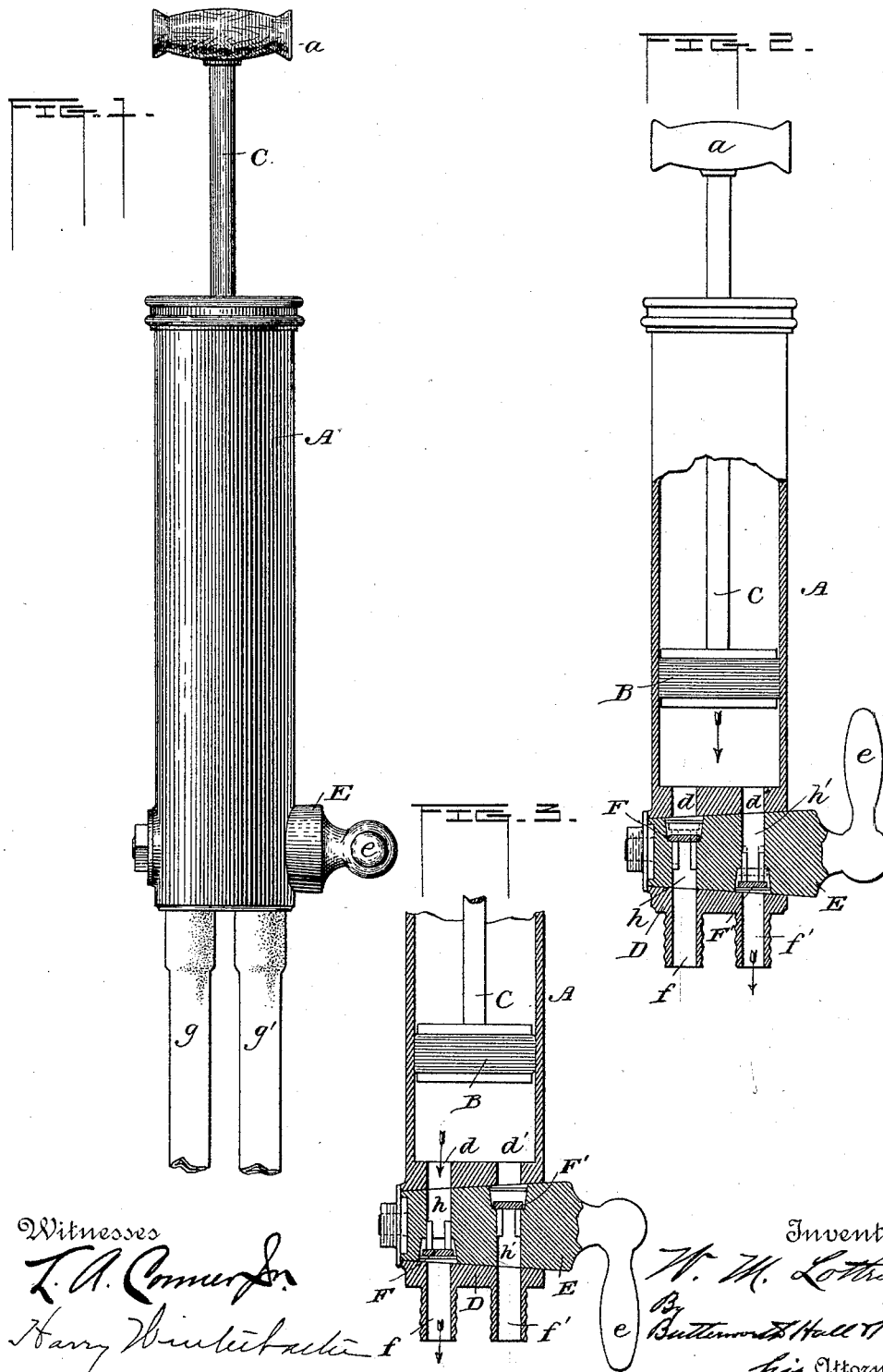


(No Model.)

W. M. LOTTRIDGE.
SURGICAL APPARATUS.

No. 458,774.

Patented Sept. 1, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM M. LOTTRIDGE, OF PORTSMOUTH, OHIO, ASSIGNOR OF ONE-HALF
TO J. E. VALJEAN.

SURGICAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 458,774, dated September 1, 1891.

Application filed March 2, 1891. Serial No. 383,494. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. LOTTRIDGE, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented certain new and useful Improvements in Surgical Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in surgical appliances; and the object is to provide means for pumping out the stomach and cleansing and filling the same without irritating the patient by removing and reinserting the suction or forcing-tubes when it is desired to fill or rinse the stomach after it has been exhausted or cleansed of deleterious substances, or when it is desired to change the operation of expelling from the stomach to that of forcing into the same, or vice versa.

To this end my invention consists in the improved apparatus herein described and the several features of construction, all as hereinafter set forth, and particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference are used to denote like parts of the apparatus, Figure 1 represents a side view of an apparatus embodying my invention; Fig. 2, a partial vertical longitudinal section of the same, and Fig. 3 a similar partial section showing the valves of the reversing device in the opposite position to that shown in Fig. 2.

A denotes a preferably cylindrical or other suitably-shaped pump barrel or cylinder, within which is placed the reciprocating piston or plunger B, provided with a suitable operating-handle, as at *a*, at the end of the attached plunger-rod C. At the lower end of the cylinder is fitted or formed integral therewith a valve chest or casing D, which has a transverse bore or opening to receive a turn-plug or valve containing and reversing device E, which has a suitable thumb lever or handle, as at *e*, by which the plug may be rotated, so as to reverse the positions of the valves seated

therein. The valve-casing D forms the bottom of the pump barrel or cylinder, and the transverse opening therein is preferably conical in shape, so as to receive a correspondingly-shaped turn-plug. The casing is also provided with openings *d d'*, extending vertically through the same across the conical bore in alignment with the nipples *f f'*, to which the elastic tubes *g g'* are removably secured, said nipples being preferably ribbed or corrugated, as shown, to receive the ends of the elastic tubes, which may be sprung over the same in a well-known manner. The turn-plug or valve-reverser E is perforated, as at *h h'*, and in these perforations or openings are seated the puppet-valves F F', which control the openings or valve-ports *h h'*, these ports being adapted to register with the ports or openings *d d'* in the casing when the valves are in either of their operative positions shown in Figs. 2 and 3; but when the reverser E is turned at right angles to the position shown in either of said figures the valve-ports will be closed. The valves F F' are adapted to open in opposite directions, so that the pressure within the cylinder exerted upon the valves, when arranged as shown in Fig. 2, will close the valve-ports at one side of the casing and open the ports at the other side, so that on the upstroke of the piston the suction of the apparatus will cause the reverse movement of the valves opening the previously-closed valve and closing the valve that was previously opened; but in the reversed position of the valves shown in Fig. 3 the operation of the plunger will cause the reverse movement of the valves, opening the valve F' and closing the valve F on the upstroke and closing F' and opening F on the downstroke of the plunger. Thus it will be seen that with the valves in the position shown in Fig. 2, and the tube leading to the nipple and valve *f F* inserted in the throat and stomach of the patient, the contents of the stomach may be exhausted through the tube *g* by the suction of the apparatus on the upstroke of the piston, and then without reversing the valves the contents of the cylinder may be expelled through the valve *h'* and the tube *g'*; but in the reverse position shown in Fig. 3 the suction of the apparatus

may be exerted in filling the cylinder through the tube and valve $g' h'$, and thereupon the contents of the cylinder forced into the stomach through the valve F and tube g , the latter meanwhile remaining inserted in the throat of the patient and during the entire operation without the necessity of removing the same, as has been necessary heretofore when it has been desired to change the operation of expelling from the stomach to that of forcing into the same, and vice versa, which latter practice has proven to be very annoying to patients, and sometimes causing dangerous delay in cases where great rapidity in the process is required.

Another advantage of this apparatus is that if the eye of the tube in the stomach should become clogged while pumping the stomach out the valves may be instantly reversed and the impediment dislodged, whereas with old methods and apparatus it is necessary to remove the tube, and thus occasion loss of invaluable time, which is sometimes followed by serious results.

It is obvious that various modifications may be made in the construction and arrangement of the apparatus without departing from the spirit of my invention, and hence I do not desire to be limited to the exact construction herein shown and described. It will also be apparent that a simple compressible bulb might be substituted for the cylinder and piston with the valve-reversing device properly arranged for operation in connection therewith, and the apparatus may be used with good results in a number of ways, which will readily suggest themselves to physicians and others having occasion to use the same.

I am aware that it has been heretofore proposed to connect the suction and forcing apparatus of a stomach-pump with elastic tubes in such manner that the position of the valves in relation to the tubes may be reversed, and that it has also been proposed to provide the cylinder of a subcutaneous exhaustor with two nozzles and stop-cocks, by which matter

drawn into the pump-barrel may be expelled without withdrawing the exhaust-tube at each stroke of the piston, and hence I make no claim to such constructions broadly; but by my improved apparatus the contents of the stomach or vessel may be drawn into the pump-barrel through one tube and valve and expelled through the other valve or forced back again into the stomach or receptacle through the same tube and valve by simply inverting the valves, and these several operations may be performed with greater rapidity and without the loss of time and danger to the patient incident to the use of devices of this character constructed as heretofore proposed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A surgical device comprising an exhausting and forcing apparatus provided with a valve chest or casing having suitable inlet and outlet ports, a valve-reversing device fitted in said chest, and oppositely-working valves seated in said reversing device in openings which register with said inlet and outlet ports, whereby the valves may be reversed, so as to convert either valve into an inlet or exhaust valve at will, substantially as described.

2. In combination with the exhausting and forcing apparatus having a valve chest or casing provided with suitable inlet and outlet ports, a rotary valve-reversing device or turn-plug provided with oppositely-working valves seated therein in openings which register with said inlet and outlet ports, and a suitable operating-handle whereby the reversing device may be rotated to reverse the valves, so as to fill or exhaust the pump-barrel through either valve, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

W. M. LOTTRIDGE.

Witnesses:

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