

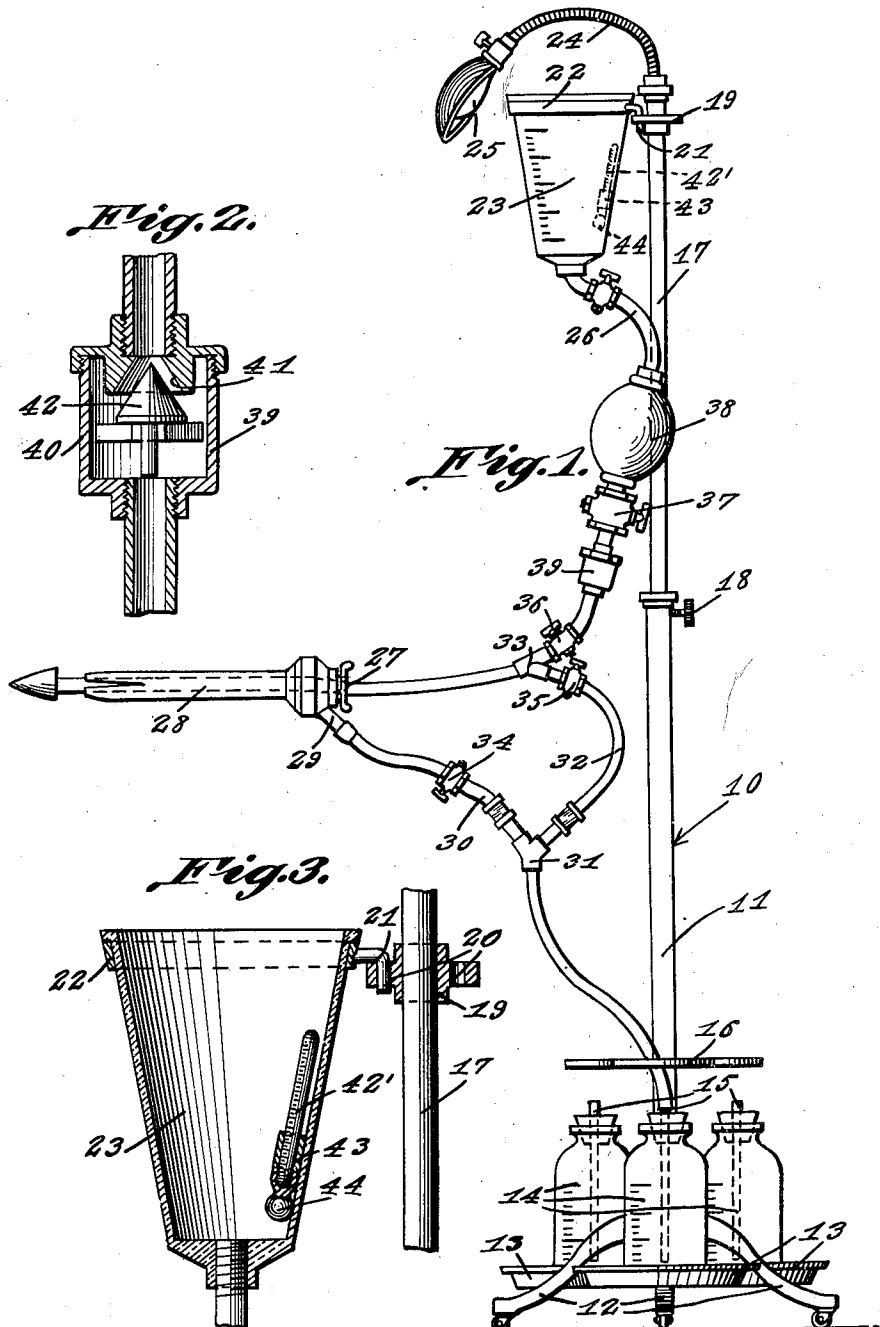
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COLON IRRIGATOR

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COLON IRRIGATOR

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This invention relates to a portable unit for colon irrigation.

In the present method of administering colon irrigation treatments to patients, it is continuously demonstrated that a patient under treatment may, and often does, develop sufficient pressure within the colon, to force the medical solution backward into and through the colon or inflow tube, thus contaminating the main artery of supply. This condition is most dangerous as the discharged solution may contaminate the supply, thus becoming a source of infection which might be delivered from one patient to another or cause a re-infection of the same patient. The primary object is therefore to arrest any possible back flow of the solution to overcome the above dangers in the administering of colon irrigation.

To this end I may provide a back stop check in the colon inflow tube or main artery of supply, so arranged that when the pressure within the colon reaches a predetermined point, that is to say, sufficient to overcome the pressure developed and applied by the column of solution, the back stop check, which may be a suitable valve, will operate to close communication with the source of irrigating liquid supply, and thus prevent the colonic back pressure from returning any discharged and hence contaminated solution into the supply source.

At times it may be found that a patient's developed colonic pressure will exceed the normal amount, so that the introducing pressure necessary to overcome the abnormal internal pressure will be such as to cause noticeable or marked discomfort, as for example when the internal pressure is such as would be represented on the pressure gauge as about 2 lbs., which may be termed the point of discomfort. Also, some authorities maintain that (Deaver-Surgical Anatomy, Vol. III, page 179) "If the colon tube is coiling upon itself, no solution can be forced through

it". This statement is not considered to be accurate, i. e., the colon tube may coil completely within the rectum and still the solution will run freely through it. But if there be a complete "kink" developed, or if the openings, eyes, etc., be obstructed, it then may be impossible to force solution through the said colon tube sustaining such "kink" or block. This, of course, may occur without the knowledge of the operator or the patient.

To maintain the comfort of the patient so far as possible during the colonic irrigation and to enable the operator to immediately discover and correct any stoppage of the colon tube as above mentioned, it may be desirable that the operator shall know the exact amount of pressure developed by the column of solution contained in the supply container and the main artery of supply attached thereto; and also, when the flow of solution is started, the sustained pressure as the solution enters the gut, or the pressure of the back flow acting against the back-stop check. Hence, the present apparatus comprehends means to indicate to the operator these different pressures, as for instance, a suitable pressure gauge, located at a convenient point along the main artery of supply between the back stop check and the colon tube. Such a pressure gauge may indicate what is taking place within this portion of the artery of supply under different conditions, and thus enable the operator to govern his treatment accordingly. Thus, also, any stoppage of the colon tube will be registered by the pressure gauge; and checked up and corrected by the operator; whereas, without such means of check-up said stoppage may continue indefinitely. The various pressures produced at various times during treatment may be indicated upon the dial of the pressure gauge and the operator is thereby enabled to guard against any undue pressure, thereby keeping the patient more comfortable than he otherwise would be, and at the same time enabling

the operator to do more thorough and more scientific work.

Another object of the invention is to provide a portable unit or stand for conveniently supporting the solution jars in an adjusted elevated position and the discharge bottles or containers adjacent the base thereof, the entire unit or stand being movable to enable moving of the same adjacent the table or bed of the patient to be treated.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claim, and are illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevational view of my improved portable colon irrigation apparatus.

Figure 2 is an enlarged vertical sectional view through the check valve.

Figure 3 is an enlarged detail sectional view through one of the solution jars and its support.

Referring to the drawings by reference characters, the numeral 10 designates a portable stand which includes a tubular standard 11 supported upon a base comprising legs 12. Supported between the legs are pans or shelves 13 which support bottles or jars 14, the same being provided with tubes 15 which extend beyond the corks to facilitate the attachment of a tube or hose for a purpose to be presently explained. Mounted on the standard 11 directly above the bottles are guides 16 through which the discharge tube or hose passes. This hose will be more fully described hereinafter.

Telescopically arranged with the standard 11 is a rod 17 which may be raised or lowered to any desired height and held in an adjusted position by a set screw 18 threaded in the top of the standard for clamping engagement with the rod 17. Mounted adjacent the top of the rod 17 is a collar 19 having notches or sockets 20 therein to receive the legs 21 extending from supporting rings 22. These rings support solution jars 23 which taper from top to bottom so as to firmly seat within the rings. The solution jars are adapted to contain a liquid medical solution for the treatment of colonic ailments. A flexible lamp support 24 extends from the top of the rod and carries an electric lamp 25 for illuminating the jars in order to clearly display the amount of the contents in the jar during the administering of a colon irrigation. The wires leading to the socket of the electric lamp may pass upward through the tubular standard 11 and rod 17.

Connected to the bottom of one of the jars is one end of a supply hose 26, the other end being connected to the inlet 27 of a colon

irrigation tube 28 of the construction set forth in my prior Patent #1,211,928. It is not believed necessary to go into the specific structure of the colon tube other than to state that it also includes an outlet 29 to which a drainage tube or flexible hose 30 is connected. Arranged within the discharge tube 30 is a Y-coupling 31 to which a branch flexible tube 32 is connected and which branch tube also connects to a Y-coupling 33 arranged in the inlet tube 26. Control valves 34 and 35 are arranged in the drainage tube and branch tube respectively while a similar valve 36 is arranged in the inlet 26 above the Y-coupling 33. The free end of the drainage tube 30 may be connected to one of the tubes 15 of the bottles 14 when desired to obtain a sample or specimen of the solution, after passage through the colon. This tube 30 may also be connected to any drainage system by which the discharge solution may be carried off. Arranged within an inlet or supply tube 26 is a manually controlled valve 37 adjacent which is a compressible bulb 38 which receives the flow of solution from the jar 23 and upon squeezing of the same, the solution may be discharged through the colon tube under pressure. Disposed below the valve 37 is a check valve 39 which includes a body 40 having a valve seat 41 with which a valve member 42 co-acts. Under normal conditions, the valve member 42 is unseated and the solution from the solution jar 23 is permitted to flow freely to the colon tube or under pressure by the actuation of the bulb 38. In the administering of a colon irrigation, a patient under treatment may develop sufficient pressure within the colon to force the solution backward through the colon tube 28 and inlet 26 which contaminates the main artery of supply and which contamination might cause the transmission of an infection from one patient to another or re-infection of the same patient. However, by the use of the check valve 42 this danger is eliminated as any back pressure in excess of the gravitational flow of the solution through the inlet tube or the flow of the solution under pressure, will cause the valve member 42 to automatically seat upon the valve seat 41, thus checking the back flow and preventing contamination with the source of supply. The bulb 38 and inlet tube between the bulb and the solution jar is also protected against contamination by the aforesaid check valve; the solution remaining in the bulb and tubing thereabove, may after shutting off the tube by the action of the valve 36 and by compressing the bulb, force back and upward toward the supply jar, the remaining column of solution in the tube above the bulb thereby expelling from the tube any air which may have followed the receding solution downward, thus keeping a solid column of solution intact with no possibility of wrongfully introducing any air into the colon.

For the purpose of indicating the temperature of the solution in the solution jars 23, I mount a thermometer 42' to the inner side wall thereof. The thermometer 42' is mounted in position by first roughening the inner surface of the jar by the use of emery paper and applying a relatively thick coating of shellac to the roughened surface. The thermometer 42 passes through a tubular holder sleeve 43, which holder is also given a coating of shellac and while the shellac on the wall and on the holder is in a soft condition, the same acts as an adhesive for the attachment of the holder. When the shellac has dried or set, a coating of waterproof varnish is applied thereover. For preventing the liquid solution in the jar from tending to lift the thermometer due to its buoyancy, I mount a rubber stop collar 44 adjacent the base of the thermometer and which abuts the underside of the holder 43. The holder 43 is of such size to snugly receive the thermometer 42' and frictionally support the same against accidental dropping out. Although I have only shown one of the jars 23 connected with the supply tube, it will be appreciated that a branch tube may lead therefrom to the other jar in cases wherein a large quantity of solution is required in the administering of an irrigation.

By the construction of a portable unit for colon irrigation such as has been herein described, it is possible to move the unit adjacent the body of a patient, or in hospital wards, the same may be moved between two beds and two irrigations given simultaneously by the use of the two elevated solution jars, it being appreciated that two sets of tubes are required.

The hereinbefore described construction admits of considerable modification without departing from the invention; therefore, I do not wish to be limited to the precise arrangements shown and described, which are, as aforesaid, by way of illustration merely. In other words, the scope of protection contemplated is to be taken solely from the appended claim, interpreted as broadly as is consistent with the prior art.

What is claimed as new is:—

A portable irrigation apparatus comprising a container, an irrigation tube, a second tube connecting said container to said irrigation tube, a compressible bulb interposed in said second tube, a manually operable valve between said container and said bulb interposed in said second tube, a second manually operable valve below said bulb and adjacent thereto, said second valve being interposed in said second tube, an automatic valve interposed in said second tube and adapted to prevent a back flow of liquid into said container, a third manually operable valve interposed in said second tube below said automatic valve, a second container, a drainage

tube including a fourth manually operable valve and connected to said irrigation tube and to said second container, and a branch tube including a fifth manually operable valve connected to said second tube and to said drainage tube.

In testimony whereof I hereby affix my signature.

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