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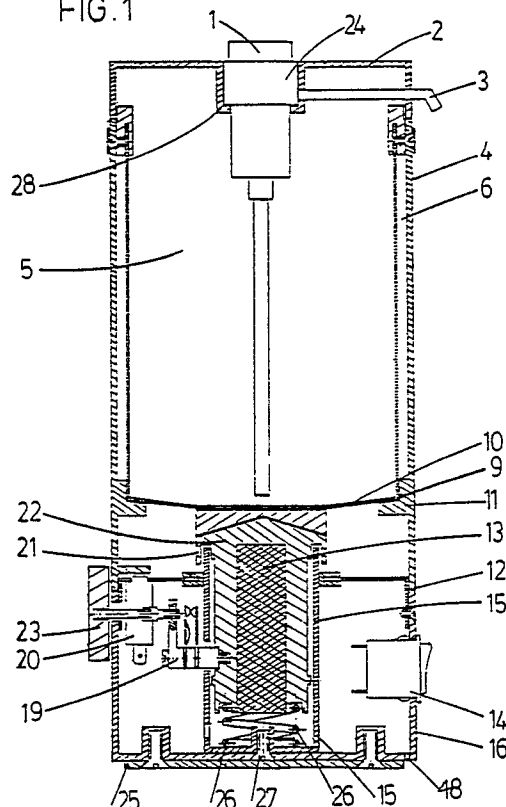
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54 Heating container of liquids, fatty products, gels and similar products.

57 Heating container of liquids, fatty products, gels and similar provided with an independent or fixed heating electrical system, according to model and comprising an upper container and insulating tank (5) of the product to be heated, equipped or not with a metering pump (24), according to use, which is seated on the part containing the control and heating electrical system provided with a system allowing its vertical or horizontal positioning. Said tank at the lower part (10) is incorporating a suitably profiled part to receive by contact, through its external side, the heat coming from the resistor of the active part whereon is resting and the heat is transmitted through its upper side to inside the tank or passive part, in the case of the non-independent and fixed model, all the parts making up a single block.

FIG.1



The present invention refers to a heating container of liquids, fatty products, gels and similar which is showing certain innovative characteristics as seen from the constructive, use and cleaning viewpoints. Possibly said device is of general use as an electrical heater of liquids or fatty products and similar, although its preferable use is that of metering-heating liquid soap or bathing gel being they heated and preserved to an appropriate temperature so that a comfortable, handle use and a better performance is achieved.

This new device comprises two parts or modules to provide easy handling and cleaning of the part containing the product to be heated and is deemed really useful by the fact that the metering tank module, as it does not contain any electrical part is allowing its use at positions where power supply is considered a danger. These two parts or modules are also called as active module and passive module.

The passive part is the upper one and is not provided with any electrical components, its only function being that of a product container tank and product metering which through its appropriate profile and heat conductive base is transmitting the profile inside the mass of the product to be heated. Easy product metering is achieved by the use of a piston pump located inside.

The active or bottom module is the one containing all the control and heating electrical system, such as: resistor, thermostat or also self-adjusting resistor, PTC, thermal fuse, main switch, safety switch for detecting the presence of the passive module, ancillary socket and a current tap. The heating component, in turn, is located in close contact with the heat conductive part whereon the metering-tank module is seated at the lower part of the latter which in turn is also heat conductive, so that in this way the heat can be transmitted inside the mass of the product to be heated. In certain cases, when efficiency so warrants, the two upper and lower modules i.e. the passive and active parts can be integrated in a single non-independently made block.

A practical embosiment of this metering-heating device of fatty products, liquids or similar and more particularly, liquid soap or bathing gel which basic breakdown of its main parts has already been made, can be carried out in several ways, some of them being the object of Spanish Patent applications with the following references: application number 88.01037, filing date March 15th, 1988/ 88.01038, filing date March 15th, 1988/ 88.02421, filing date July 6th, 1988/ 88.3500 filing date October 7th, 1988, all of them however based on the same basic performance i.e. a device division in two modules or basic parts, which are the active and passive ones, mutually separated; the possibility is

also being contemplated that they are formed as a single non-independently made block when certain ways of use so warrant it.

The passive module being the upper one is acting as a container tank with a metering pump incorporated; to operate the pump a pushbutton located at the unit upper part shall be depressed, this pushbutton is projecting from the tank filling central part. When the pushbutton is depressed, the product is forced to go out by the effect of the piston pump and the product can then go out either through an upper side conduit or through the lower central part, according to the system required to be used.

Preferably, the container tank has a side of insulating material or if so required with a double wall, so that a greater thermal insulation of the product to be heated is achieved. At its lower part is showing a suitable profile so that when the passive upper module is settled on the active lower one, both remain aligned and engaged without any possibility of any side displacement.

The lower central part of the passive module is made of a heat conductive material and is seated on the active module heated part which in turn is also conductive in a way that any heat generated by the heating electrical component carried and engaged thereon can be transmitted. This heating component can be comprised of an electrical resistor controller by a thermostat or a self-controlled resistor or PTC, all that with an insulation level meeting the standards applicable.

As safety guard a thermofuse can be used for a maximum restriction of the thermal level or pushbutton switch provided for detection of the absence of the metering tank and also will be applied all those required standards to be met. The active module can be provided with a main switch, a current tap and an ancillary socket so that certain domestic appliances can be used without switching off the current tap of the heating device. The active or basic module has a configuration shaped in a way that it can appropriately be fixed to a surface, either vertical or horizontal and acting as a support for all the unit.

In the variable consisting of the integrated unit as a single not-separable block, the variable can be any one cited, but integrally non-separable or positioned with a clamp shaped support previously fixed to the wall, and due to the device's vertical cylindrical configuration, can be inserted therein the fixation and positioning systems and also other variables explained with detail in the drawing's descriptive section.

By way of summary of the description and to emphasize still even more the main usefulness of the present invention, it can be said that the use assigned to this device is highly varied since ba-

sically will be the one required for preserving any product, liquid or fatty or similar, particularly soap or bathing gel to an appropriate temperature for best use, comfort and performance; because it has the product metering container module the possibility of independence is open by keeping its thermal properties up a determined time and the module can temporarily be used at places which will become dangerous to do it with electrical system incorporated devices as for example to use a bathing gel in the area kept by the shower base or bath.

The present invention is made more understandable by reference to the attached drawings wherein by way of illustration only and non-exhaustive example of the present invention is shown an embodiment of a heating container of liquids, fatty products, gels and similar, according to the principles of the claims:

In the drawings:

Figures 1, 2, 4, 7, 8, 9 and 11 show the several variables of what is basically the device disclosed by the description.

Figures 1, 2, 4, 9 and 11 show some elevation cross-sectioned views of the metering-tank unit and heating system base.

Figures 3 and 6 are plan views of the system and unit.

Figure 5 is a detailed view of a component of the metering pump which can generally be used in all the versions deemed conveniently.

Figure 10 is a plan cross-sectioned view of the support of the metering unit of figure 9.

On seeing the drawings can be appreciated the possible distribution of the different components within the device unit.

In the drawings can be seen the upper body consisting of the top cover -2- for filling the tank -5- which according to the use given to the device can carry or not a metering pump, or carry it outside or inside -24- as in the cases presently shown, projecting only the pushbutton -1- through the cover -2- and from inside the tank -5- shaped by the body -4- also called the passive module because it only acts as a container for the product to be heated. If required, inside the body -4- can be arranged another parallel wall made independent or a vessel inserted inside in a way forming a chamber -6- to increase the product thermal insulation.

The lower part -10- of the tank -5- is heat conductive and can be provided with different profiles, in a way that it collects the heat from the source -13- existing at the lower or active module and distributing it then inside the mass of the product to be heated which is found at the tank of the upper module -5-.

If a metering pump -24- is used, the pump can

be made of several ways although in the present description only two of the many possible ways are cited; in the one corresponding to figure 2, is seen the pump -24- as shaped because of an extension of the base -10- divided in two areas, the first one being cylindrical and making up the pump lining and the other one being frustoconical and heat conductive; it can also be noted from the pushbutton -1- projected out of the cover -2-, a pushing rod -7- resting on the plunger -38- within a central cylindrical projection is coming down; at the plunger lower part is found a ball-spring unit -8- acting as a suction valve, and then the reaction spring -36- and the ejection valve -51- retained by a flexible sheet which distributes delivery -3-. The pump unit's frustoconical section is the one resting on the armature -22- of the heat source -13-.

As regards to the pump related to the plan cross-sectioned view of figure 4, we can see how from the upper pushbutton -1- the pressure exerted is transmitted through the conduit -7- which in turn has inside the flexible pipe -39- provided with an antidripping neck at the external end, the function of the pipe is to take up the displacements of the plunger unit and carry the product to be metered towards the delivery -3- at the final part of -7- where a part -35- is found, which possible profile is detailed on figure 5. Its function is to clamp the flexible pipe -39- and avoid the ball -8A- of the pressing valve may obstruct the flexible pipe -39-.

Number -38- shows a side expansion also cylindrical in shape of the conduit -7- acting as a piston plunger that if required can be arranged without any gasket at all outside the cylindrical wall -37- which is the pump lining; the pump retaining the plunger inside due to a catch -50- located at its upper part; inside a concentric cylindrical space shaped by the plunger and due to the descending vertical projections of the walls -7- and -38- of the plunger is located the reaction pump -36-; this spring resting by its lower part on the horizontal leg of the closing of the pump outside cylinder, wherein at its lowest central part for easy passage of the stroke of the plunger -38-, an inverted frustoconical projection is found which along with the ball -8B- makes up the suction valve.

The metering pump can be located inside the container tank and in several ways, and among such ways three will now be mentioned. First, the pump hanging from the filling cover in a positioning profile steppedly shaped -28- according to figure 1, purposely made and provided with an extension of the suction lower pipe; delivery can be made by means of a pipe -3- with delivery located at a side of the cover -2-. Another of the possible positionings if the one shown on figure 4, achieved by a horizontal extension from the upper part of the lining -37- of the cylinder closing the upper part of

the other cylindrical part -40- concentric to the pump, which is being inserted and adjusted to the inside part of the wall -4- of the upper module of tank; additionally the part -40- which basically acts as a positioning component for the pump body -24- can be supplemented by a conduit -33- to speed up the access of the product still cold through the lower part of the tank -5- in a way that it does not become easily mixed with the product of soap already hot and that, by a communicating effect is found at the high part of the outside annular compartment -41- made up due to the upwardly vertical cylindrical projection of the heat conductive contact base -10-. Due to the effect of the suction of the pump -24- and the pressure of the product at a lower temperature than that entering the conduit -33- found in the compartment -41-, the product is going to the inside compartment -42- wherein is suctioned by the pump in a way that should the upper part of the tank -5- be left empty, the pump -24- then only drains the product amount existing at the compartment -42- leaving the -41- full and with a temperature.

When the tank -5- is filled with product, the one remaining at -41- is pushed by the former and in this way soap is quickly obtained at the appropriate temperature; to avoid the building up of excessive air pockets, even though a small air pocket might be convenient to reduce the heat passage to the upper part of the tank, a decompression conduit -34- is provided with a small extension at its lower part to make up a small air pocket at the upper part inside the positioning compartment of the pump -40-.

If required for certain applications, an easy heat communication to the upper part of the tank -5- then some perforation can be arranged at the upper horizontal surface of the part -40-.

Another positioning possibility of the pump to be considered as intermediate of the two already mentioned ones is to take up simply the upper hollow straight circular cylindrical projection acting as a heat radiator of the part -10- located at the base of the tank -5-. By using this profile, the pump can be rested thereon, according to figure 9 with some fins projecting from the outside part of the wall of the pump cylinder, some passages found therebetween allowing access of the product or soap; said access can also be obtained by some passages -43- performed in the hollow straight circular cylindrical profile; already inside the compartment -42- it can be suctioned by the pump with the particularity that in this case the product is displaced towards outside through the conduit -7- which also acts as a pusher of the plunger -38- of the pump within which the plunger is fixed, due to a catch similar to -50-. Said conduit is inserted inside the pushbutton -1- due to an appropriate

profile and the product delivery outside is performed through an enlarged delivery opening -3- interlocked to said pushbutton -1- which is sufficiently projected over the filling cover -2- to allow displacement of the pushbutton -1- and delivery -3- is not making abutment over the cover. As can also be appreciated on the figure 1, a window -44- can be located with the most suitable shape and place of the wall of the tank -4- in a way that the product loading level can be readily read by anyone.

The lower module or active part contains the control and heating electrical system in addition to be where the unit of the container tank of the product or passive module to be heated will be rested. Said active part can be equipped with a current tap by means of an electrical plug or direct splicing, a location -14- if required to locate a socket and a switch, a thermal fuse -18-, a thermostat -19- and a safety pushbutton switch -20-. The heat electrical source -13- can be integrated in the armature -22- transmitting the heat to the part -10- of the passive module. These two parts, which are in close contact, can be configured and made to perform in any other way which assures a sufficient thermal transmission as can be those shown on the different figures or in the case it is a fixed device as shown on the figure 11, it can be a single block -45-; as seen on the figure 1, two parts are there which are engaged by gravity -22- and -10-; to ensure such a contact, a spring -26- in the armature -22- is provided which is shifted inside a sheath -15- of thermal insulation and guide positioned by the screw -27- and engagement in a labyrinth -21- to prevent access of foreign matter; the engagement -12- is provided to prevent the horizontal displacement of the upper and lower modules.

If an adjustable temperature is required, in this possible version, one can operate on the outside control -23-. The positioning support to a vertical or horizontal surface can be a straight angle plate -25- fixed by screws to the wall. On the drawing 2, the variable consists in that the lower extension of the part -10- while being a metering pump is also the heat collector coming from the active armature -22-. This frustocronical shaped unit has the active part -22- floating due to the spring -26- which assures the part contact, although this part can also be fixed and positioned at the inside frame -15-.

The lower cover -17- has some engagements -21- on the armature -22- acting in a labyrinthic way to prevent access of foreign matter. The thermostat -19- can have a fixed value or if are made adjustable, the adjustment can be performed through a window -23-.

On the figure 4, the parts -10- and -22- in this case, flatly and rigidly positioned, are making the contact also by gravity; on the figures 9 and 11 the

armature of the heating resistor or PTC -13- and the upper part radiating the heat inside the product to be heated is a single part -45-. The evolving frame shaping the lower active part can have several shapes, all of them with the function of positioning the system and protecting the electrical components inside them; some of these possible variables are detailed on the drawings.

The positioning of the lower module to a horizontal and vertical surface can be performed in several ways; some with a square clamped to the lower part as on the figure 1 or else with a lateral rectangular sectioned extension as on the figures 3, 4, 6 and 7, which are positioned to the wall, in the case of the figures 3 and 11 by means of a part -25- previously screwed to the wall and then due to profile -30- engaged inside the rectangular section of its base, through introduction into its lower part; another way can be that of figure 4 where the positioning rectangular part can be clamped to a wall vertical plane by means of a screwed passage -46- or a horizontal surface due to the screwed passage -29-; other possible positioning variables can be those of figures 9 and 10, consisting of a ring -25- previously clamped to the wall due to an elevation section of the rectangular profile at its rear part, and provided with some screwed passages -46- and a locking screw -47- of the heating tank body.

The active part frame can be shaped in several ways, among them those shown on the figures 1 and 9, being basically a single part opened only on the upper part or those of figures 2, 4 and 11 being basically shaped with two parts, an upper one, opened from above to leave way to the thermal conductive mass -22- and also opened at its lower part to allow location of the electrical components; this lower part is closed by means of a cover which can be positioned among other things with the screws -31-; all them carrying at its lower part the draining holes -48- and cable positioning with a pressing device or labyrinth and cable delivery -49-

The passive support, if used, has basically the same positioning function as the active one but it does not contain inside any electrical part so that it can thus be located in wet places.

The advantages of the disclosed arrangements and the operation of all its components has already previously been described herein and the examples involved in the figures are all applicable to the devices.

Claims

1.- Heating container of liquids, fatty products, gels and similar provided with a heating electrical system independent or fixed according to its use, and characterized in that it comprises a passive upper part making up a container tank of the product to be treated and optionally equipped with a metering pump and an active lower part whereon is seated the first one in the case it is of the independent type and making up a compartment containing all the control and heating electrical system and equipped with means for its vertical and horizontal positioning.

2.- Heating container of liquids, fatty products, gels and similar according to claim 1, characterized in that the tank can have or not two concentric bodies mutually engaged one within the other in a way leaving certain separation so as to improve the thermal insulation level if the tank, the passive part, is kept separated of the one containing the heating active system.

3.- Heating container of liquids, fatty products, gels and similar according to claim 1, characterized in that the tank lower end area is incorporating a part with a suitable profile for heat transmission, which in the case of the independent type is resting on the upper end of the active part or on frustoconical central vertical section according to the model, while in the case of the fixed type is integrally and where the part directing the heat inside the product to be heated is in turn the armature of the adjustable-heating member, the electrical system contained in the active part comprising a current tap, the switch and an ancillary connection socket, a safety pressure switch which is switched off when product fails to be in the container tank, a thermostat, a resistor, and if required a PTC self-adjusting resistor contacting a heat transmitting armature and a thermal fuse.

4.- Heating container of liquids, fatty products, gels and similar according to claim 1, characterized in that a metering pump is provided which comprises a cylinder, a plunger, a stem to transmit the liquid driving pressure and a product delivery inside the stem, whereon a ball shaping up the lower valve is located in a frustoconical projection of the cylinder wall with extension of the collection and, said valve acting by gravity while the upper valve shaped with the same arrangement comprises a retaining part for the ball, the reaction spring acting inside a concentric location of the two parts making up the plunger, wherein is retained by a pressure catch; in the case the pump is a portion of the sheathed shaped part which takes up the heat from the tank lower end and penetrates the lower module central section, the pressure made by the upper pushbutton is transmitted by a verti-

cal rod to the plunger inserted into the sheath, the plunger containing the suction valve, a reaction spring located at its lower part and the delivery valve of the device lower end.

5.- Heating container of liquids, fatty products, gels and similar, according to claim 1, characterized in that resting supports are provided, one of them active with electrical components and the other passive without any electrical component in the fixed and non-separable model, all that making up a single block.

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FIG. 1

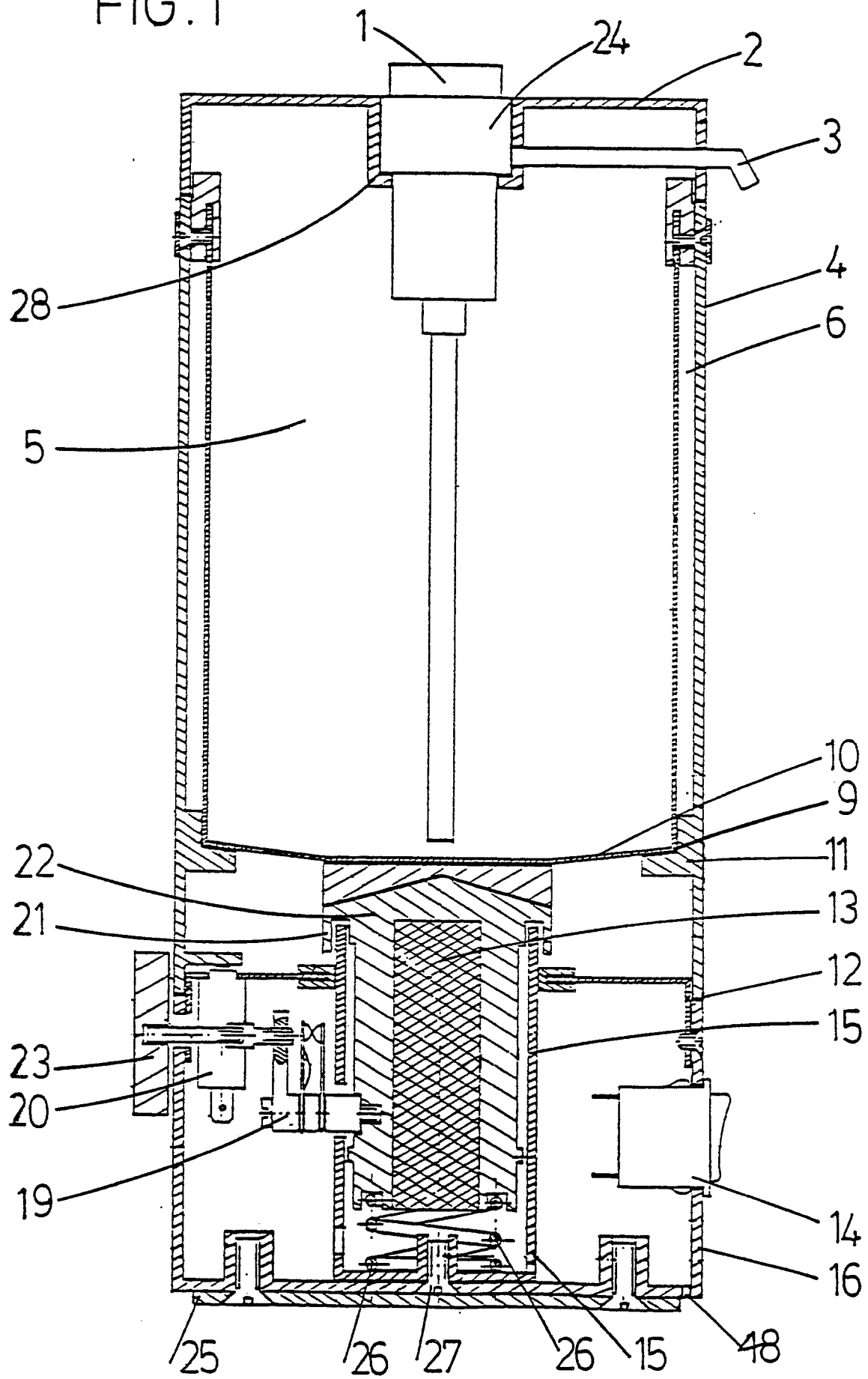


FIG. 2

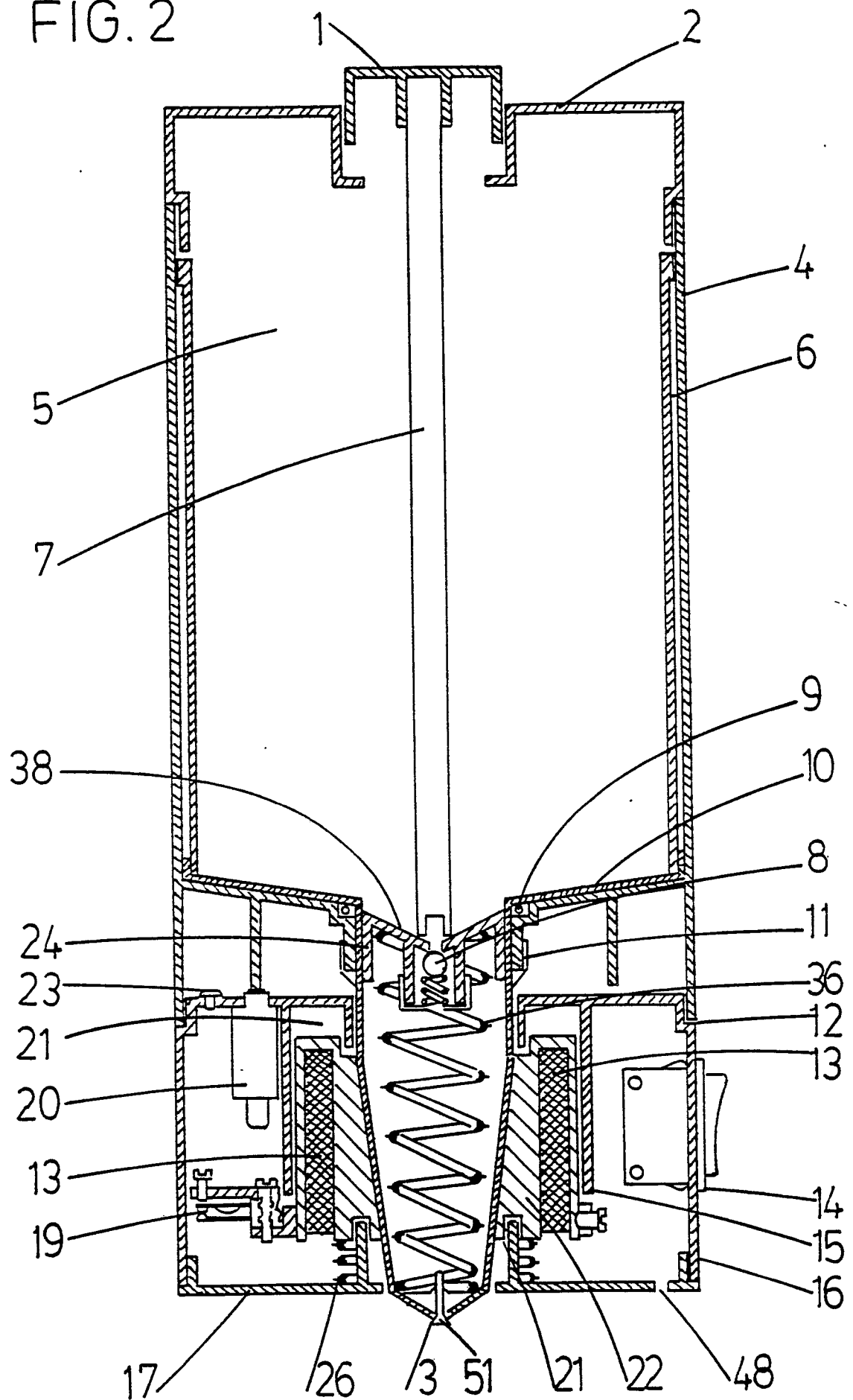


FIG. 3

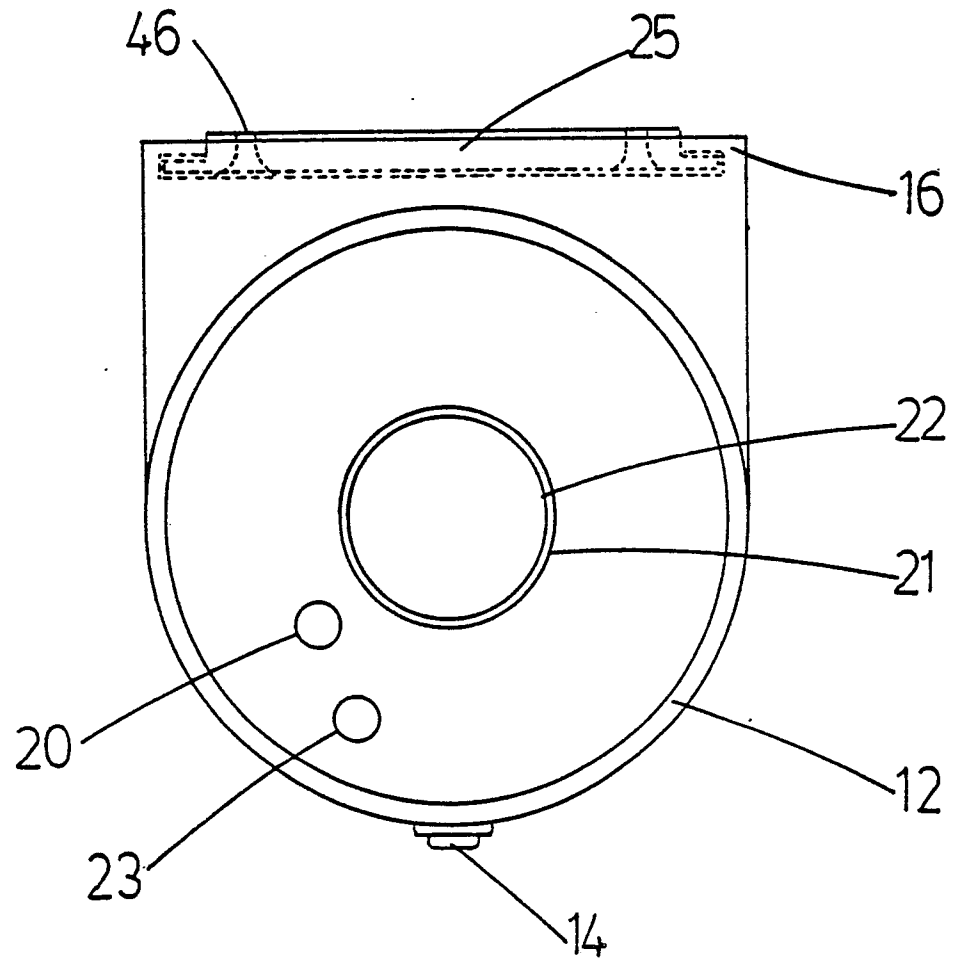


FIG. 4

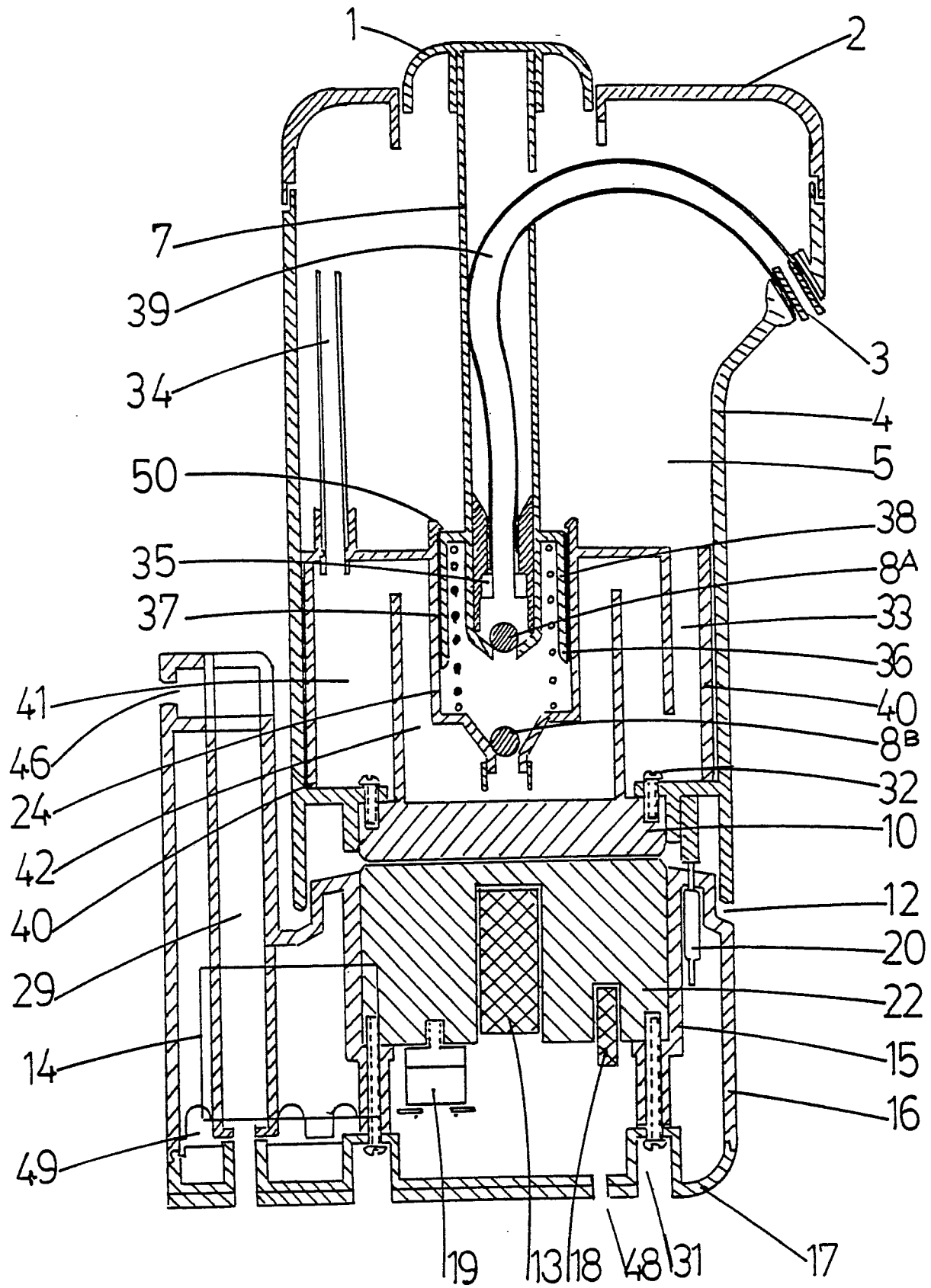


FIG. 5

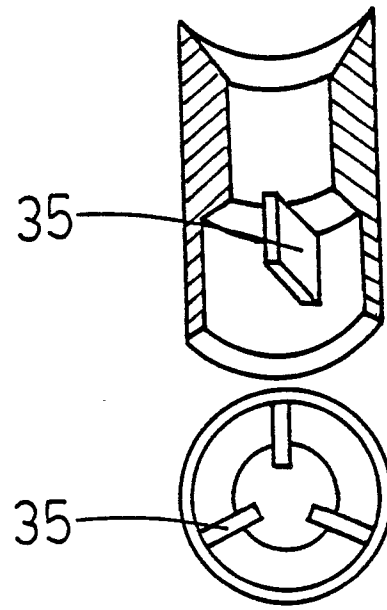


FIG. 6

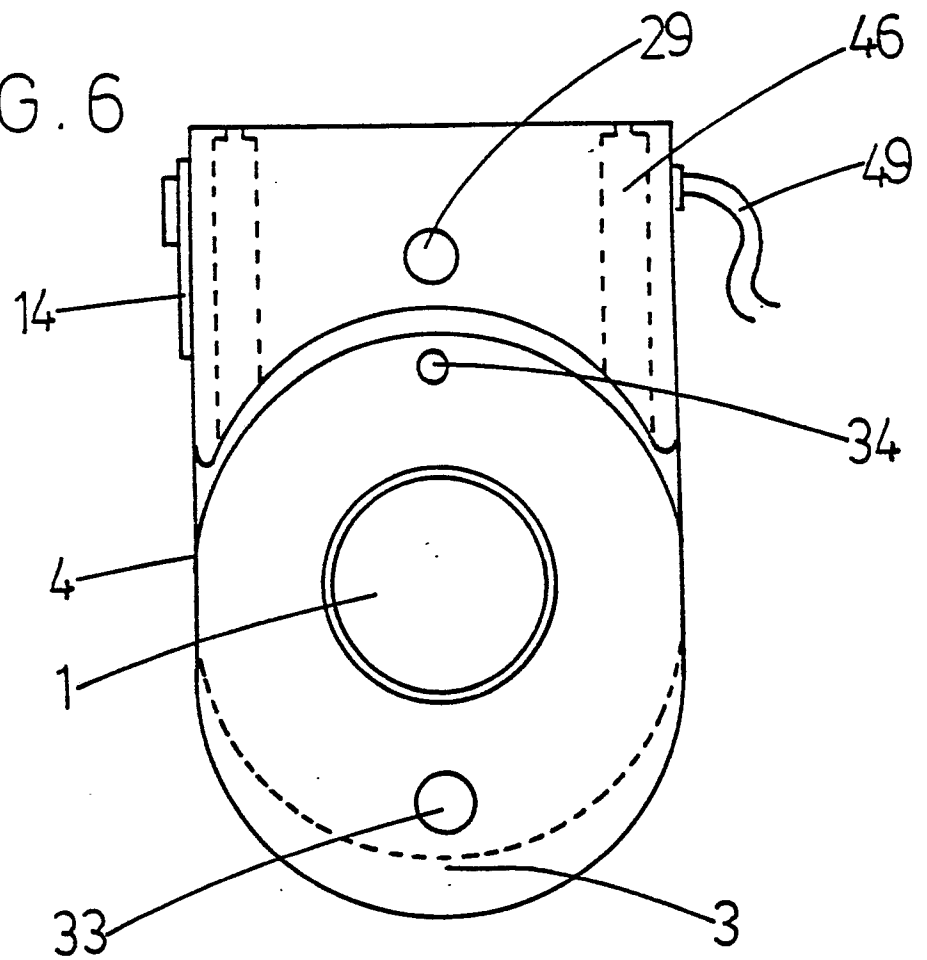


FIG. 7

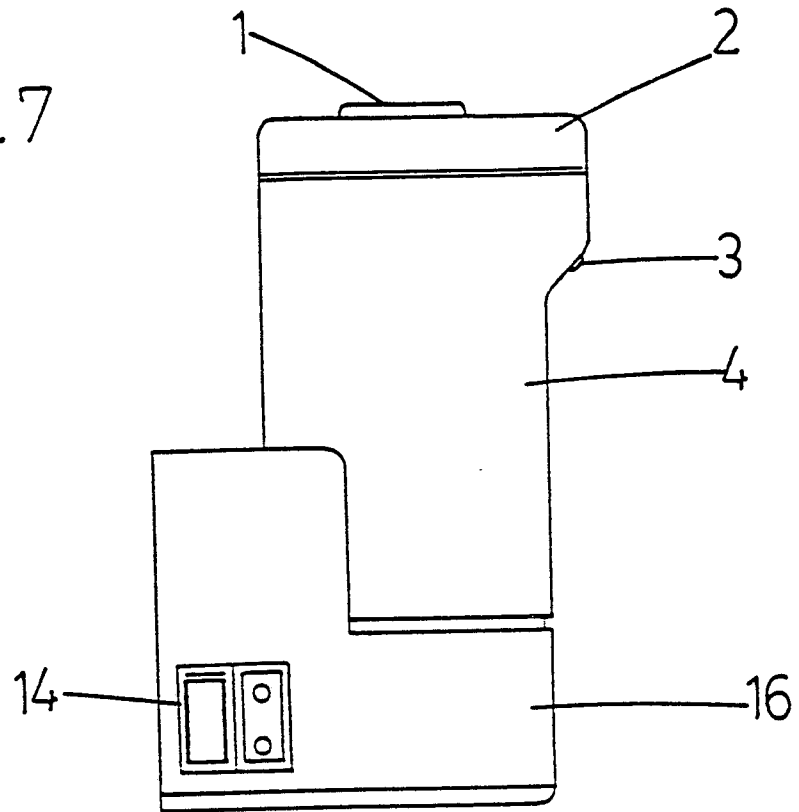


FIG. 8

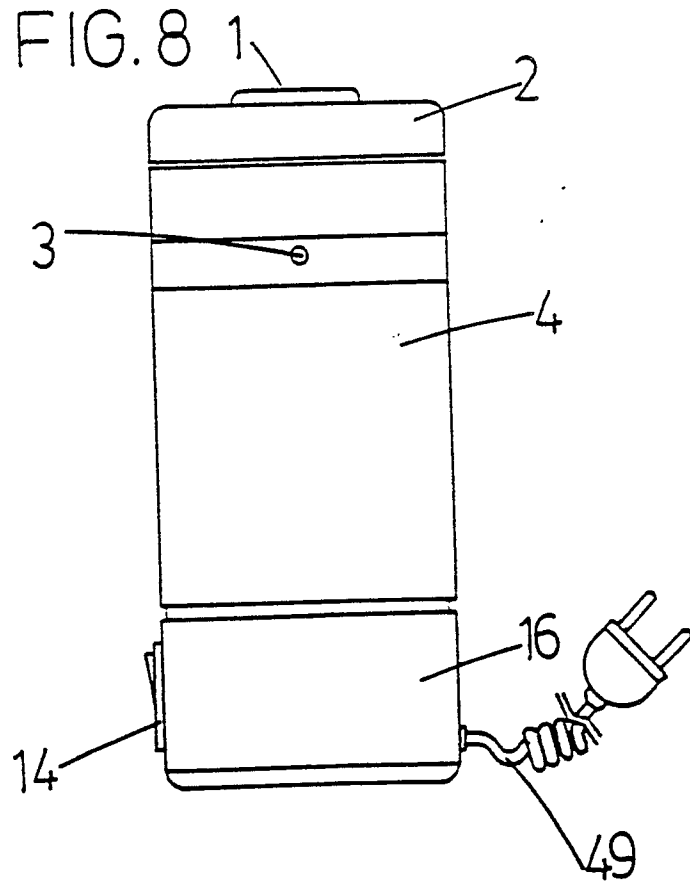


FIG.9

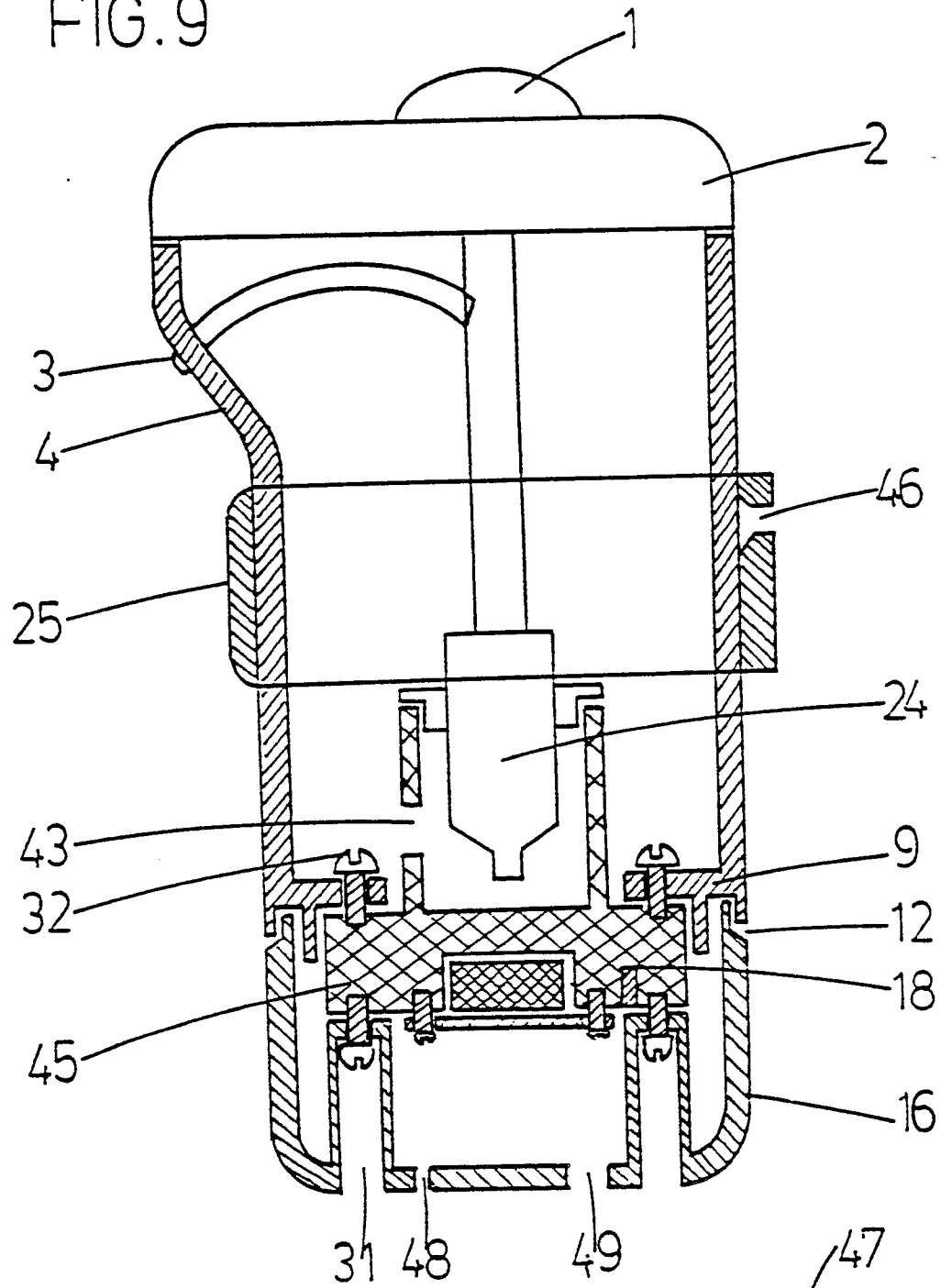


FIG.10

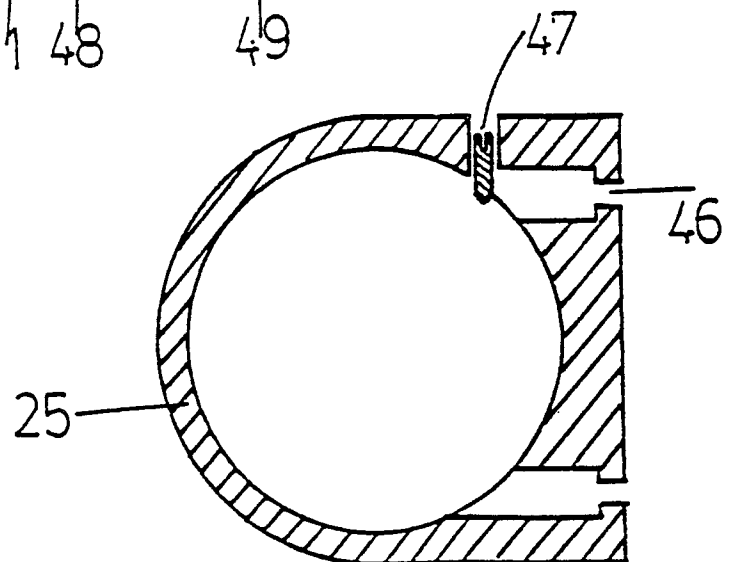
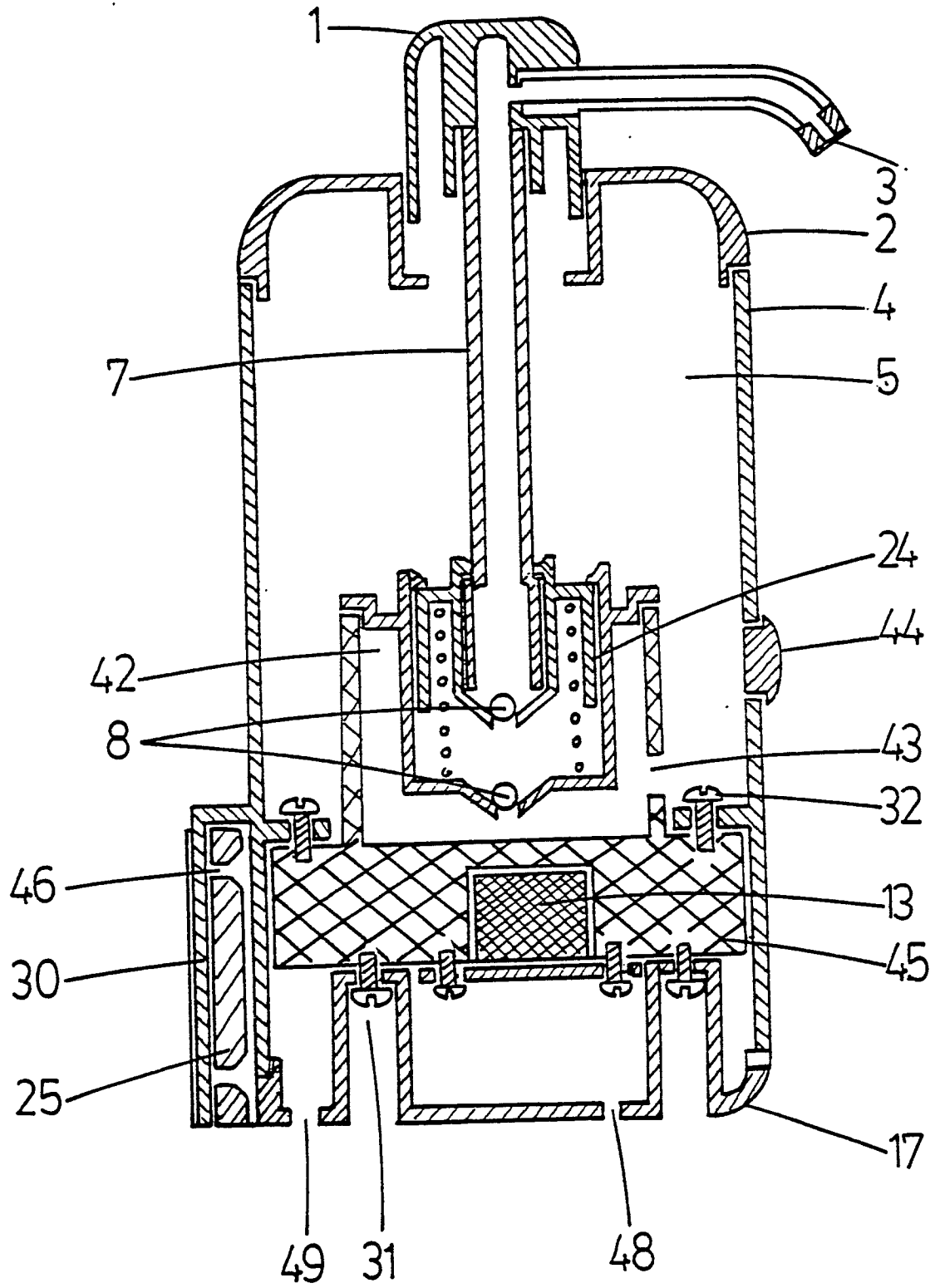


FIG.11





DOCUMENTS CONSIDERED TO BE RELEVANT					
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)		
A	DE-A-2 531 546 (DAZEY PRODUCTS) * Claim 1 * ---	1	A 47 K 5/12		
A	WO-A-8 703 271 (WARMWIPES) * Abstract; figure 2 * -----	1			
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)		
			A 47 K		
The present search report has been drawn up for all claims					
Place of search THE HAGUE		Date of completion of the search 05-06-1989	Examiner CLASING M.F.		
<table><tr><td>CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</td><td>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</td></tr></table>				CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document
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