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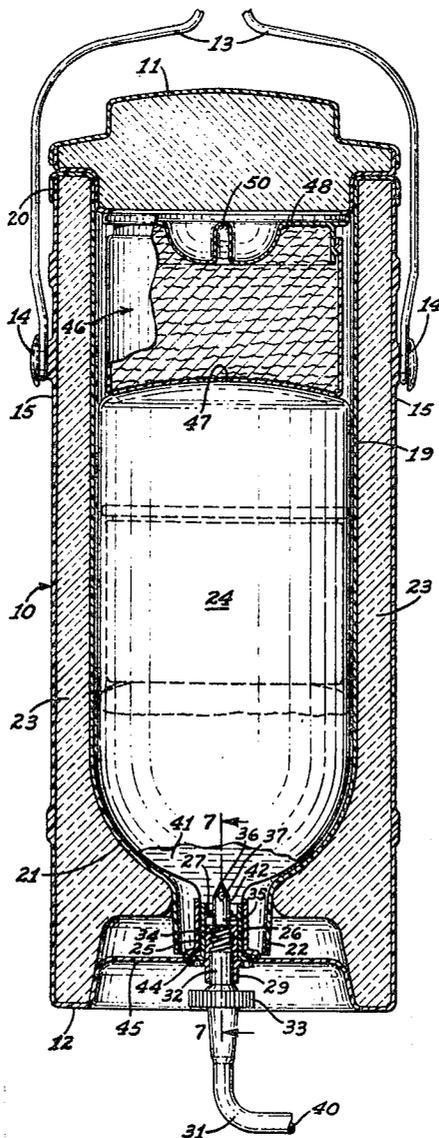
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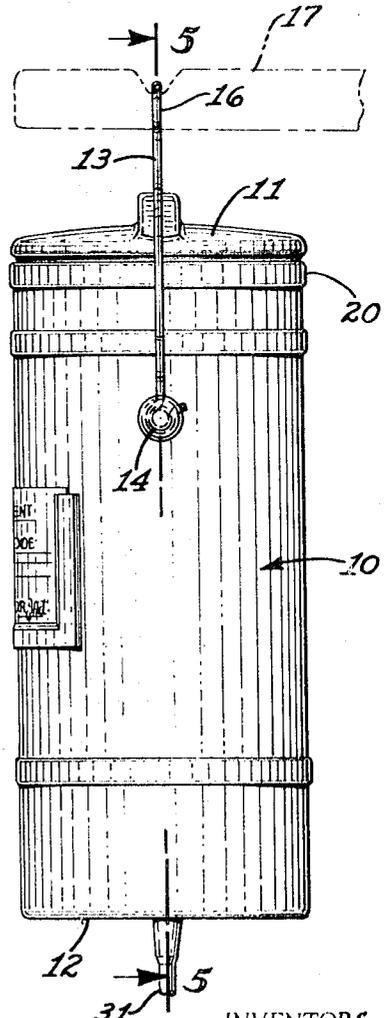
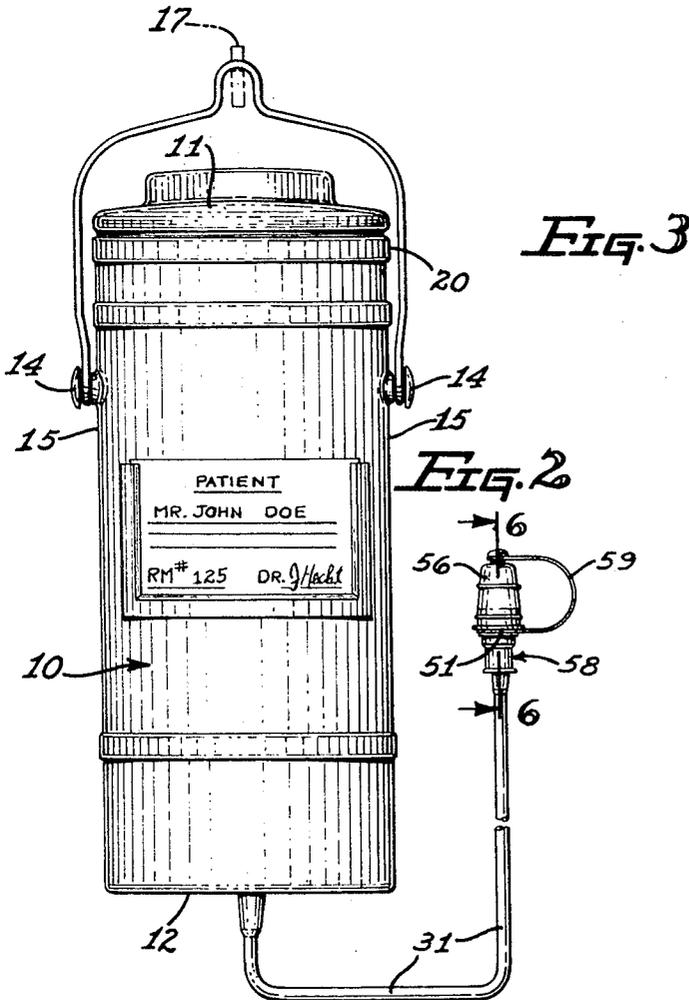
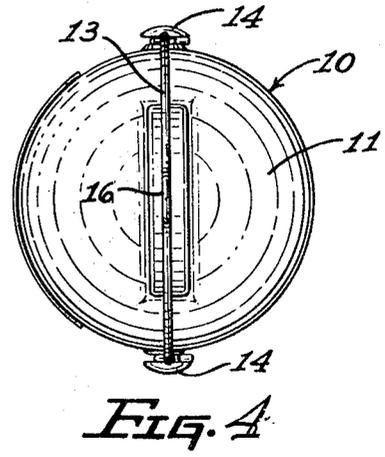
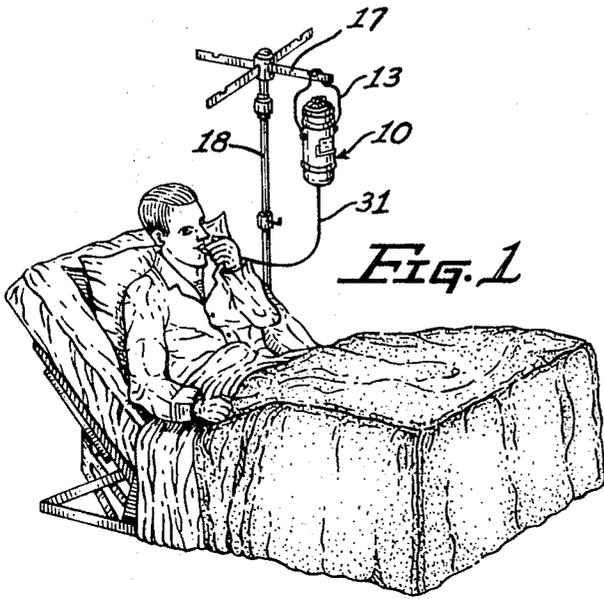
[54] **THERMOWATER DISPENSING FOUNTAIN**
 5 Claims, 8 Drawing Figs.

[52] U.S. Cl. 222/181,
 222/529, 128/222
 [51] Int. Cl. B67d 5/06
 [50] Field of Search 222/146
 (C), 183, 181, 529, 91, 82, 80; 128/222, 223

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ABSTRACT: A water dispensing fountain for particular use of bed patients in a hospital and the like comprising an insulative canister containing a collapsible plastic bag containing the liquid to be dispensed, a perforating device at the bottom of the bag connected to a dispensing hose and discharge mouthpiece, a frozen gel cooling medium on top of the plastic bag to cool and force fluid from the bag, and a closure cover and hanging bail to position the unit in operative position.





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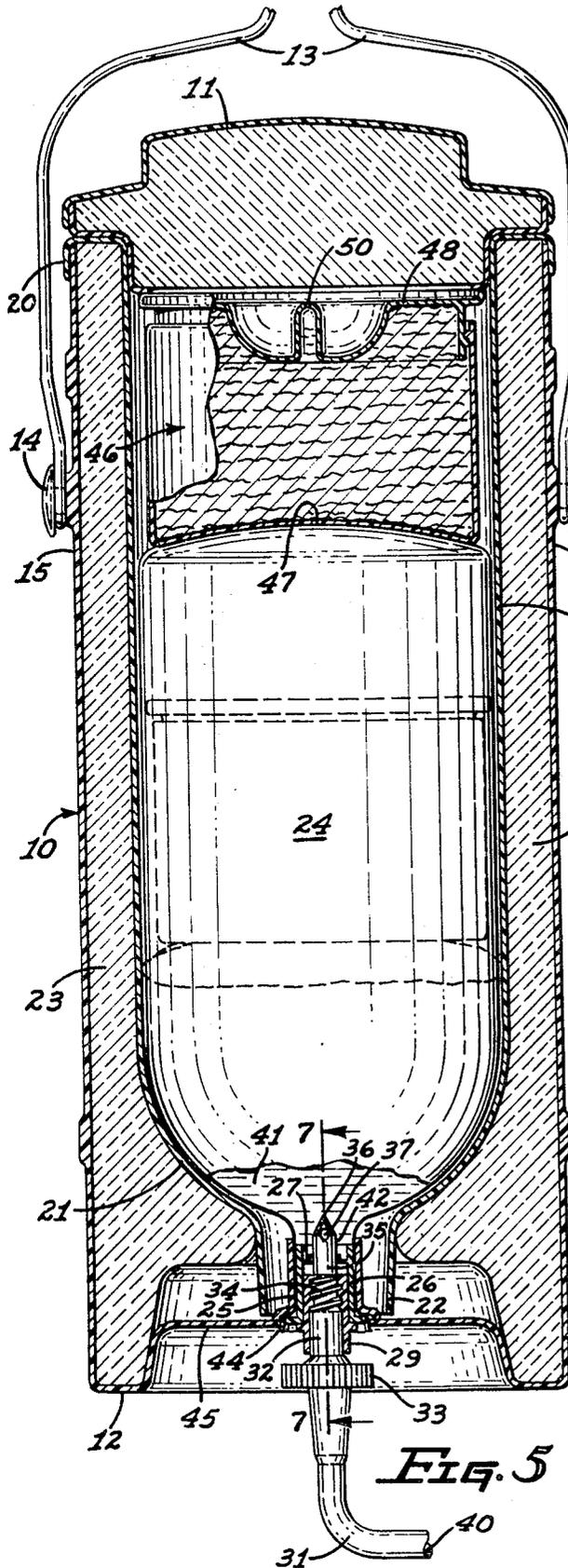


FIG. 5

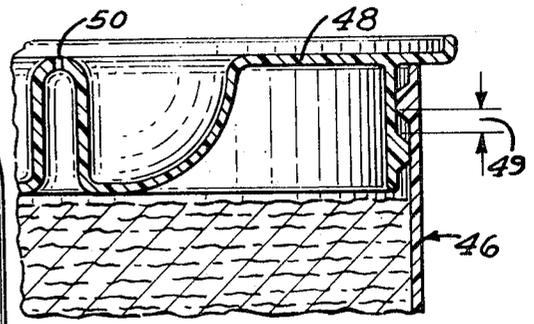


FIG. 8

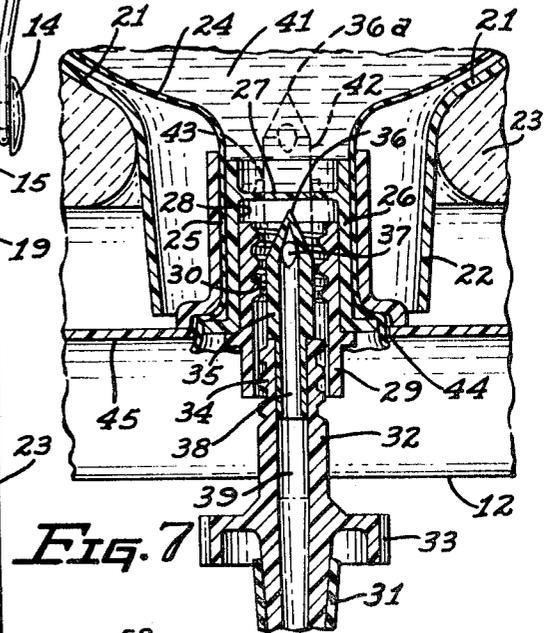


FIG. 7

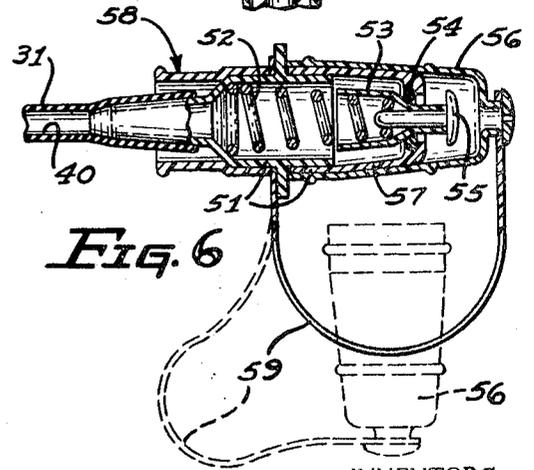


FIG. 6

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THERMOWATER DISPENSING FOUNTAIN

BACKGROUND OF THE INVENTION

This invention pertains to fluid dispensing apparatus, and is particularly directed to temperature controlled water dispensing fountain for use at the bedside of a patient.

Heretofore, it has been difficult to provide a sanitary and convenient dispensing apparatus for liquids at bedside which can be quickly replenished under full sanitary conditions and which keeps the liquid always a required temperature. Further, prior devices lacked self-serving convenience and operability by a bed-ridden patient having very limited physical capability.

SUMMARY OF THE INVENTION

One of the objects of this invention is to provide a fluid dispensing apparatus that is fully sanitary in all of its aspects of use and servicing.

Still another object is to provide a thermowater dispensing apparatus which may be quickly serviced by replacing collapsible plastic bags containing the sanitary water supply.

A further object is to provide a water dispensing device which maintains the plastic bag supply a proper chilled temperature at all times.

An object is also to provide a dispensing hose connected through a perforating valve at the bottom of the plastic bag operably to connect the water supply in the bag to the supply hose and which further functions as a flow control valve after the perforating operation.

It is also an object to provide a mouth operated control valve on the outer end of the supply hose for regulating the rate of discharge into the mouth and in automatically shutting off the hose when removed from the mouth.

And a further object is to provide an expanded frozen gel refreezable thermocapsule in the thermocontainer above and resting on top of the plastic bag fluid supply member to maintain the desired chilled temperature of the liquid in the bag, the capsule feeding down in contact with the top of the fluid supply bag as the fluid supply is withdrawn through the supply hose.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a general perspective view showing the apparatus of this invention in use at the bedside of a patient.

FIG. 2 is a front elevation of the thermowater dispensing fountain having the features of this invention.

FIG. 3 is a right-hand side elevation of the device shown in FIG. 2.

FIG. 4 is a top view of the device shown in FIGS. 2 and 3.

FIG. 5 is an enlarged sectional view on the line 5-5 of FIG. 3.

FIG. 6 is an enlarged fragmentary sectional view on the line 6-6 of FIG. 2 showing the mouth actuated dispensing valve on the outer end of the discharge hose.

FIG. 7 is an enlarged fragmentary sectional view on the line 7-7 of FIG. 5.

FIG. 8 is an enlarged sectional view on the line 8-8 of FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As an example of one embodiment of this invention, there is shown a thermowater dispensing fountain comprising a container indicated generally at 10 having a removable container top 11, a bottom 12, and a bail 13 pivotally connected by trunnions 14 on the side portion 15 of the container. The bail 13 has a suitable looped portion 16 to receive the hanging bar 17 of the usual bedside support stand 18.

The container 10 has an inner sleeve 19 supported by a turned over flange portion 20 on the upper end of the container 10, its bottom end curving inwardly at 21 to form a hemispherical bottom for the sleeve 19 having a downwardly projecting neck 22. Appropriate insulative material 23 is pro-

vided in the space between the container 10 and the outside of the sleeve 19.

Within the sleeve 19 is placed a disposable sani-plastic collapsible water bag 24 having a neck 25 projecting downwardly through the neck 22 of the sleeve 24. A diaphragm valve sleeve 26 is permanently sealed in inside the neck 25 of the water bag 24 and has an integral radially disposed puncturable diaphragm 27. In the bore 28 of the sleeve 26 is secured the nut bushing 29 below the diaphragm having a threaded bore 30.

On the inner end of a supply hose or tubing 31 is connected the piercing screw 32 having an integral operating knob 33 and a threaded portion 34. A piercing point element 35 is fixed to the upper end of the piercing screw 32 having a sharp conical point 36 having near its base discharge passageways 37 communicating with the axial passageway 38 in the piercing point element 35 which in turn communicates with the axial passage 39 in the piercing screw 32 which connects with the bore 40 of the tubing 31.

When the knob 33 is rotated to advance the screw 32 upwardly the point 36 moves from the full line position, shown in FIG. 7, to the broken line position 36a and in so doing perforates the diaphragm 27 and brings the passageways 37 in communication with the water 41 in the bag 24. It will be further noted that the diameter portion 42 of the point area below the discharge passageways 37 forms a seal with perforation 43 so that all water is directed without leakage into the tubing bore 40.

The filled water bag 24 is placed in the sleeve 19 with its neck 25 down so that the above-described arrangement is in alignment with the perforation 44 in the upwardly recessed portion 45 of the bottom 12 of the container 10. A refreezable thermocapsule of expanded frozen gel 46 is placed on top 47 of the bag 24 so as to provide proper chilling of the water and to assist in the collapse of the bag and maintenance of pressure as water is withdrawn through the tubing 31. Preferably, the thermocapsule 46 has a cover 48 with a lost motion vertical movement 49 and vent 50 to maintain proper behavior of the expanded gel with varying temperature conditions.

The outer end of the tubing 31 is provided with a tongue actuated control valve 58 as best seen in FIG. 6, wherein the tubing is connected to the valve body 51 having a light compression spring 52 normally urging a valve plunger 53 against the valve seat 54. The valve plunger 53 is released by pressing the tongue against the valve plunger button 55 with the valve inserted in the mouth, no unsanitary drinking receptacles being required. A suitable sanitary cover 56 may be provided for the mouthpiece end 57 of the tongue-controlled valve 51, and which is secured to the body 51 by the strap 59.

I claim:

1. A thermowater dispensing fountain comprising:

- A. a container having,
- B. a removable top,
- C. and a bottom having a perforation therein,
- D. an inner sleeve in the container secured to the top edge of the container,
- E. an inwardly curving bottom on the inner sleeve having a downwardly projecting neck aligned with the perforation in the bottom of the container.
- F. insulative material between the container and the outside of the sleeve,
- G. a disposable collapsible fluid bag in the sleeve having a neck projecting downwardly through the neck of the sleeve,
- H. a puncturable diaphragm in the neck of the water bag,
- I. a perforating valve carried in the neck of the fluid bag having operable control means below the necks of the sleeve and bag,
- J. a supply tube connected at its inner end to the perforating valve,
- K. and a shutoff and control valve on the outer end of the supply tube.

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2. A thermowater dispensing fountain as in claim 1 wherein the perforating valve includes a diaphragm valve sleeve fixed to the neck of the fluid bag, a radially disposed puncturable diaphragm in the valve sleeve with a nut bushing having a threaded bore below the diaphragm, and the operable control means includes a piercing screw having a threaded portion operating in the nut bushing with a piercing point to perforate the diaphragm.

3. A thermowater dispensing fountain as in claim 1 wherein the shutoff and control valve includes a tongue-actuated valve plunger for regulating the rate or stopping flow of the fluid from the bag when perforated.

4. A thermowater dispensing fountain as in claim 1 wherein

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a refreezable thermocapsule is placed in the sleeve on top of the fluid bag to chill the fluid and maintain uniform discharge fluid pressure in the supply tube.

5. A thermowater dispensing fountain as in claim 1 wherein the perforating valve includes a diaphragm valve sleeve fixed to the neck of the fluid bag, a radially disposed puncturable diaphragm in the valve sleeve with a nut bushing having a threaded bore below the diaphragm, and the operable control means includes a piercing means having a threaded portion operating in the nut bushing with piercing cutting edges rotatably movable to perforate the diaphragm.

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