Jan. 26, 1954 J. C. HALLISEY 2,667,397

PORTABLE INHALATOR

Filed Sept. 28, 1948 2 Sheets-Sheet 1

Fig. 1.

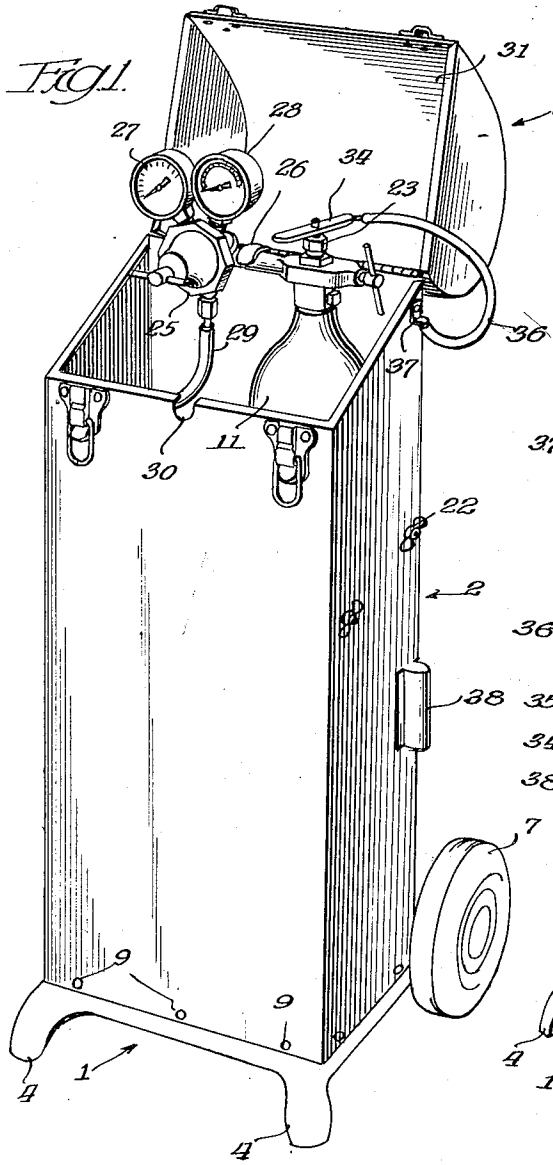
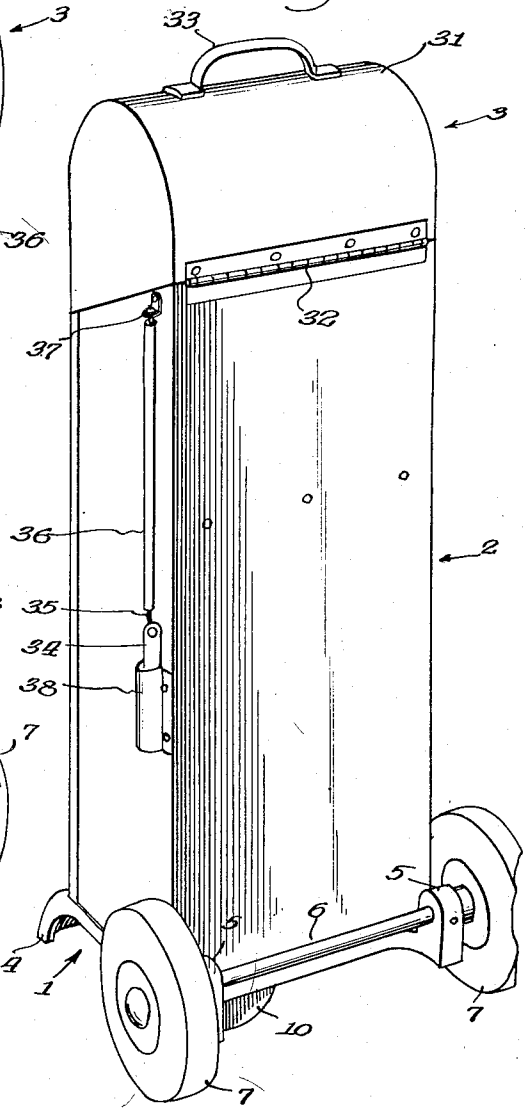


Fig. 2.



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Fig 3

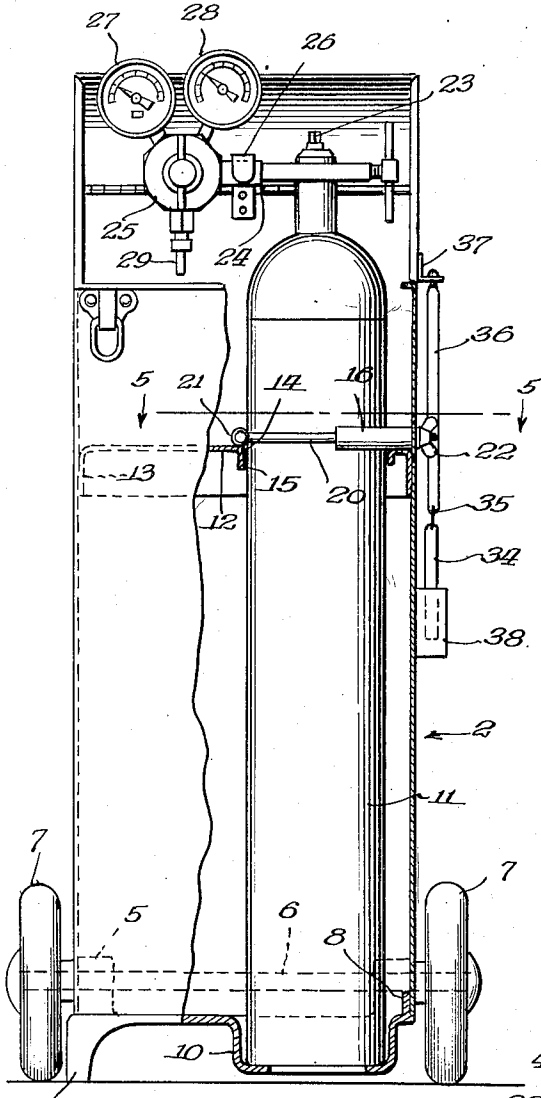


Fig 4

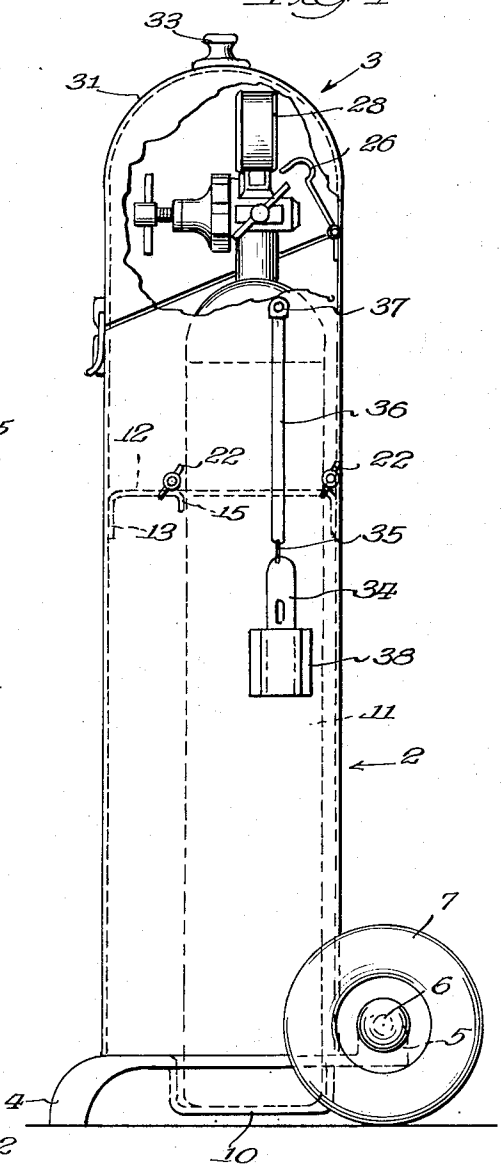
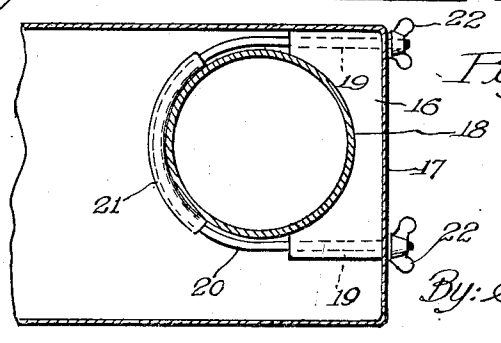


Fig 5



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UNITED STATES PATENT OFFICE

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PORTABLE INHALATOR

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Application September 28, 1948, Serial No. 51,602

1 Claim. (Cl. 312—250)

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This invention relates in general to portable inhalator units particularly useful in emergencies. While the primary use is intended to be medical, the invention resides in the structural details hereinafter pointed out and is susceptible for use for other purposes as well.

The primary object of the invention is to provide a portable unit of light construction and easily transported wherein a cylinder or tank of fluid suitable for medical purposes, such as oxygen, carbon dioxide, and the like, is adapted to be supported.

Another object of the invention is to provide a portable inhalator unit wherein a case or cabinet structure is mounted on a base having supporting legs at one side thereof and wheels at the other side so that the entire unit may be easily transported from place to place and yet may be set up and remain stationary when in use.

A further object of the invention is to provide a portable inhalator unit wherein a cabinet structure encloses a cylinder or a tank of fluid such as oxygen or carbon dioxide and wherein the cabinet has a removable closure member at the top thereof which may be opened to permit free access to the shut-off and regulator valves and yet which may remain in closed position during the use of the unit so as to thereby present a neat appearance externally.

Still another object of the invention is to provide a portable inhalator unit easily transported and wherein the hose connection and mouthpiece to the fluid cylinder or tank may extend outwardly through an opening in the cabinet so that the closure member in the top thereof may remain closed when the unit is being used, such opening preferably being an inwardly extending recess from the upper edge at one side of the cabinet so that the hose may be removed therefrom and stored within the cabinet when the unit is not in use.

A still further and more specific object of the invention is to provide a portable inhalator unit wherein the base is preferably formed of cast aluminum with two legs at the front corner thereof and two wheels at the rear corner so that the unit may be easily transported and yet may remain stationary when in use. The cast base may also preferably be provided with an upstanding flange or supports for the purpose of attaching the bottom of the cabinet thereto.

Still another and specific object of the invention is to provide a portable inhalator unit easily transported wherein the hose for delivering the oxygen or other filuid is fastened to the bottom

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of the regulator or in such other position as may be convenient and then have the mouthpiece attached thereto and be conveniently stored within the cabinet by means of a bracket or spring clip.

Still another object is to provide a portable inhalator unit having a gaseous fluid storage tank enclosed within a cabinet and wherein the key for opening the valve to the fluid tank may be conveniently suspended on the outside of the cabinet to thereby be readily accessible for use at all times.

A still further object is to provide a portable inhalator unit wherein novel means are provided to support and hold the gaseous fluid storage tank within a cabinet, such means including a recess formed integrally with the bottom of a cast base and an additional shelf means within the cabinet and intermediate the ends of the tank which shelf has an opening therethrough with downwardly flanged edges adapted to receive the tank and thus aid in centering and holding the tank in an upright position.

Still another object is to provide a novel form of fastening means for the tank within the cabinet which embodies a U-shaped bolt having the ends thereof extending through a supporting bracket and one wall of the cabinet. The curved portion of such U-bolt being preferably covered with rubber or like flexible material to thereby prevent movement of the tank within the cabinet and to hold the tank rigidly in its upright position.

A still further and more specific object of the invention is to provide a shelf intermediate the ends of the tank within the cabinet of a portable inhalator unit which shelf serves the dual purpose of centering and supporting the tank and at the same time providing a surface for storing apparatus such as the hose, mouthpiece, and other medical items.

Other objects and advantages of the invention will become apparent upon reading the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a perspective view of a preferred form of the invention illustrating the top closure member in open position;

Fig. 2 is a perspective view of the unit from the rear thereof and showing the top closure member in closed position;

Fig. 3 is a front elevational view with parts broken away and partly in section to show certain details of construction and arrangement;

Fig. 4 is a side elevational view of the unit showing a part of the cabinet broken away and

showing the interior thereof when the closure member is in closed position; and

Fig. 5 is a fragmentary horizontal sectional view taken along the line 5—5 of Fig. 3.

Referring now more particularly to the drawings, the preferred form of the unit embodies a base 1, a case or cabinet 2, and a top or closure member 3. In the present instance, the top 3 is illustrated as being hinged to the rear upper edge of the cabinet 2 although other specific forms and arrangement for the top closure member may be used if found more convenient.

The base 1 is preferably, though not necessarily, formed of cast aluminum which makes the base very light and yet sufficiently strong and rigid for the purpose of supporting the cabinet and the oxygen tank therein. The base 1 is preferably formed with a pair of spaced downwardly extending legs 4 at the front corners thereof and with spaced upwardly extending bearing members 5 at the rear corners thereof. A shaft 6 extends between and is journaled within these bearings 5 and has a pair of wheels 7 mounted at each end thereof. These wheels are preferably covered with a rubber tire so that the entire unit can be moved noiselessly.

An upstanding flange 8 (Fig. 3) may be formed around and adjacent the peripheral edge of the base so that the bottom edge of the cabinet 2 may be placed around the flange and secured thereto by suitable means such as rivets or screws 9.

The base 1 is also provided with an integrally cast downwardly extending recess member 10 which is adapted to receive and support the upwardly extending oxygen or other fluid tank 11.

A shelf 12 is secured to the inner surface of the cabinet 2 and is located intermediate the ends of the tank 11. This shelf 12 preferably embodies a downwardly extending peripheral flange 13 which may be welded or otherwise suitably secured to the inner surface of the walls of the cabinet 1. A circular opening 14 is located at one side of the shelf 12 and is adapted to be in vertical alignment with the recess 10 in the base and is of such size as to receive the tank 11 therein. The edges of the opening 14 are preferably flanged downwardly as at 15 to thereby provide a greater bearing surface for the tank against the edges of the opening 14.

Additional holding means in the form of a bracket 16 (Fig. 5) is provided which has an elongated straight side 17 adapted to bear against one wall of the cabinet 2 and at the opposite side of which has an arcuate recess 18 of substantially the same radius as the tank 11 so that the tank may thus fit snugly in said recess 18. Each end of the support or block 16 has an opening 19 therethrough which openings 19 are adapted to receive the ends of a U-shaped retaining member or bolt 20. The radius of curvature of the curved portion of the bolt 20 is substantially the same as the radius of the tank 11 so that said curved portion may fit snugly against the side of the tank opposite the block 16. In order to prevent slipping and to insure a tight retention of the tank 11, the intermediate curved portion of the holding bolt 20 is provided with a rubber or other flexible or resilient covering 21. The block 16 may be positioned immediately above the shelf 12 between the tank 11 and the adjacent side wall of the cabinet 2. The ends of the bolt 20 may extend through the openings 19 in the block 16 and have suitable nuts 22 threadedly engage the

threaded ends of the bolt 20. After the tank 11 has been disposed within the cabinet 2 so that the bottom end thereof rests in the recess 10 of the base and the intermediate portion thereof is held centered by the opening 14 in the shelf 12, the bolt 20 may be inserted through the openings in the block 16 and the nuts 22 may be tightened to thereby rigidly retain the tank 11 against movement.

The upper part of the tank 11 may be provided with a valve 23 the upper end of which has a configuration suitable to be engaged by a key for releasing the pressure within the tank. A suitable conduit 24 extends outwardly from one side of the valve 23 and permits flow of the oxygen or other gaseous fluid to a regulator valve 25. A suitable clamp bracket 26 may be secured pivotally to the rear wall of the cabinet 2 and has a hook shaped outer end adapted to engage the conduit 24 and thus prevent displacement thereof. Two indicators or gauges are preferably connected to the regulator valve 25, one of these gauges 27 being adapted to indicate liter flow of the gaseous fluid and the other gauge 28 being adapted to indicate the pressure of the gaseous fluid leaving the tank 11. A flexible hose or conduit 29 is connected at a suitable location to the regulator valve 25 and in the preferred embodiment disclosed herein, this flexible hose 29 is connected to the bottom of said regulator valve. The hose 29 may be of any suitable or desired length so that it may be removed from the inside of the cabinet and will reach the person or object to which the gaseous fluid is to be delivered. The outer end of the hose 29 may be provided with the usual and customary form of mouthpiece (not shown) so that the oxygen or other fluid in tank 11 may be properly delivered.

The shelf 12 may support the outer end of the hose 29 and the mouthpiece attached thereto; and if desired, a suitable form of spring clasp or clamp may be applied to the shelf or to a wall of the cabinet so that the mouthpiece and hose may be supported therein and thereby be prevented from jarring or moving within the cabinet.

The upper edge of the front wall of the cabinet 2 is preferably provided with an inwardly or downwardly extending recess 30 open at its upper end and of a size which will accommodate the hose 29. Thus, the unit may be used after the valves have been regulated and with the top closure member in closed position.

The top closure member 3 may consist preferably of an upwardly extending and arcuately shaped body 31 provided along its rear edge with a hinge 32 so that it may be pivotally secured to the rear edge of the cabinet 2. The top may also have a handle 33 of any suitable form adapted to be clasped to open the top closure member 3. The top is preferably formed in this manner for the reason that the regulating valves may be easily accessible from outside of the cabinet with the top open so that when the top is not in closed position, the various valves and the upper end of the tank 11 will extend upwardly a considerable distance beyond the open upper end of the cabinet 2. These members, however, must be completely enclosed when the top is down; and, therefore, the upwardly extending arcuate portion of the top is necessary.

The main valve 23 for the tank 11 must have a suitable key for opening the valve which key must be readily accessible at all times. For this reason, the key 34 is attached at one end thereof

to a chain or other flexible supporting means 35 which is also covered with rubber or other suitable flexible and resilient material 36 so as to prevent any movement of the chain from becoming noisy. The upper end of the chain 35 is preferably secured to an angle member 37 riveted or otherwise secured adjacent the upper part of the cabinet 2 on one of the side walls thereof. A small closure and retaining member 38 is also riveted or otherwise secured to the wall of the cabinet and is adapted to have the key 34 be suspended therein so as to confine the key and prevent any swinging movement thereof while the unit is being transported and which at the same time will retain the key so that it may always be accessible for use.

In actual use and in an emergency, assuming the tank 11 to contain oxygen to be ministered to an injured person, the unit may be easily transported to the desired place by reason of the wheels 7 and may be set up in such place by resting on the forward legs 4. The top may be immediately opened and the key 34 is easily accessible so that the valve 23 may be opened and the regulator 25 may be adjusted. The next step in the use of the unit is to release the mouthpiece and hose 29 which may be allowed to rest within the recess or opening 30 and the top may then be closed. It will thus be evident that the invention provides a novel form of portable inhalator unit wherein the novelty resides in the advantageous construction so that the unit may be easily transported and have all of the operating parts thereof easily and quickly accessible.

Changes may be made in the form, construction and arrangement of parts from that disclosed herein without in any way departing from the spirit of the invention or sacrificing any of the attendant advantages thereof, provided, however, that such changes fall within the scope of the claim appended hereto.

The invention is hereby claimed as follows:

A portable therapeutic device comprising a mobile cabinet body including front and rear walls each having an upper edge, said cabinet body having an open top and being adapted to carry a tank containing a gaseous fluid under pressure selectively dispensable through a flexible tube carrying a mouthpiece, a wheelbarrow base mounting said cabinet for movement and

including supporting legs extending downwardly adjacent said front wall and rotatable wheels adjacent said rear wall, a dome-type cover member adjacent said open top and hinged to the upper edge of said rear wall of said body for swinging movement into a closing position with respect to said body wherein said tank is completely enclosed within said body, said cover member having a lower front edge abutting against the upper edge of said front wall in said closing position, cooperating means formed on the upper edge of said front wall of said body and on the lower front edge of said cover member and defining an opening when said cover member is in said closing position for the extension therethrough of said flexible tube, said mobile cabinet body being tilted rearwardly to clear said supporting legs whereby said mobile body may be moved along with a patient while said patient is receiving said gaseous fluid from said mouthpiece which is accessible exteriorly of said front wall of said body, latch means on said body and cover member for detachably securing the latter in said closed position, and a handle connected to said cover member for tilting and moving said mobile cabinet body.

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