July 14, 1931. J. C. BROWN ET AL 1,814,121

MULTIPLE PORT VALVE

Filed Oct. 30, 1929

Fig. 2.

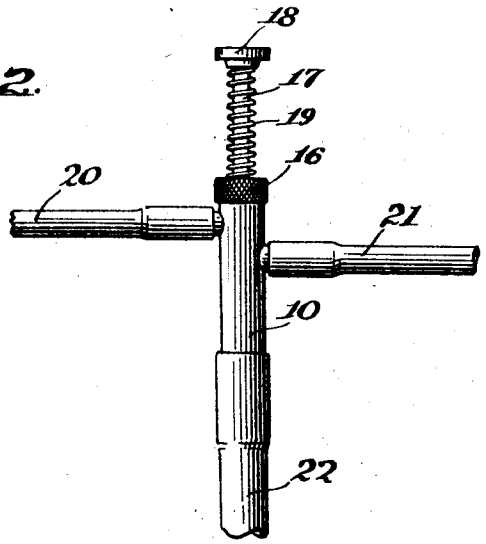
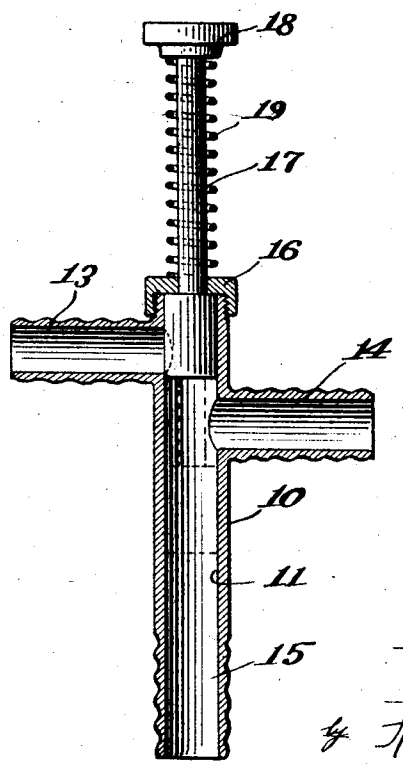


Fig. 1.



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MULTIPLE PORT VALVE

Application filed October 30, 1929. Serial No. 403,485.

This invention relates to a multiple port valve.

An object of the invention is to provide an improved multiple port valve which is of cheap, simple and durable construction, and which is so constructed that two out of a plurality of ports may be placed in communication, closing the remainder, and on operating the valve one of the mentioned two ports may be placed in communication with the remainder and the other of the two ports closed. The improved multiple port valve is primarily designed to be used in a colon irrigation apparatus and in such apparatus it is highly desirable that the passages through the valve be kept as large and unobstructed as possible. The improved valve provides such a construction and also enables the rate of flow through the valve to be controlled or varied.

Another object of the invention is to provide a multiple port valve which can be conveniently operated by the user of the apparatus.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, and specifically pointed out in the appended claim, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Fig. 1 is a vertical section through the improved valve.

Fig. 2 is a view in side elevation of the valve, illustrating the valve as having been installed in the colon irrigation apparatus.

Referring to the accompanying drawings, wherein similar reference characters designate similar parts throughout, the improved valve comprises a cylindrical body 10, which provides a cylinder 11, in which a piston or plunger 12 is reciprocable. A plurality of ports are formed in the body, a first port being indicated at 13. The second port is indicated at 14, and a third port indicated at 15 is located in the end of the body. As clearly shown upon Figure 1, these ports are located at different points along the length of the body. The upper end of the body, which is disposed only a short distance above the first port 13, is closed by a cap 16, through which a stem 17 fastened to the plunger extends. On the upper end of the stem 17 there is a handle 18, and a coil spring 19 is compressed between the handle and the top of the cap 16. The spring urges the plunger 12 into its uppermost position against the bottom of the cap 16, in which position the plunger closes the port 13.

While the improved multiple port valve may be used under a variety of different circumstances and conditions, it has been primarily designed for use in a colon irrigation apparatus. When so employed the first port 13 is connected, as by a flexible hose 20, to a supply tank which is preferably elevated so that the liquid supply will be delivered under gravity. The second port 14 is designed to have a flexible hose 21 attached thereto, which leads to the colon. The third port 15 at the bottom of the body may have a hose 22 connected thereto through which discharge may take place.

In the normal position, shown in Figure 1, the first port 13 is closed and the second and third ports 14 and 15 are in communication. By forcing the plunger 12 downward by the handle 18, compressing the coil spring 19, the first port 13 will first be uncovered or opened. When the plunger is lowered into the dotted line position, shown in Figure 1, the first and second ports 13 and 14 are placed in communication so that liquid may be supplied from the supply tank to the colon. The rate of flow from the supply tank can be controlled or varied by raising the plunger 12 above the dotted line position shown, so as to partially close the second port 14. In this position it will be noted that as the plunger fits the cylinder 11 quite closely, that the outlet port 15 is closed. When it is desired to discharge the contents of the colon, the handle 18 may be released so that the spring returns the plunger into the position shown in Figure 1, thus closing the first port 13 against further supply and allowing fluid to flow reversely through the second port 14 and be discharged through the third port 15. It

will be noted that in this discharging position the passages within the valve are of maximum size and are unobstructed so that solid or semi-solid materials can be carried through the valve quite easily without danger of clogging.

From the above described construction it will be appreciated that a novel, simple and advantageous multiple port valve is provided, having few moving parts, and which cannot be easily clogged, nor get out of order.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claim.

We claim:

A multiple port valve comprising means providing a cylinder; first, second and third ports arranged at different localities along the length of the cylinder, a piston reciprocable in the cylinder, a cap for the end of the cylinder arranged near the first port, a stem on the piston extending through the cap, a handle on the stem, a spring compressed about the stem between the handle and cap urging the piston against the cap, the first port being so arranged near the cap that when the piston is in normal position it will close the first port placing the second and third ports in communication, said piston being movable into a position between the second and third ports to place the first and second ports in communication and close the third port.

In testimony whereof we have signed our names to this specification.

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