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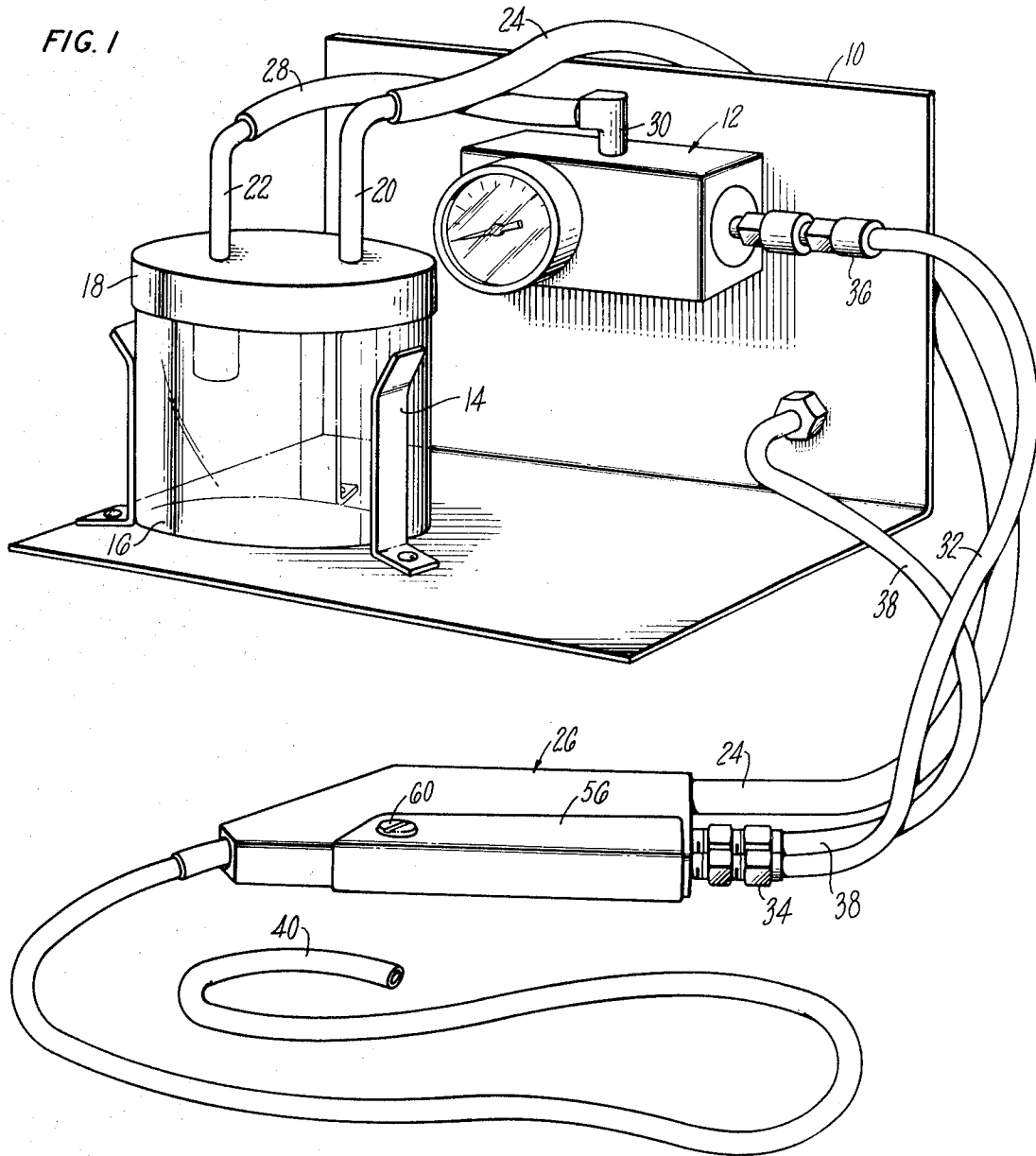
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3,516,405

ASPIRATOR AND CONTROL THEREFOR

Filed June 20, 1967

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

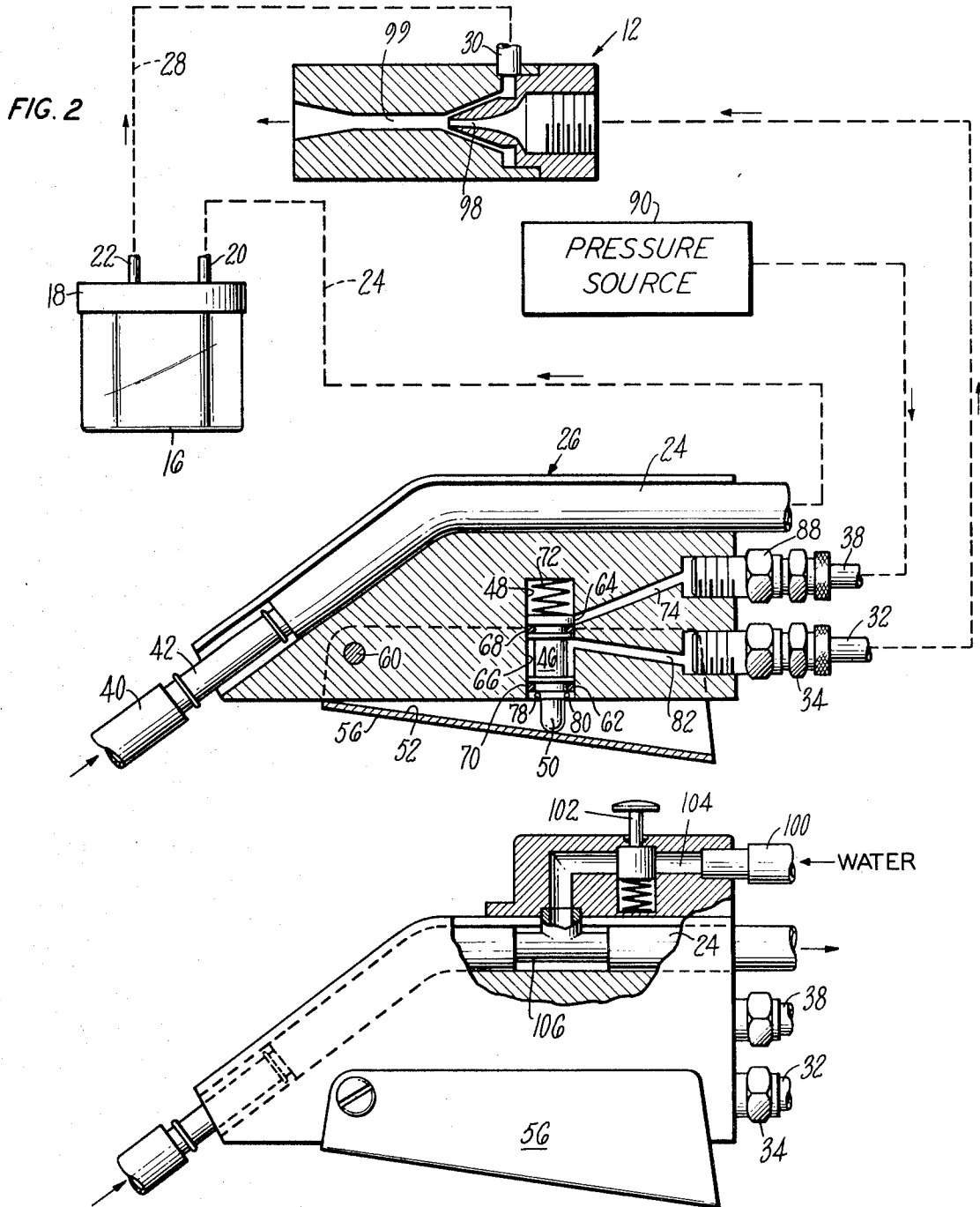


FIG. 3

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## ASPIRATOR AND CONTROL THEREFOR

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7 Claims

### ABSTRACT OF THE DISCLOSURE

A flexible tube having one end adapted to receive a catheter to be inserted into a patient for removal of fluids and the other end connected to a container is discretely mounted on a handle containing the pumping controls. Flow lines to a pressure source and an aspirator are connected to a valve mounted in the handle and a retractable trigger member operatively connected to the handle allows an operator to conveniently operate the aspirator. Another valve mounted in the handle with a releaseably mounted plunger valve connects a water line to the tube for purging the tube as desired.

### BACKGROUND OF THE INVENTION

This invention relates to an aspirator pump and more particularly to means for conveniently effectuating control thereof. While aspirators and suction pumps have been employed for removal of body fluids such as pus, gastric fluids, etc., the heretofore types have been cumbersome to operate and not completely portable. For example, when used for pumping out the fluids in a patient's stomach, such heretofore known devices have normally required the assistance of two operators. The catheter which is orally inserted into the patient was usually held by one of the operators while the other operator would, by some manual control, turn on and off the power source. The fluid in the stomach passing through the catheter and tube is extremely viscous necessitating the frequent removal for soaking it in a container of water to clean out the lines. I have obviated these problems by mounting the controls in a gun-like control handle whereby a single operator can effectively effectuate pumping of one's stomach. The control handle carries a trigger-like member which operates a releaseably mounted valve which not only turns on the power source to the aspirator but also allows the operator to modulate the valve so as to control the rate of emission from the stomach. A second valve mounted on the handle permits water to pass from the tube to the collection bottle for purging the same. In this arrangement the water is only turned on when the aspirator is connected to the power source, thus removing the possibility of having water enter into the catheter and patient's stomach. The unit can be carried on a movable table or cart which may also contain the power source which is generally a bottle of pressurized oxygen.

### SUMMARY OF THE INVENTION

A primary object of the present invention is to provide an improved aspirator and control therefor.

In accordance with the present invention, a releaseably mounted handle controls a valve for connecting the power source to the aspirator and may modulate the flow thereto.

A still further object of this invention is to provide a depressible valve which connects the pumping tube to water for purging the same.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view in perspective illustrating the overall configuration of this apparatus;

FIG. 2 is a view partly in schematic and partly in section illustrating the details of this invention; and

FIG. 3 is an elevated view partly in section illustrating the purging feature of this invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference is now made to FIGS. 1 and 2 showing the aspirator and control handle adapted to be carried on a movable cart. The unit is carried by a sheet metal or plastic platform generally illustrated by numeral 10 having suitably mounted thereto aspirator 12 and upstanding thong members 14 adapted to receive a suitable fluid receiving container 16. A suitable tight fitting cap 18 fits over the top of a container and carries openings for receiving pipes 20 and 22. Pipe 20 is connected to a flexible tube 24 having its opposite end fitted into handle 26. Flexible tube 28 is connected to pipe member 22 and is suitably connected to aspirator 12 by the connector 30. Flexible tube 32 suitably joined to the handle by connector 34 and joined to the aspirator by connector 36 and flexible tube 38 suitably connected to the handle 26 and the power source, not shown, constitute the major parts of this apparatus. The catheter 40 connects to the pumping tube 24 by a straight-through connector 42.

As can best be seen by FIG. 2, the pumping tube 24 snugly fits into a channel formed in the handle. Valve 46 snugly fits into bore 48 formed in the handle and carries plunger 50 adapted to engage the inner surface 52 of trigger 56. Trigger 56 is substantially an elongated channel member which in cross section is U-shaped and is pivotally mounted to handle 26 by a suitable pivot member 60. Valve 46 carries a pair of annular spaced lands 62 and 64 defining therebetween an annular recessed portion 66. Grooves adjacent the annular lands 64 and 62 are adapted to receive O-rings 68 and 70. A spring 72 mounted at one end of valve 46 urges the valve in the position shown in FIG. 2 noting that the width of land 64 is sufficiently wide to block the opening formed by drill passage 74. The valve is prevented from moving further outwardly by a pair of pins 78 and 80. A second drilled passage 82 communicates with the annular space 66 and tube 32 which is suitably connected thereto by the connector 34. A similar connector 88 connects tube 38 with the pressurized source, shown in schematic as a blank box 90 which may be an oxygen bottle. Depression of trigger 56 causes the plunger 50 to move the valve 46 in opposition to spring 72 which moves land 64 away from opening formed at the end of the drill connection 74. This communicates passages 74 and 72 and the annular section 66. In this manner the pressure source 90 is connected directly to the aspirator 12. When this occurs, high pressure fluid passing through the orifice 98, restriction 99 and into ambient serves to suck out the air in the container through line 24 for creating a vacuum therein. This essentially causes flow through tube 24 and the catheter 40 for removing the fluid in the patient's cavity. Modulation of the flow can be effectuated by the discrete positioning of land 64 relative to the orifice adjacent thereto formed at the end of drilled passage 74.

Line 100 suitably connected to a water source, as shown in FIG. 3, is used to purge the pumping line 24 and is placed in operation by depressing spring loaded valve 102 to open drilled line 104 which is connected to tube 24 by the T-connector 106. It will be appreciated that water can only be injected into the system when both trigger 56 and plunger 102 are depressed. Water then is sucked into line 24 from the T-connection 106 through the container

3

16 obviating the necessity of dunking the entire unit into water.

It should be understood that the invention is not limited to the particular embodiments shown and described herein, but that various changes and modifications may be made without departing from the spirit or scope of this novel concept.

I claim:

1. Medical apparatus including a handle for a jet pump adapted to evacuate a container for sucking fluid therein, comprising in combination

a releasably mounted trigger on said handle, fluid connection means from a source of pressurized fluid to the jet pump,

valve means in said handle engaging said trigger and normally blocking off flow of said pressurized fluid but connecting said jet pump and said source upon depression of said trigger,

a flexible suction tube connected to said handle communicating with said container, and purging means on said handle communicating said flexible tube with a source of cleaning fluid.

2. Medical apparatus as claimed in claim 1 wherein said purging means includes a cleaning fluid flow passage, a valve mounted in said handle and communicating with said cleaning fluid flow passage, and operable means connected to said valve external of said handle adapted to be engaged by the operator thereof.

3. Medical apparatus as claimed in claim 2 wherein said purging means includes a flexible purging tube connected to said valve means, said valve means normally in a closed position and adapted to communicate said flexible suction tube with said flexible purging tube to lead cleansing fluid through said suction tube commencing from said handle to said container.

4. Medical apparatus for pumping the stomach of a patient including a jet pump adapted to evacuate a container for sucking into and collecting of the pumped contents,

a handle, a tube supported in said handle having one end adapted to connect to a pumping catheter and the other end connected to the container,

a releasably mounted trigger on said handle, fluid connection means also supported in said handle and connecting a source of pressurized fluid to said jet pump,

4

valve means in said handle engaging said trigger and normally blocking off flow of said pressurized fluid but connecting said jet pump and said source upon depression of said trigger such that stomach contents are evacuated into the container through said tube and by passing said fluid connection means, said tube and said fluid connection means being separately disposed relative to each other such that the pressurized fluid from said source passes solely through said fluid connection means and said jet pump and said stomach contents passes solely through said tube.

5. Medical apparatus as claimed in claim 4 wherein said valve means including a spool element having spaced lands mounted in an extended bore closed on one end in said handle,

drilled passage means extending through said handle and adapted to communicate the bore and said fluid passage means, and registering with at least one of said lands,

the width of said land adjacent said drilled passage means being substantially equal to the diameter of said drilled passage means.

6. Medical apparatus as claimed in claim 5 including resilient means in said bore between the end of said spool element and the closed end of the bore.

7. Medical apparatus as claimed in claim 5 wherein said trigger includes a U-shaped channel member pivotally mounted to said handle having the bottom surface of the U-shaped portion engaging said spool element.

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