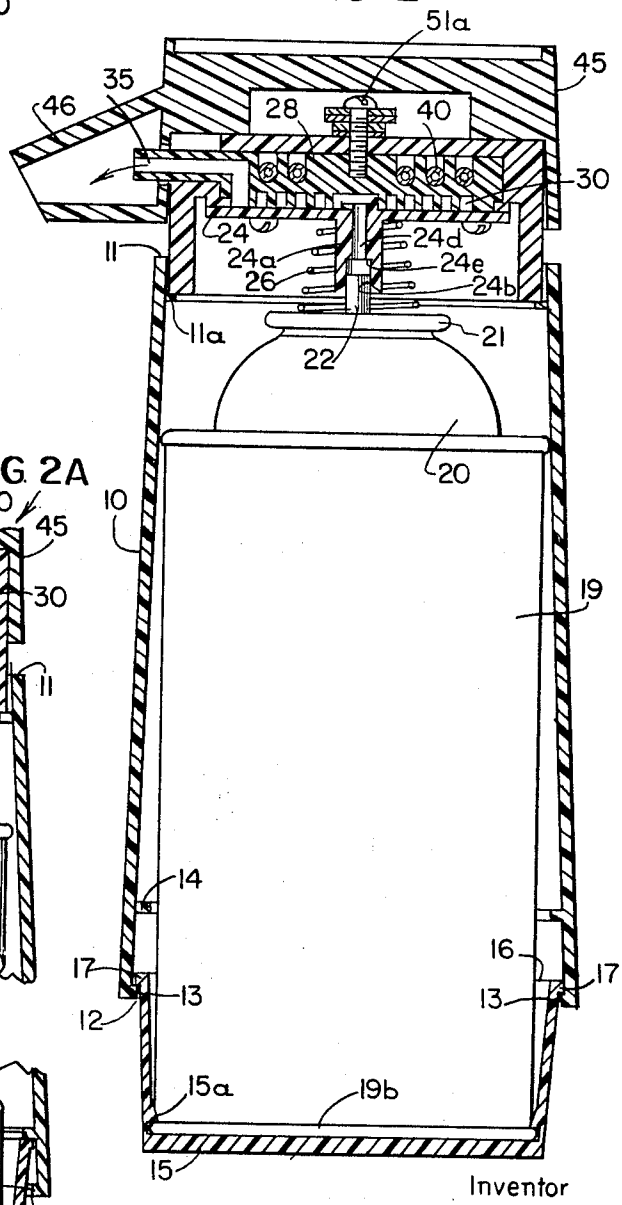
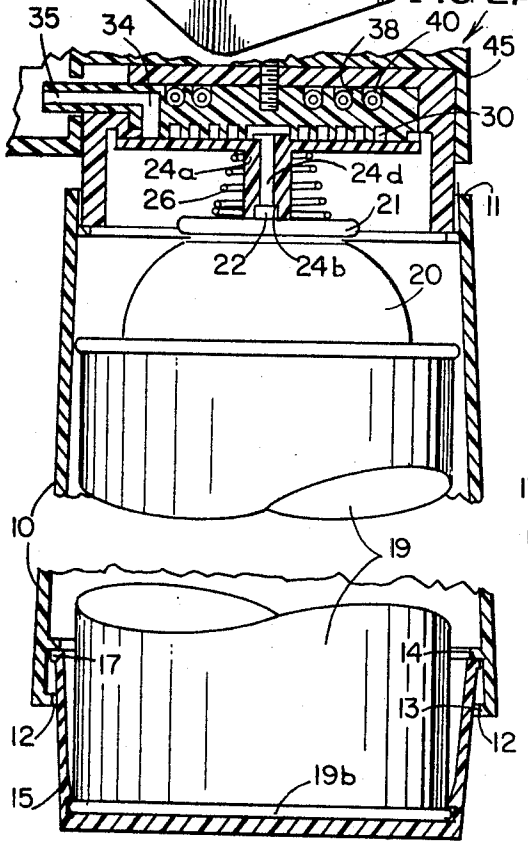


FIG. 2A



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FIG. 3

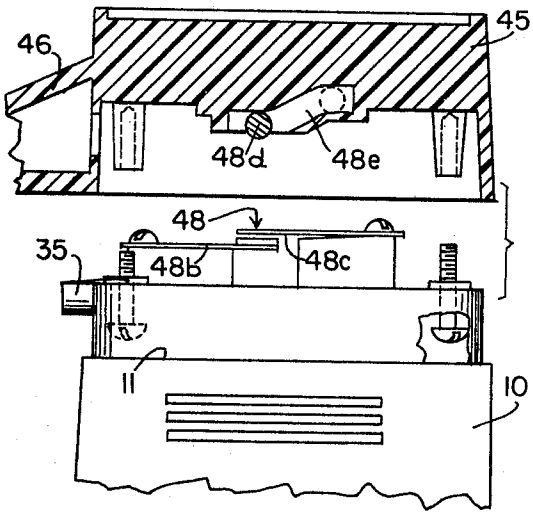


FIG. 4

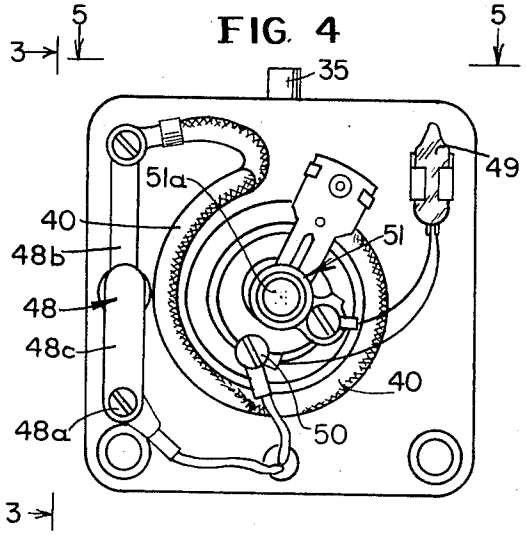


FIG. 8

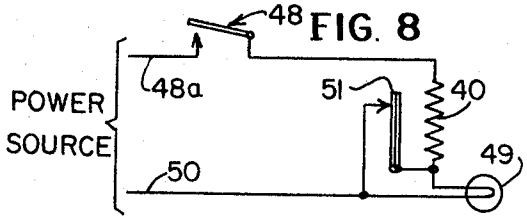


FIG. 5

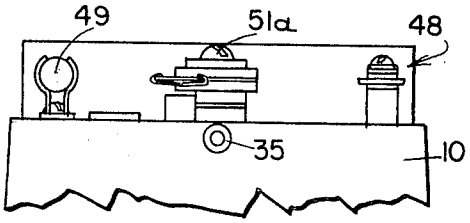


FIG. 6

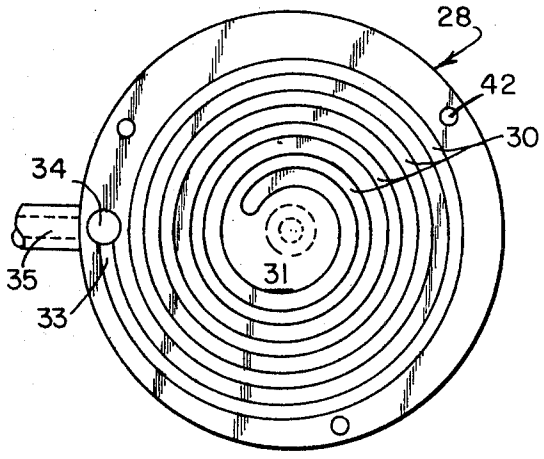
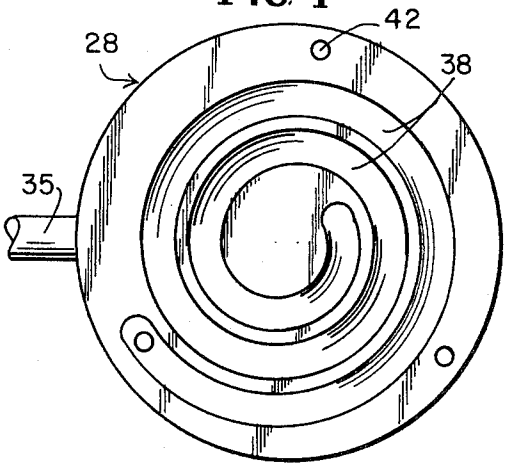


FIG. 7



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DISPENSER FOR PROVIDING WARM LATHER FOR SHAVING

This invention relates to a dispenser and more particularly to a dispenser for providing warm lather for shaving. While the dispenser embodying the present invention is particularly adapted for providing a supply of warm lather, it may be used in connection with materials other than lather. The dispenser embodying the present invention may be generally used where a quantity of warmed semi-fluid material is desired for medication or cosmetic purposes.

It is important that a dispenser for hot lather be simple, effective and be able to withstand the generally humid atmosphere provided in a bathroom where such devices are usually kept and/or used. This is particularly true when a dispenser is provided with a power connection to the usual 115 volt house current source.

In addition, such a dispenser should preferably include as a part thereof, a throw-away can containing a quantity of material to be dispensed — in this instance soap lather — under suitable pressure from a propellant. A dispenser embodying the present invention includes as a part thereof a heat exchanger which provides a storage region for a quantity of lather to be heated. Such heat exchanger maintains an electric heating means isolated from the lather storage region. It is possible to maintain the heat exchanger at a constant elevated temperature so that lather stored in such exchanger will be maintained hot and sterile. For that purpose, the new dispenser preferably includes thermostatic switch means for continuously maintaining the heat exchanger at a desired temperature, such as, for example, 125° or higher. It is possible to open the heating current circuit and simply heat for a few minutes prior to using such dispenser.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a perspective elevation from the front of the new dispenser embodying the present invention.

FIG. 2 is an elevation view partly in section of the dispenser of FIG. 1 showing the dispenser in normal storage condition.

FIG. 2A is a view generally similar to FIG. 2 but showing the dispenser in dispensing position.

FIG. 3 is a partial elevation showing parts of the new dispenser and with the top cover portion removed, this view being along line 3—3 of FIG. 4.

FIG. 4 is a top plan view of the new dispenser with the top cover removed.

FIG. 5 is a view along line 5—5 of the dispenser portion shown in FIG. 4.

FIG. 6 is a bottom view of the heat exchanger block with the bottom cover plate removed.

FIG. 7 is a top view of the heat exchanger block.

FIG. 8 is a circuit diagram of the electrical parts of the new dispenser.

The heat exchanger forming part of the new dispenser is particularly useful with various kinds and types of dispensers. The invention will now be described in connection with the drawings.

The dispenser comprises rectangular housing **10** having open top **11** and open bottom **12**, the latter having two internally projecting lips **13** and **14** on two opposed sides. Supported at the bottom of housing **10** is cup-

shaped base **15**. Base **15** is also rectangular and has open top **16** provided with externally extending lips **17** on two opposed sides. Base **15** is adapted to telescope into the bottom of housing **10**, the two opposed side walls of the base being adapted to be pressed inwardly to permit the two external lips **17** to go up beyond internally extending lips **13**. The two lips normally maintain the base against falling out from the housing. Top lips **14** cooperate with lips **17** to limit upward travel of base **15** within housing **10**.

Housing **10** and base **15** both preferably of plastic have generally rectangular outlines as viewed in plan and are adapted to support within housing **10** pressurized cylindrical container **19** in which a quantity of shaving lather or other preparation under suitable pressure from a propellant gas, such as Freon for example, or other suitable material. The top of container **19** has the customary bell-shaped part **20** providing generally flat circular portion **21** above which projects hollow valve tube **22**. Valve tube **22** extends through a suitable bushing into the can interior and upon downward movement of valve tube **22**, discharge of the can contents may be obtained. Can **19**, as usual, has its bottom **19*a*** attached to the cylindrical can by beading **19*b*** which extends outwardly. The opposite two sides of base **15** may be provided with inwardly extending bumps **15*a*** to retain can **19** in the base. Can **19** can be forced past bumps **15*a*** when a can is to be inserted or removed. Just below top edge **11** of housing **10** is inwardly directed flange or step **11*a*** to limit the entry of dispenser portions, to be described, into the top of housing **10**.

Disposed about the free end of valve tube **22** is depending intake tube part **24*a*** of closure plate **24**. Disposed about intake tube part **24*a*** and bearing against the bottom of plate **24** is tapered helical spring **26** whose bottom rests upon flat top **21** of the can. Over the flat top surface of plate **24** and bolted thereto is heat exchanger **28**. Heat exchanger **28** is preferably made of aluminum which has the advantage of not only being easy to fabricate but of providing excellent conduction of heat. Heat exchanger **28** is in the form of a generally circular block of material, the bottom portion of which contains a spiral rectangular track or groove **30** extending from central portion **31** of the heat exchanger to outer groove portion **33** leading to blind passage **34** extending along the thickness of the heat exchanger block and joining with radially extending tubular portion **35** forming the discharge mouth of the heat exchanger.

Downward pressure on heat exchanger **28** results in housing **10** being forced downwardly to cause base **15** to telescope upwardly into the bottom of housing **10** and move can **19** upwardly toward plate **24**. Valve tube **22** moves upwardly within enlarged bore portion **24*b*** and engages shoulder **24*c*** at the bottom of reduced bore portion **24*d***. Pressure of valve tube **22** against shoulder **24*c*** opens the can valve to effect discharge of lather through the bore of part **24*a***.

The can contents, in this instance, lather, is fed into the inner end of spiral track **30** and goes around the coils of the track until part **34** is reached, at which point the lather is forced into passage **34** and tube **35** for discharge. For heating the heat exchanger, the top face of heat exchanger block **28** is provided with spiral

track 38 in which there is disposed heating element 40. Heating element 40 has a length of heater wire such as nichrome about which a layer of asbestos insulation is disposed. Over the asbestos there is provided tubular wire sheath such as is used for shielding insulated electric conductors against radiation effects. The spiral passage for defining the flow path of lather or other material is physically and thermally quite close to the spiral passage in which the heater cable lies.

Heat exchanger block 28 has some apertures 42 through the outer portion of the exchanger block to accommodate bolts for anchoring the heat exchanger to dispenser cover 45. Cover 45 is provided with spout 46 which is normally positioned to receive lather from discharge tube 35. Bottom plate 24 of metallic heat exchanger block 28 is preferably of plastic which can withstand temperatures of the order of boiling water.

Heating element 40 has one terminal connected to manual switch 48, the other terminal of switch 48 being connected to one wire 48*a* of a line cord for plugging into a conventional 120 volt supply line. The other terminal of element 40 is connected through indicating light 49 to line wire 50 of the cord. Shunted across indicator lamp 49 is thermostatic switch 51.

The wiring arrangement is such that when manual switch 48 is closed, normally closed thermostatic switch 51 will short circuit lamp 49 and heater 40 will be energized. Thermostatic switch 51 is thermally coupled to metallic heat exchanger block 28 by means of bolt 51*a* so that when thermostatic switch 51 reaches the normal opening temperature for which the switch is set, the short across lamp 49 will be removed and a low current through heater 40 will pass through the lamp causing the same to glow. As soon as the heat exchanger has cooled sufficiently, the thermostat switch closes, lamp 49 is shunted out and normal heater current through heater 40 is again established. It is understood that lamp 49 is such a low current device that energizing current for the lamp will be sufficient to cause heater 40 to operate. Other circuit arrangements are possible whereby lamp 49 may be on when the heater is energized and be off when the heater is practically deenergized.

The construction of manual switch 48 may assume a variety of forms and in this particular instance, spring contact members 48*b* and 48*c* are closed against each other by means of a camming piece 48*d* movable in track 48*e*. Camming member 48*d* is controlled by a handle from one of the side walls in cover 45. Member 48*d* extends through the side wall of cover 45. Switch 48 may be left on if desired.

To change containers, press in opposite sides of the base. This will permit the base to be removed. The container can be snapped out of the base. The reverse procedure will be used for installing a new container.

What is claimed is:

1. A dispenser for handling material stored in a pressurized can, said can having a conventional flattened domed top with a tubular valve rod discharge pipe extending upwardly therefrom, normally closed but adapted to be pressed downwardly for valve opening to permit material to be discharged, said dispenser having a housing whose top is open and adapted to accommodate a can therein, said dispenser having a cover assembly extending above the housing in telescoped relation for limited vertical travel, said cover assembly including a bottom flat plate portion having at the central part thereof a depending intake tube portion with an axial passage through said tube portion and through said flat bottom plate portion, said tube portion being dimensioned to enclose the upwardly projecting tubular valve rod portion of the can, said bottom flat plate and intake tube portions being of heat resistant plastic, said bottom flat plate portion having a smooth flat top surface, a block of metal having good heat conductivity, said block having parallel flat bottom and top faces with the block bottom face lying against the top face of said flat bottom plate portion, said block bottom face having a spiral groove therein extending from the center portion of the block bottom face toward the outer portion of said block bottom face, said center portion at the inner end of the groove permitting said tube valve rod member to discharge therein, a discharge spout carried by said block communicating with the outer end of said spiral groove to the exterior of said cover assembly to accommodate discharged material, said heat exchanger block having a spiral track in the top face thereof, an insulated electric heating element disposed in said spiral track at said top face, said spiral track being dimensioned to permit said heating element to be snugly packed in said spiral track, said cover assembly including a flat plate portion disposed over the top face of said heat exchange block, means for maintaining said heat exchange block and remainder of said cover assembly as an integral subassembly, spring means disposed around the downwardly extending intake tube portion of said bottom plate between the flattened dome portion of the can and the bottom face of the bottom plate for biasing said entire cover assembly upwardly, said flat bottom plate portion being spaced well above the can top and the depending tube portion from the bottom plate being properly dimensioned and functioning as a tube to engage the free end of the tubular valve rod when said cover assembly moves downwardly toward the can, said top cover assembly and the top edge of the housing being shaped to limit the downward movement of said top assembly for moving said projecting tubular valve rod downwardly for opening said valve to permit contents from said can to be discharged into the bottom spiral groove of said heat exchanger, said heat exchanger being adapted to have the electric heating element energized for heating the contents discharged from said can, said heat exchanger block having its thickness between the top and bottom block faces small enough so that consistent with mechanical considerations minimum metal lies between the spiral grooves in the two heat exchanger block faces whereby maximum heat efficiency for heating contents within the bottom of said spiral channel is provided permitting minimum heating time while maintaining complete separation between the heating elements and the discharged can contents, said construction having the advantage of easy fabrication and assembly.

2. The construction according to claim 1 wherein the spiral groove in the bottom face of the heat exchanger block has straight sides and a flat bottom as seen in section.

3. The construction according to claim 1 wherein said top assembly provides substantial free space above

a substantial portion of the top face of the top plate portion, said free space accommodating electrical switch means for the heating cable.

4. The construction according to claim 3 wherein said cover portion has an externally extending discharge spout, said discharge spout from the heat exchanger block being integral therewith and extending into the inner end of said first named spout.

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