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DOUCHE AND ENEMA APPARATUS

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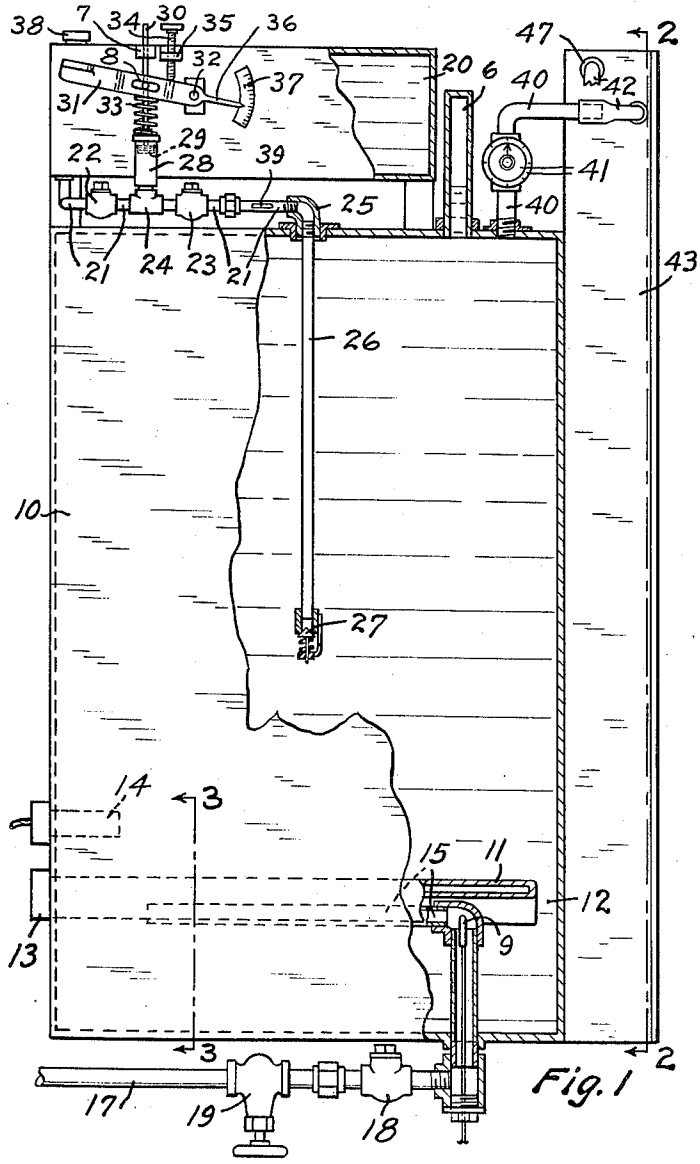


Fig. 1

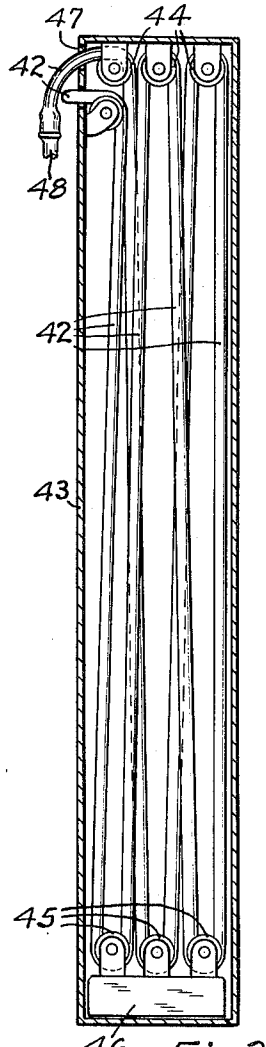


Fig. 2

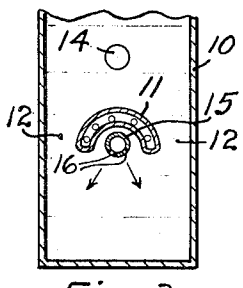


Fig. 3

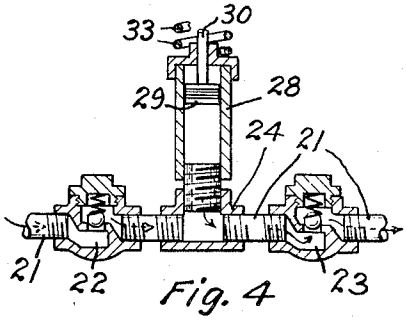


Fig. 4

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DOUCHE AND ENEMA APPARATUS

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6 Claims. (Cl. 128—227)

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This invention relates to douche and enema apparatus and an object of this invention is to provide apparatus that will greatly simplify the work of taking or administering a douche or an enema.

Another object is to provide simple and easily operated douche and enema apparatus that can be installed as standard equipment in ordinary bath rooms and that can be kept ready for use at any and all times and that is quickly and easily operable in such a manner as to reduce to a minimum the time and effort required in the taking of a douche or an enema.

Another object is to provide douche and enema apparatus of compact construction that is thin enough so that it can be installed in the wall of a wood frame building of ordinary type, between the studding, thus avoiding obstruction of the space within a room.

Other objects are to provide douche and enema apparatus in which the water can always be maintained at the correct predetermined temperature and can be used at a predetermined pressure, and to provide douche and enema apparatus in which a measured amount of antiseptic or medicated solution can quickly and easily be added to the water, and to further provide improved means for taking care of the flexible conduit by which the douche or enema is administered.

Another object is to provide apparatus which will tend to prevent female disorders by minimizing the inconvenience of taking douches and thus encouraging the practice of more frequent and better hygienic routine.

Another object is to provide douche and enema apparatus comprising a tank, water supply means adapted to supply water under pressure to the lower portion of said tank, water heating means in said tank, a receptacle for antiseptic solution, conduit means connected with said receptacle and extending into said tank, injector means operable to inject a measured quantity of antiseptic solution from said receptacle into said tank, and a valve controlled flexible douche and enema conduit connected with the upper end portion of said tank.

Other objects of the invention will be apparent from the following description taken in connection with the accompanying drawings.

In the drawings Figure 1 is a view partly in section and partly in front elevation of a douche and enema apparatus constructed in accordance with this invention.

Fig. 2 is a view partly in section and partly in

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elevation taken substantially on broken line 2—2 of Fig. 1 and showing storage means for a flexible liquid conduit or tube.

Fig. 3 is a fragmentary sectional view taken substantially on broken line 3—3 of Fig. 1 and showing cold water inlet means and electric water heating means.

Fig. 4 is a detached fragmentary sectional view showing check valve and injector means.

Like reference numerals designate like parts throughout the several views.

In the drawings 10 is a tank, preferably formed of non-corrosive metal and of suitable shape and size so that it can be installed in a wall cabinet between the studding in a house wall of ordinary construction. Preferably the tank 10 is of a size so that it will hold from three to four quarts of liquid.

An electric water heater 11 is provided in the lower portion of the tank 10. Preferably this water heater is of curved cross sectional shape, as best shown in Fig. 3, and has its concave side directed downwardly. Also preferably this water heater is of such dimensions and is so positioned in the tank 10 as to leave narrow water passageways 12 between at least three sides of the heater and the tank. This positioning of the heater 11 causes said heater to function as a baffle so that the cold water entering the tank below the heater 11 will be heated and evenly distributed in the tank as it flows upwardly past the heater in the passageways 12. Obviously the exterior surface of the tank 10 can be covered with any suitable heat insulating material if desired. Suitable electric receptacle means 13 are provided on the tank at one end of the heater 11 to facilitate making electrical connections with said heater. A thermostat 14 is provided in the tank 10 above the water heater 11 for controlling the supply of electric current to said water heater. Preferably this thermostat 14 is adjustable within a limited range and can be set so that it will open the circuit to the heater at any predetermined temperature within that range and will close the circuit to the heater for all temperatures below the predetermined maximum. Ordinarily a range of temperature adjustment varying from about ninety to about one hundred forty degrees Fahrenheit will be provided for.

Cold water under pressure is supplied to the tank 10 from a pipe 15 positioned beneath and parallel with and within the concavely recessed portion of the water heater 11. Preferably the water from the pipe 15 discharges in a generally downward direction through openings 16 in said

pipe to avoid agitating the liquid in the upper portion of the tank 10.

The pipe 15 communicates with a source of supply pipe 17. The pipe 17 is provided with a check valve 18 and a shut off valve 19. The check valve 18 is positioned so as to prevent a back flow of liquid from the tank 10 through the conduit 17.

A smaller tank or receptacle 20, preferably formed of glass or of other non-corrosive material is disposed above the tank 10 and may be supported on said tank 10. The receptacle 20 is adapted to contain any suitable liquid antiseptic or solution that is to be added to and mixed with the water in the tank 10 preparatory to using this water. Means are shown in the drawings for introducing a measured quantity of the solution from the receptacle 20 into the tank 10. This means comprises an outlet conduit 21 from the tank 20 having two check valves 22 and 23, see also Fig. 4, and a T fitting 24 therein and communicating, as by means of an elbow 25, with a vertical conduit 26. The conduit 26 extends down into the tank 10 and preferably terminates approximately at the center of said tank 10. A combined spring pressed check valve and spreader valve is provided on the bottom end portion of the conduit 26 to prevent liquid in the tank 10 from entering the conduit 26 and to spread and distribute the solution that is being discharged into the tank 10.

Both check valves 22 and 23 are positioned so as to prevent a back flow of liquid in the conduit 21. This prevents a back flow of liquid toward the receptacle 20.

The T fitting 24 is connected with the conduit 21 between the check valves 22 and 23 and a pump or injector cylinder 28 is communicatively connected with the T fitting 24. A reciprocable piston 29 in the cylinder 28 is connected by a piston rod 30 with a hand lever 31. The piston rod 30 may extend through the lever 31 and may be connected with said lever 31 by slot and pin means 8 and may be slidable in guide means 7 above the lever 31 so that said piston rod 30 will always be moved vertically by swinging movement of the lever 31 to insure smooth operation of the piston rod 30 and piston 29 in the cylinder 28.

The lever 31 is fulcrumed on a pivot 32. A compression spring 33 is interposed between the lever 31 and the top of the pump cylinder 28 to yieldingly urge the lever 31 together with the piston rod 30 and piston 29 upwardly. Means are provided for adjusting the stroke of the piston 29 to thereby vary the amount of solution that will be delivered to the tank 10 at each down stroke of the lever 31. One way of doing this is to provide a manually operable screw 34 that is threaded through a fixed bracket 35 and positioned to serve as a stop for the lever 31.

Also preferably means are provided to visually indicate the amount of solution which will be delivered at each stroke of the lever 31. This indicator means may be in the form of a pointer 36 on the lever 31 movable relative to graduations 37 on the receptacle 20. Obviously other stop means and other indicating means may be devised.

A suitable filler opening, closed by a cap 38, is provided in the solution receptacle 20.

A transparent insert 39 is preferably provided in the conduit 21 so that the flow of liquid in said conduit can be observed. The parts 21 to 28 inclusive are all formed of non-corrosive material so that they will not be adversely affected by the solution contained therein.

The apparatus which takes care of the discharge of liquid from the tank 10 comprises a conduit 40 provided with a pressure regulating valve 41 and communicating with a flexible conduit 42, such as a rubber tube or hose. The flexible conduit 42 can be of any desired length. When this conduit 42 is not in use it is preferably stored within a housing 43 and extends back and forth in this housing 43 over two sets of guide rollers 44 and 45, as shown in Fig. 2. The guide rollers 44 of the upper set are supported from the upper end of the housing 43. The guide rollers 45 of the lower set are secured to a weight 46 that is movable vertically in the housing 43. One end portion of the flexible conduit 42 extends outwardly through a suitable opening 47 in the front wall of the housing and is adapted to have any suitable fitting or nozzle 48, a fragment of which is shown in Fig. 2, connected therewith.

When the flexible conduit 42 is not being subjected to any tension the weight 46 will move downwardly and draw substantially the entire length of the conduit 42 into said housing. In this position the weight 46 will preferably rest on the bottom of the housing 43 and the conduit 42 will not be under much tension. By exerting a pull on the end portion of the conduit which protrudes from the opening 47 said conduit may be drawn outwardly for use. As the conduit 42 is drawn outwardly the weight 46 will be raised and will again retract the conduit 42 as soon as it is released.

In the thermostatic control means for the water heater 11 preferably a thermostat member 9 is provided in the cold water inlet pipe 15 and this thermostat 9 is connected with the circuit of the heater 11 in such a manner as to cause the heater 11 to be energized at all times when cold water is being delivered from pipe 15 into the tank 10. This thermostat 9 will insure that the heater 11 will be energized as soon as cold water starts to flow.

In the operation of this apparatus the water heater 11, controlled jointly by the two thermostat members 9 and 14, will always tend to maintain the water in the tank 10 at a predetermined temperature, which may be determined by the thermostat 14. In this condition the water is always ready for use. The conduits 21 and 26 and pump cylinder 28 below the piston 29 are always filled with solution from the receptacle 20. When the apparatus is to be used the user imparts one downward stroke to the lever 31 and then releases the same. This discharges a measured amount of solution from the tank 20 outwardly past the spreader valve 27 into the water in the receptacle 10. This solution is spread in the form of a cone as it discharges past the valve 27 and and very quickly mixes uniformly with the water and may be used by drawing out the flexible conduit 42 and opening the valve 41 the desired amount.

An expansion chamber 6, which will always be partly filled with air, may be connected with the upper portion of the tank 10 to take care of the slight increase in volume of liquid in the tank 10 that occurs when the solution is delivered into the tank 10 from the receptacle 20.

As soon as the valve 41 is opened cold water will begin to enter the tank 10 and the heater will begin to heat this cold water. The warm solution being withdrawn from the top portion of the tank 10 will remain on top of the colder

water until substantially all of this warm solution has been drawn off. As soon as cooler solution begins to flow from the flexible tube 42 the valve 41 may be closed. The spring 33 will always tend to raise the piston 29 in the pump cylinder 28 and this will insure that the space in the pump cylinder below the piston 29 will always be properly charged with solution and ready for operation.

This apparatus can be provided in portable form for use in hospitals, sanitariums and the like for colon irrigation or enema use. Obviously any solution can be used in the receptacle 20 or the device can be used with water only and without injecting solution from the receptacle 20 into the tank 10.

Obviously changes in this device may be made within the scope and spirit of the following claims.

I claim:

1. Apparatus of the class described, comprising a closed tank; water supply means supplying water under pressure to the lower end portion of said tank; a check valve in said water supply means; water heating means in said tank; pressure operated means for injecting a measured quantity of antiseptic solution into the water in said tank; expansion chamber means communicatively connected with the upper end portion of said tank providing expansion to permit the injection into the tank of the antiseptic solution; an outlet conduit connected with the upper end portion of said tank; a pressure regulating valve in said outlet conduit; and a flexible douche and enema conduit connected with the upper end portion of said tank.

2. Apparatus of the class described, comprising a tank of relatively narrow width adapted to be installed in a wall of a building; electric water heating means in the lower portion of said tank, said heating means forming a water baffle having edge portions spaced from the walls of the tank to leave relatively narrow water passageways for the upward passage of water; a water inlet conduit positioned closely adjacent to and beneath said water heating means and having downwardly directed water discharge openings supplying water under pressure to said tank below said water heating means; means for injecting a measured quantity of antiseptic solution into the water in said tank above said heating means; a douche and enema conduit connected with the upper end portion of said tank; and a pressure regulating valve interposed between said douche and enema conduit and said tank.

3. Apparatus of the class described, comprising a water tank; water supply means supplying water under pressure to the lower portion of said tank; thermostatically controlled water heating means in said tank; a receptacle for antiseptic solution; conduit means connected with said receptacle and extending into said tank and terminating in the medial portion of said tank; a combined check and spreader valve at the terminal end of said conduit means operable to spread and evenly distribute the antiseptic solution in said tank and to prevent water from said tank from entering said conduit means; injector means connected with said conduit means operable to inject a measured quantity of antiseptic solution from said receptacle into said tank; and a valve controlled flexible douche and enema conduit connected with the upper portion of said tank.

4. Apparatus of the class described, comprising a closed water tank; water supply means supplying water under pressure to the lower portion of said tank; water heating means in said tank; a receptacle for antiseptic solution; conduit means connected with said receptacle and extending into said tank; two spaced apart check valves in said conduit means both positioned to provide a flow of liquid toward said tank and to prevent a flow of liquid toward said receptacle; injector means connected with said conduit means between said two check valves; manually actuated lever means positioned to operate said injector means providing for the injection under pressure of a measured quantity of antiseptic solution from said receptacle into said tank; a douche and enema conduit connected with the upper portion of said tank; and a pressure regulating valve interposed between said douche and enema conduit and said tank.

5. Apparatus of the class described, comprising a water tank; water supply means supplying water under pressure to the lower portion of said tank; water heating means in the lower portion of said tank; a receptacle for antiseptic solution; conduit means connected with said receptacle and extending into said tank; a check valve in said conduit means to prevent a flow of liquid toward said receptacle; a reciprocating plunger pump operable to inject a measured quantity of antiseptic solution from said receptacle into said tank, said pump being connected with said conduit means between the check valve and the tank; lever means connected with said pump for operating the same; adjustable stop means positioned to limit the stroke of said pump and thereby vary the amount of antiseptic solution discharged by a stroke of the pump; a douche and enema conduit connected with the upper portion of said tank; and a pressure regulating valve interposed between said douche and enema conduit and said tank.

6. Apparatus of the class described, comprising a tank of relatively narrow width adapted to be installed in a wall of a building between the studding thereof; water heating means in the lower portion of said tank; water supply means supplying water under pressure to said tank below said water heating means; means for injecting a measured quantity of antiseptic solution into the water in said tank above said water heating means; an upright conduit receptacle positioned alongside of said tank; a set of grooved rollers supported in the upper portion of said receptacle; a weight movable in said receptacle; another set of grooved rollers carried by said weight; and a valve controlled flexible douche and enema conduit connected with the upper portion of said tank and passing through said receptacle and around said rollers, whereby said flexible conduit will automatically be yieldingly retracted into said receptacle by said weight and may be withdrawn from said receptacle by exerting a pull on the end portion thereof.

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