Nov. 21, 1933. A. E. MUELLER 1,936,405

PORTABLE THERAPEUTIC APPARATUS

Filed Dec. 4, 1930 3 Sheets-Sheet 1

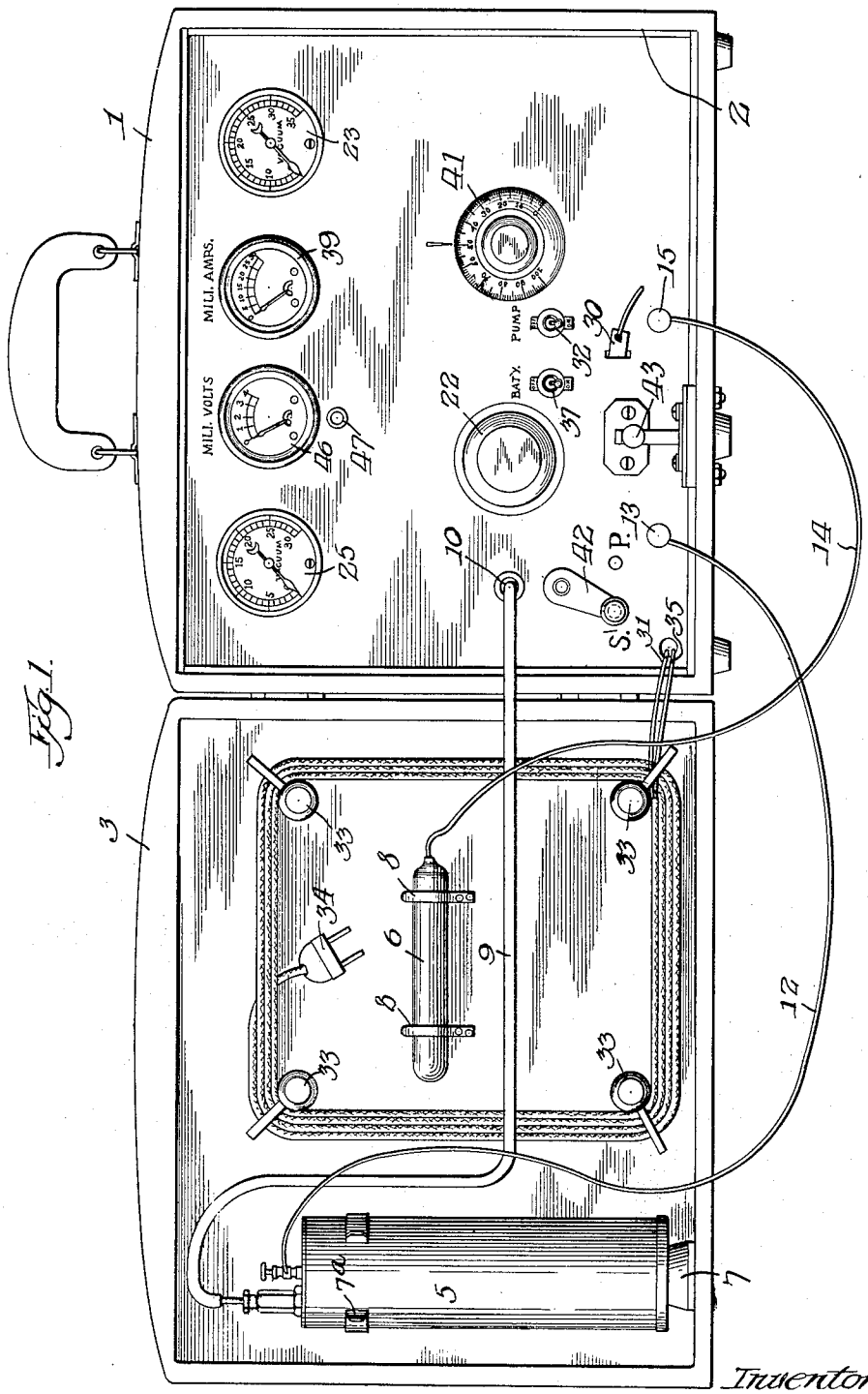


Fig. 1.

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PORTABLE THERAPEUTIC APPARATUS

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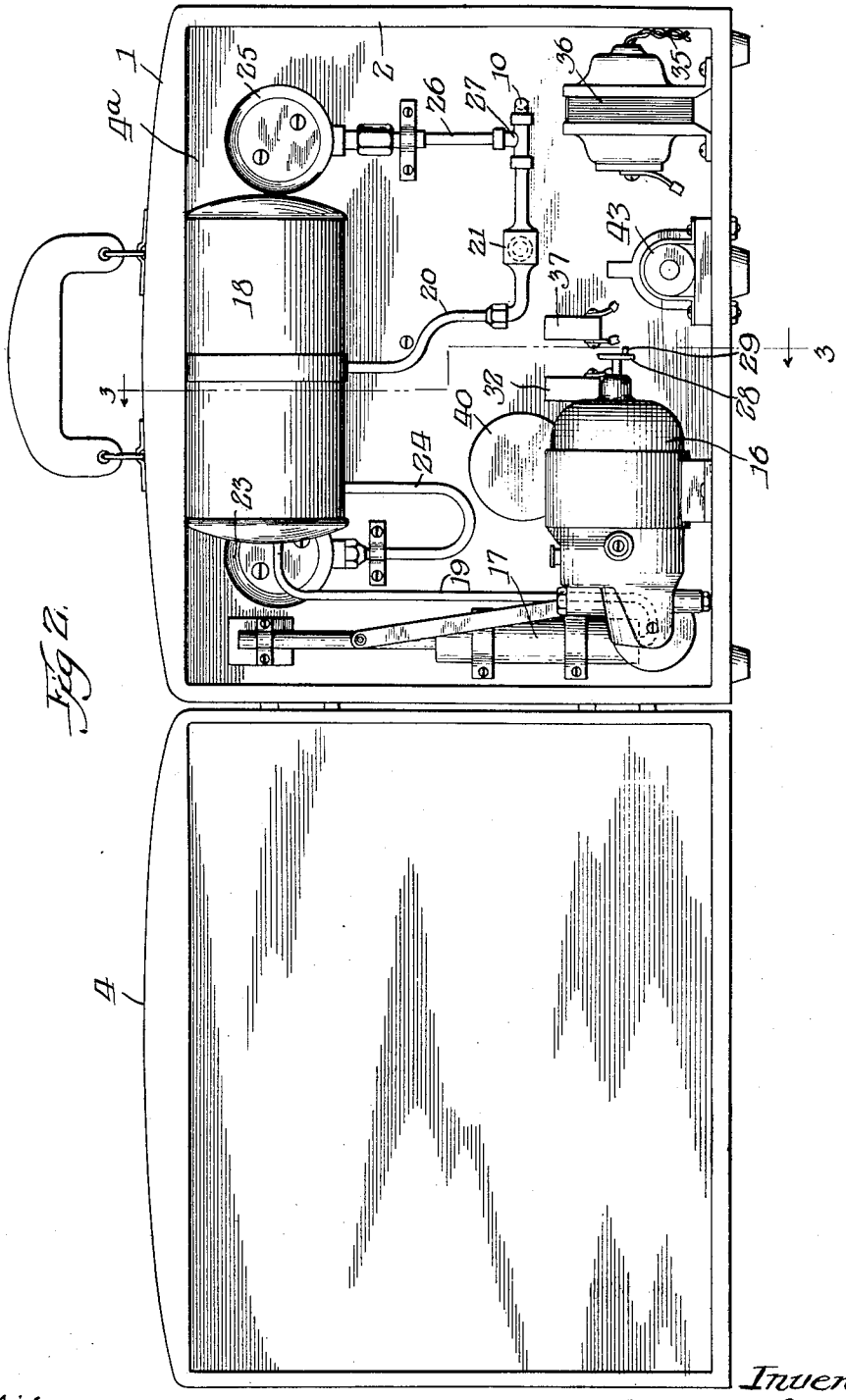


Fig 2.

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Fig 4.

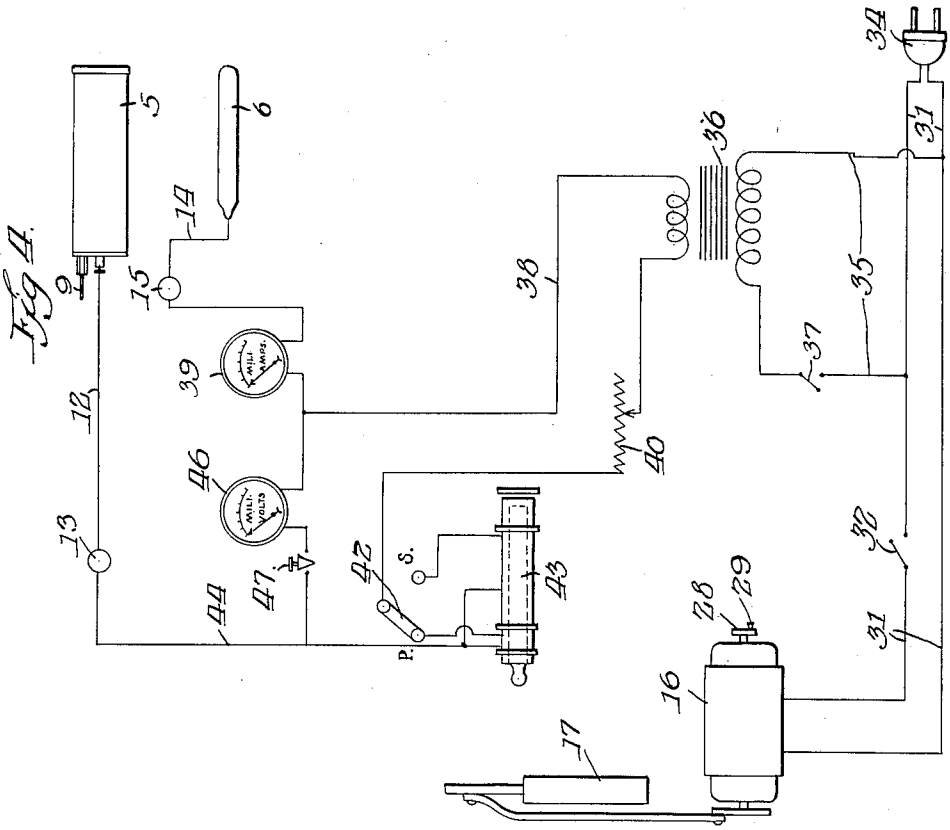
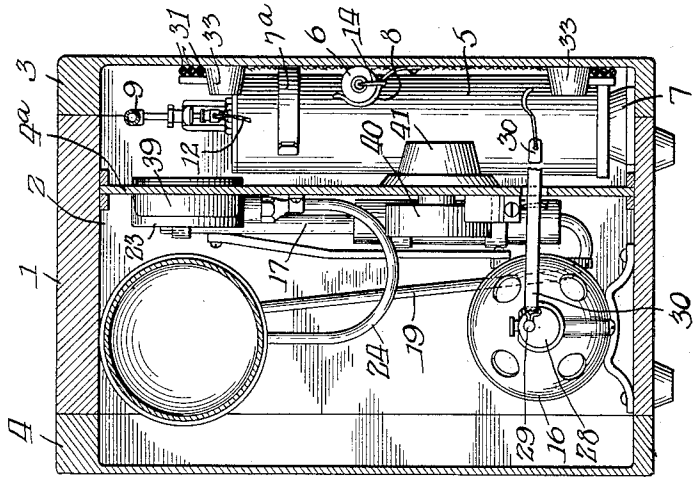


Fig 3.



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UNITED STATES PATENT OFFICE

1,936,405

PORTABLE THERAPEUTIC APPARATUS

Augusto E. Mueller, Chicago, Ill.

Application December 4, 1930. Serial No. 499,895

4 Claims. (Cl. 174—177)

This invention pertains to an apparatus for treating the blood and certain organs of the human body for the purpose of promoting a healthy condition. Its principal purpose is the provision of a self-contained portable therapeutic device which will permit of home use of the apparatus shown, described and generically claimed in my co-pending application Ser. No. 499,251, filed December 1, 1930 and includes certain improvements thereon.

It is an object, therefore, of this invention to provide a portable apparatus comprising a single container within which is mounted a device of the type shown and described in my above mentioned application and within which is also mounted the necessary auxiliary equipment for using said device.

In accordance with my invention a portable cabinet is provided within which is mounted a suitable suction apparatus including a vacuum pump, vacuum tank and a pump motor. The necessary electrical devices which will permit the utilization of the ordinary house current as a source of electrical energy for the completed apparatus is also housed within the cabinet. The necessary control mechanisms are also included within the cabinet and are supported upon a panel within convenient reach of the user.

A better understanding of my invention will be had from a consideration of the following description given in connection with the drawings in which:

Fig. 1 is a front elevation of the portable apparatus, with the front door of the cabinet open;

Fig. 2 is a rear elevation of the same apparatus with the rear door open;

Fig. 3 is a section taken on line 3—3 of Fig. 2 with both doors closed; and

Fig. 4 is a diagrammatic showing of the electrical elements and their respective connections.

Referring to the drawings and more particularly to Figures 1 to 3 inclusive, it will be seen that the entire apparatus and auxiliary devices are housed within a portable case or container 1 having a main or center section 2, a front door 3 and a rear door 4.

The front door serves as a container for the body contact members and electrical connections, whereas the center section which is divided by a panel serves as a housing for the auxiliary and control apparatus the former of which is made accessible by opening the rear door and the latter by opening the front door, as can be seen from Figure 2.

The center or main section of the portable cabinet is provided with a panel 4^a which is set back from the front edge of the cabinet and serves as a support for the necessary instruments, control switches and control valves.

As stated in my prior application the body contact members comprise a tubular member 5 which is adapted to be inserted over a projecting part of the anatomy and a cylindrical member 6 which is adapted to be inserted in the rectal column. Both of the members 5 and 6 contain some radium bearing material and means for producing magnetic lines of force. These members also constitute electrical contacts for passing currents through the body. The member 5 is removably secured to the inner side of the front door by means of a plug 7 and a clip 7^a. The member 6 is also secured to the door by means of clips 8. Means are provided for creating a partial vacuum within the tube when it is applied to the body for which purpose a rubber tube 9, which leads to a connection 10 on panel 4^a, is connected thereto.

Member 5 is provided with an electric conductor 12 which connects to a terminal 13 upon panel 4^a. Member 6 is provided with a conductor 14 leading to a terminal 15 upon panel 4^a.

Within the center section and behind panel 4^a is mounted the apparatus for producing the necessary vacuum in the contact member 5. This apparatus includes a relatively small high speed electric motor 16 which actuates the vacuum pump 17 which is connected to a vacuum tank 18 by a tube 19. From tank 18 the suction line continues through tube 20 to a valve 21 controlled by a knob 22 on the front of panel 4^a. The valve is connected to connection 10 which extends to the front of the panel and to which the tube 9 is attached. A gauge 23 is connected by a pipe 24 to the tank to indicate the amount of vacuum therein whereas a second gauge 25 is connected to the connection 10 through a pipe 26 and T 27. The latter gauge will indicate the degree of vacuum within member 5.

The pump motor is also used to impart vibrations to member 5 and for this purpose has secured to one end of the shaft a disc 28. A pin 29 is secured to the disc off center thereof and to which may be attached one end of a tape 30 the other end of which may be tied to member 5 to impart thereto high frequency oscillations of small amplitude.

The wires 31 for supplying current to the motor 16 and to the contact members 5 and 6 are brought through the lower corner of the panel, connected to a switch 32 and then to motor 16. When not in use the wires may be wound around suitable supports 33 upon the inner side of the front door. The wires terminate in a standard connecting plug 34.

The source of electrical energy for energizing the electromagnets within the members 5 and 6 and for transformation into the low currents that are to be transmitted through the body are brought in through a pair of wires 35 attached to the common plug 34. The wires 35 pass through

the panel and are connected to the primary of a step down transformer 36 through a switch 37 operable from the front of panel 4a.

One side of the secondary of the transformer is connected to the member 6 through a wire 38 leading to terminal 15 and including a milli-ammeter 39.

The other side of the secondary of the transformer is connected to a variable resistance 40 which is controlled by a knob 41 upon the front of the panel and from there to a selective single pole double throw switch 42 by means of which the current may be made to pass through either the secondary or primary windings of an adjustable induction coil 43. The other terminal of the induction coil 43 is connected through a conductor 44 to terminal 13, the latter being upon the front face of the panel and to which the member 5 may be secured through the medium of an electric cord 12.

In order to determine the voltage applied between the members 5 and 6 a milli-volt meter 46 is connected there-across through a switch 47 in the usual manner.

It is apparent from the foregoing that there is provided a self-contained compact portable apparatus which includes all of the elements and auxiliary devices necessary for a complete home treatment. In operation it is merely necessary to connect the plug 34 to a suitable source of current such as the average house lighting circuit and apply the contact members to the body in the manner as described in my prior application. The proper amount of suction may be adjusted through the medium of valve 21 controlled by knob 22 and the electrical energy may be controlled by rheostat 40, adjustable induction coil 43 which in turn may be varied by switch 42. The current and voltage may be read at will by means of the two meters and adjustments may be made to suit the proper value for the treatment being given.

It is obvious that many changes may be made in the details of construction and arrangement without departing from the spirit and scope of this invention as defined in the appended claims. It is also apparent that although the described embodiment of this invention is intended for use with alternating current, direct current may be used with suitable elements substituted for the transformer 32. Alternating current is preferred in view of the fact that no galvanic or electrolytic action is likely to take place at the points of contact of the elements 5 and 6 with the body.

I claim:

1. A self-contained portable therapeutic device comprising in combination a portable cabinet, a partition dividing said cabinet into two compartments, a tubular element removably secured within one of said compartments and adapted to engage a portion of the human anatomy, means for applying a partial vacuum to the interior of said element, said means comprising a vacuum pump, a motor for operating the same, a vacuum tank, said pump, motor and tank being secured within the other compartment of said cabinet, a suction line extending through said partition to said tubular element, means for conducting an electrical current to said tubular element, said latter means including an induction coil mounted within said cabinet in said latter compartment, a connection from said induction coil to the exterior of said cabinet and adapted to be connected to a source of electrical supply, and a connection extending through said partition from said induction coil to said tubular element.

2. A self-contained portable therapeutic device comprising in combination a portable cabinet, a partition dividing said cabinet into two compartments, a tubular element removably secured within one of said compartments and adapted to engage a portion of the human anatomy, a second body contact element removably secured within said compartment, means for applying a partial vacuum to the interior of said vacuum element, said means comprising a vacuum pump, a motor for operating the same, a vacuum tank, said pump, motor and tank being secured within the other compartment of said cabinet, a suction line extending through said panel to said tubular element, means for conducting an electrical current to said elements.

3. A self-contained portable therapeutic device comprising in combination a portable cabinet, a partition dividing said cabinet into two compartments, a tubular element removably secured within one of said compartments and adapted to engage a portion of the human anatomy, a second body contact element removably secured within said compartment, means for applying a partial vacuum to the interior of said vacuum element, said means comprising a vacuum pump, a motor for operating the same, a vacuum tank, said pump, motor and tank being secured within the other compartment of said cabinet, a suction line extending through said panel to said tubular element, means for conducting an electrical current to said elements, said latter means including an induction coil mounted within said cabinet in said latter compartment, a connection from said induction coil to the exterior of said cabinet and adapted to be connected to a source of electrical supply, and a connection extending through said partition from said induction coil to said tubular element.

4. A self-contained portable therapeutic device comprising in combination a portable cabinet, a partition dividing said cabinet into two compartments, a tubular element removably secured within one of said compartments and adapted to engage a portion of the human anatomy, a second body contact element removably secured within said compartment, means for applying a partial vacuum to the interior of said vacuum element, said means comprising a vacuum pump, a motor for operating the same, a vacuum tank, said pump, motor and tank being secured within the other compartment of said cabinet, a suction line extending through said partition to said tubular element, means for conducting an electrical current to said elements, said latter means including a transformer and an induction coil mounted within said cabinet in said latter compartment, a connection from said transformer to the exterior of said cabinet and adapted to be connected to a source of electrical supply, a connection extending through said partition from said induction coil to said tubular element, and a connection from said transformer to said cylindrical member.

AUGUSTO E. MUELLER.