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DRINKING DEVICE FOR HOSPITAL PATIENTS

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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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This invention relates to a drinking device for hospital patients.

It is an object of my invention to provide a drinking device which is capable of being used by a hospital patient or other bedridden person with a minimum amount of expended energy in order to obtain a drink of water or other beneficial fluid without the assistance of a nurse or attendant.

It is particularly an object of the invention to free the nurses and hospital attendants, or those attending the sick in the home, from the necessity of having to assist the patient each time that water is desired. This consumes a large amount of time and is of considerable expense to the hospital and an annoyance to the nurses and attendants, whose time and attention are distracted from other and more important duties.

At the present time, a conventional drinking glass is often used, with or without a glass tube, or some other type of liquid container is used which must be held by the patient or by the nurse if the patient is unable to do so. It is an object of my invention to provide a device in which the liquid is not held by either the nurse or the patient, but is made available adjacent the bedside of the patient in a container especially designed and constructed for the purpose.

With my invention, the only thing which is held by the patient is a simple and light valve, having a mouthpiece which the patient places in his mouth. An easily operated lever or valve permits liquid to flow into the mouth or cuts it off, as desired. Even the weakest patient can operate my device with a minimum of effort.

It is a related object of my invention to provide improved means of storing the liquids which are supplied to the patient and particularly such means which may be used in cooperation with facilities of the type which are customarily available in the hospital.

It is a further object of my invention to provide such a device in which all parts which are held or operated by the patient are light in weight and simple to use, requiring a minimum amount of effort on the part of the patient.

My invention also comprises such other objects, advantages and capabilities as will later more fully appear and which are inherently possessed by my invention.

While I have shown in the accompanying drawings a preferred embodiment of my invention, it should be understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawings, Fig. 1 is a perspective view of my device in use, with some of the internal construction shown in dotted lines. The size of the valve assembly is enlarged for purposes of illustration;

Fig. 2 is an enlarged sectional view of the valve assembly of my device in use, being irregular to extend through one of the passages;

Fig. 3 is an enlarged sectional view of the stopper portion of my liquid supply bottle, illustrating the operation thereof;

Fig. 4 is a sectional view of my valve assembly, taken on line 4—4 of Fig. 2;

Fig. 5 is a sectional view of my valve assembly, taken on line 5—5 of Fig. 2.

A preferred embodiment which has been selected to illustrate my invention comprises a liquid supply bottle 10, which is preferably a vacuum bottle which is insulated in such a manner as to maintain the temperature of any liquid which is placed therein. The bottom of bottle 10 is provided with a circular flange 11. Positioned adjacent flange 11 and extending circumferentially around bottle 10 is a metal band 12. Pivoting toward band 12 is a semi-circular wire bale 13 having a centrally disposed notch 14.

Bale 13 is adapted to extend upwardly from the bottom of bottle 10 when the bottle is inverted. Notch 14 is adapted to be attached to a hook, nail or other fastening device on a wall or elsewhere. It may be noted in this connection that every hospital is provided with facilities for holding bottles in an inverted position for parenteral injections and my invention is adapted to be used in connection with such previously existing facilities whenever desired.

Bottle 10 is provided with a vacuum jacket which maintains the hot or cold temperature of the liquid which it contains. Mounted in the top of bottle 10 is a resilient stopper 15 having a pair of openings. Mounted in one of the openings is an air inlet tube 16, which extends from stopper 15 to substantially the bottom of bottle 10. Mounted in the other opening is the end of a liquid flow tube 17, which conveys liquid out of bottle 10.

Liquid flow tube 17 is of indeterminate length and is connected at its opposite end by screw threading or other suitable means to a valve assembly 18. Valve assembly 18 comprises a substantially cylindrical housing 19 having a hollow projection 20 to which the end of liquid flow tube 17 is attached.

Extending from the opposite side of housing 19 is an elongated flattened mouthpiece 21, having a pair of passages leading from the inside of housing 19 to an open end which is adapted to be placed in the mouth of the patient and held between the lips.

Movable mounted within housing 19 is a plunger 22, which is provided with top and bottom collars 23 and 24 respectively and a central narrow portion 25 extending therebetween. Mounted within the bottom of housing 19 is a coil spring 26, which exerts upward pressure against the bottom of collar 24. Plunger 22 is provided with an upwardly extending neck 27, on the top of which a head 28 is mounted by means of a screw 29, which extends through head 28 and through a cutaway portion adjacent the top of neck 27. A cap 30 is attached to the top of housing 19 and is provided with a centrally disposed opening through which neck 27 extends.

When my device is not in use, coil spring 26 exerts upward pressure on plunger 22 by bearing against the bottom of collar 24 thereof. This force holds collar 24 in alignment with projection 20 and mouthpiece 21 to block off their passages so that no liquid can flow through valve assembly 18.

In use, bottle 10 may be filled with hot or cold water, soup, juice, or any other suitable liquid of whatever temperature may be desired and then suspended in an inverted position adjacent the bedside of the patient. The complete device is assembled as illustrated, with the valve assembly placed adjacent the head of the patient and within easy reach.

When a patient desires to drink, he need only lift the light valve assembly and place the end of the mouthpiece between his lips. A light downward pressure on head
28 is sufficient to counteract the force of coil spring 26 and move plunger 22 downwardly within housing 19. Collar 24 moves downwardly, bringing narrow portion 25 in line with projection 20 and mouthpiece 21.

The liquid is then freed to be drawn by suction from the mouth of the patient and by the force of gravity from bottle 10 through liquid flow tube 17, through projection 20 and into the interior of housing 19. The liquid then flows around narrow portion 25 of plunger 22 and out through the passages of mouthpiece 21 into the mouth of the patient. Air to replace the liquid which is taken from bottle 10 enters through air inlet tube 16.

When the patient has received a sufficient amount of liquid, he need only release head 28, allowing coil spring 26 to exert upward force on collar 24, moving collar 24 upwardly to block projection 20 and mouthpiece 21. The top of collar 23 bears against the inside of cap 30 to limit the upward movement of plunger 22.

My device may be constructed of any suitable materials which are preferably light in weight, such as plastic, and may easily be sterilized.

When a patient is lying on his back, the throat passages are somewhat restricted and a substantial flow of water cannot be swallowed. With my device, the mouthpiece 21 is provided with a pair of small passages 31 and 32 which limit and restrict the flow of water to the mouth of the patient.

In order to prevent leakage from occurring around the sides of plunger 22, I may provide recesses therein, in which are mounted resilient O-rings, which act as moving seals. One such O-ring may be provided on each side of the openings in housing 19. I may also provide a construction in which the liquid inlet and outlet are not aligned, but are offset from each other. In such case, an additional O-ring may be required, to be positioned between the inlet and outlet when plunger 22 is in closed position.

I claim:

1. A drinking device for hospital patients comprising a container adapted to hold a substantial quantity of liquid and adapted to be positioned adjacent the bed of the patient, a liquid outlet tube connected at one end to said container, an air inlet tube connected to said container and adapted to supply air to replace liquid withdrawn through said liquid outlet tube, a valve assembly connected to the opposite end of said tube, said valve assembly having a mouthpiece adapted to be inserted into the mouth of the patient and valve operating means manually operable by the patient to permit liquid to flow from said container through said liquid outlet tube, through said valve assembly and mouthpiece into the mouth of the patient, said device being operable by the patient without assistance and without any change of position, said valve operating means comprising a plunger vertically movable within said valve assembly, means for biasing said plunger to prevent the flow of liquid through said valve assembly, said plunger adapted to be moved to counteract said biasing and permit the flow of liquid past said plunger from said outlet tube to said mouthpiece.

2. The subject matter of claim 1, said plunger having a collar adjacent the bottom thereof and a narrow portion disposed above said collar, said means for biasing said collar comprising a coil spring disposed within said valve assembly beneath said plunger, said spring exerting upward pressure against the bottom of said collar to hold said collar in position between said outlet tube and said mouthpiece, said plunger adapted to be depressed against the pressure of said spring to move said narrow portion into position between said outlet tube and said mouthpiece to permit liquid to be drawn around said narrow portion and into said mouthpiece.

3. The subject matter of claim 1, said container comprising a vacuum bottle adapted to maintain substantially constant the temperature of liquids therein and means for maintaining said container in inverted position, said liquid outlet tube being connected to the top of said container.

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