

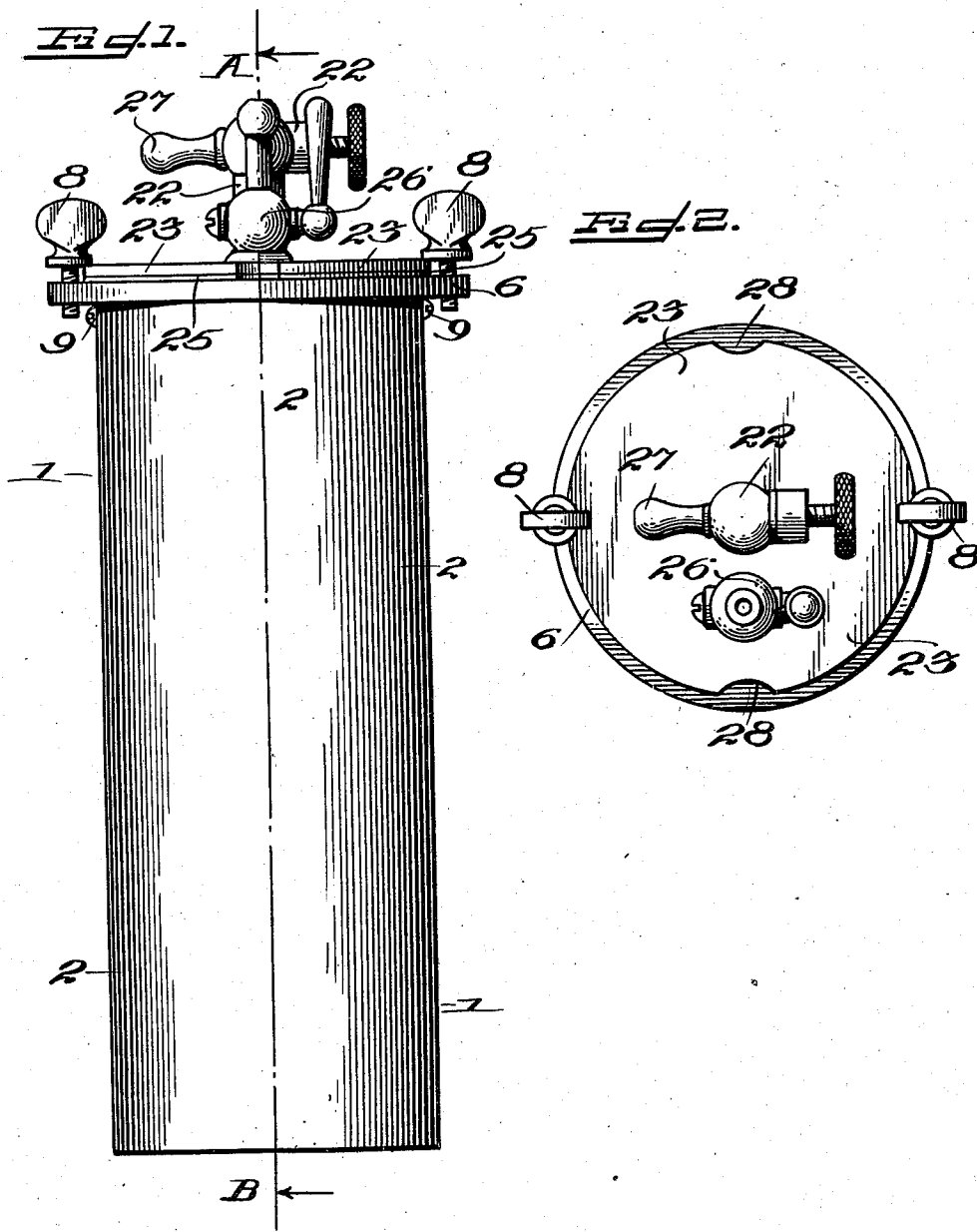
No. 867,964.

PATENTED OCT. 15, 1907.

R. VON FOREGGER.
APPARATUS FOR GENERATING OXYGEN.

APPLICATION FILED FEB. 8, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

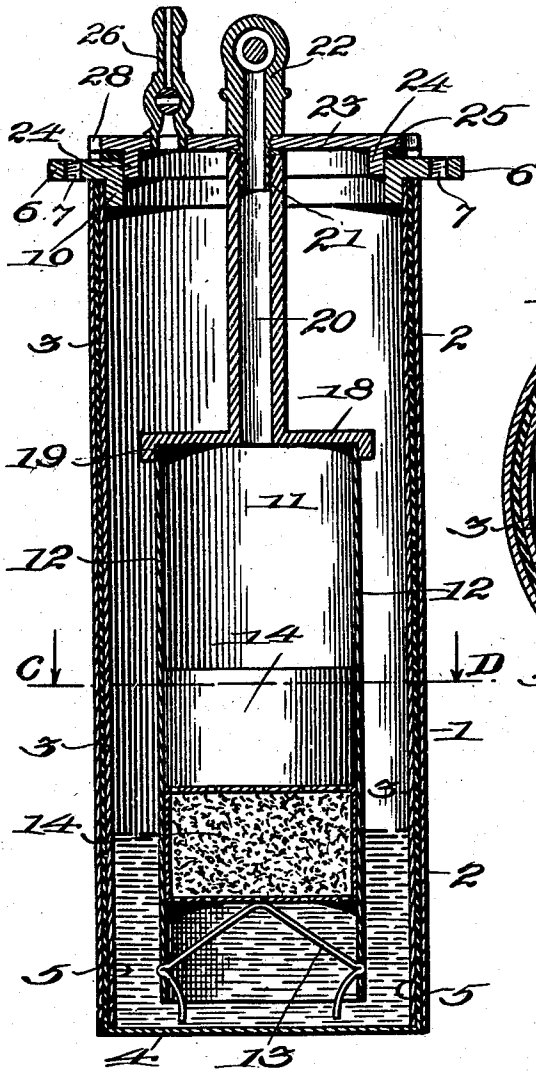
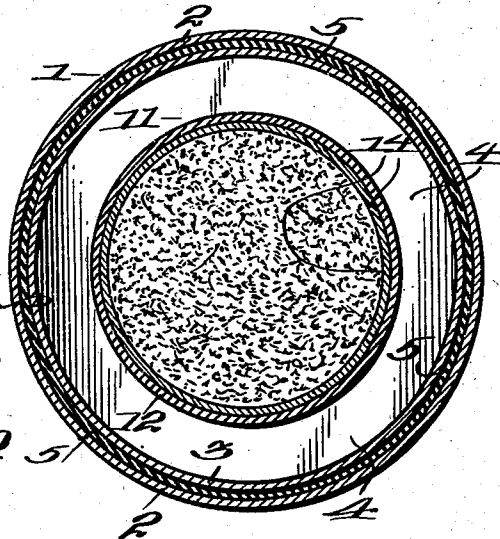


Fig. 4.



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UNITED STATES PATENT OFFICE.

RICHARD VON FOREGGER, OF NEW YORK, N. Y., ASSIGNOR TO THE ROESSLER & HASSLACHER CHEMICAL COMPANY, OF NEW YORK, N. Y., A CORPORATION.

APPARATUS FOR GENERATING OXYGEN.

No. 867,964.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed February 8, 1906. Serial No. 300,083.

To all whom it may concern:

Be it known that I, RICHARD VON FOREGGER, a subject of the Emperor of Austria, and a resident of the borough of Manhattan, city of New York, State of New York, have invented certain new and useful Improvements in Apparatus for Generating Oxygen Gas, of which the following is a specification.

My invention relates to an apparatus for the instantaneous generation of oxygen gas from a suitable chemical compound.

Heretofore oxygen gas has been produced by various processes wherein the use of machinery has been necessary. Said machinery has, moreover, not been portable, but has been so large and massive that it was not easily moved. The oxygen produced thereby could up to the present only be had in heavy cylinders in a compressed state, said cylinders having the disadvantage of being clumsy in handling and of storing the gas under high pressure, hence making it liable to losses and to explode.

By the practice of my invention every user of oxygen gas will be enabled to produce the same at will instantaneously and without danger or trouble, the gas produced being under low pressure and hence not subject to the danger of losses or liability of explosion as heretofore.

In the following I have described, in connection with the accompanying drawings, a construction illustrating one form of my invention, the features thereof being more particularly pointed out hereinafter in the claims.

In the drawings, Figure 1 is a side elevation of an apparatus illustrating one form of my invention, and Fig. 2 is a plan view of Fig. 1; Fig. 3 is a vertical sectional view on the line A—B of Fig. 1, and Fig. 4 is a cross-sectional view on the line C—D of Fig. 3.

Similar numerals of reference indicate similar parts throughout the several views.

1 indicates an outer container, adapted to contain water, preferably comprising an outer wall 2, an inner wall 3 and a bottom 4. A filling 5 of asbestos, or other suitable heat absorbing material, may be disposed intermediate the walls 2 and 3 of the container 1.

6 is a flanged ring provided with suitable screw threaded openings 7, 7 to receive clamping screws 8, 8, as hereinafter described, and adapted to be fastened to the top of the container 1 by means of screws 9, 9 passing through the container and the downwardly projecting portion 10 of the flanged ring 6.

11 is an inner container or holder comprising a cylinder 12, preferably made of caustic proof material, provided at its lower end with a removable spring support 13 adapted to hold cartridges 14, 14 in place, each of said cartridges being adapted to be perforated, preferably at the top and bottom to permit water to reach the

contents of the cartridges. The contents of the cartridges comprise a chemical adapted to produce oxygen gas by its reaction with a liquid such as water. As such chemical I prefer to use fused sodium peroxid. Container 11 is closed at the top by means of a flanged cap 18 to which it may be brazed as at 19. Cap 18 is provided with a pipe or neck 20 internally screw threaded at its upper end, as at 21, to receive a needle valve 22, mounted upon a suitable removable cover 23, said cover being clamped between the needle valve and the top of the pipe or neck, as shown in Fig. 3. Cover 23 is preferably provided with a downwardly projecting portion 24 adapted to fit within ring 6. A suitable rubber gasket 25 is adapted to be interposed between the edge of cover 23 and ring 6 in order to form an air tight closure. Cover 23 is provided with a second valve 26 adapted for communication with atmospheric air. Needle valve 22 is provided with a nipple 27 for receiving a suitable rubber tubing attachment if desired. Cover 23 is also preferably provided with keyways 28 adapted to permit the cover to be put in place without removing the clamping screws 8, 8. The cover may be turned away from the screws 8, 8 when in place and then the screws clamped down tightly so as to compress the rubber gasket 25 between the cover 23 and the ring 6.

The operation of the device is as follows: The inner container 11 is removed from within the container 1 and the latter is preferably two-thirds filled with water. One or more cartridges 14 are then placed in the inner container 11 and the same is replaced in the container 1, the needle valve 22 and the valve 26 being both closed. No generation of oxygen will take place when the apparatus is in this condition ready for use. The generation, however, will start instantaneously when both the needle valve 22 and the valve 26 are opened. The water level in the inner container 11, before the beginning of the generation of gas, is below the bottom of the lowermost cartridge, on account of the air pressure in said container. As soon as the valves 22 and 26 are opened the water will rise until it comes in contact with the chemical which is to be decomposed thereby. As a result of this contact the generation of gas starts at once, creating an overpressure in container 11 which will result in the prevention of the further rising of water in the said container. The water in container 11 will then only rise gradually according to the degree in which the chemical is being decomposed so that several packages of chemicals are provided, one above the other, the upper ones remaining perfectly dry and unused until the lower ones are entirely used up. It is obvious that the pressure in container 1 may be regulated by opening valve 26 more or less, according to the pressure desired. If it is desired to stop the generation

of gas the valve 26 is first closed in order to prevent the outside air from entering into the container 1 thus causing a lower pressure of air in said container. The result will be that the overpressure in container 11 will now prevent the water from rising any further, and if the valve 22 is then closed, the generation of gas is at once stopped. The apparatus may be kept in this partly discharged and partly charged condition for several weeks and at any time upon opening the valves the generation of gas can be immediately caused. Such apparatus, as is obvious, may be portable and will be of use for physicians and hospitals, and will especially enable the country doctor to have his own supply of oxygen gas at any time and place desired independent of the possibility of obtaining compressed oxygen in heavy cylinders. The apparatus may also be used in laboratories and for certain metallurgical processes, as for autogeneous welding, at such places where oxygen gas is not procurable in any other form.

It is obvious that the details of construction of the apparatus and the size and arrangement of parts may be widely varied without departing from the spirit of my invention, and I do not restrict myself to any of the details as shown and described.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A portable gas generating apparatus including a container, an inverted bell suspended therein having openings only at the top and bottom thereof, a port directly connecting the container with the atmosphere and a conduit connecting the bell with the gas discharge, in combination with a cartridge containing gas producing material mounted in the bell and adapted to be perforated top and bottom so as to permit water to contact with the material at the bottom of the cartridge and gas to escape out of the top thereof into the bell and thence through the gas discharge conduit.

2. A portable gas generating apparatus including a container, double walls in said container with a layer of heat insulating material between them, an inverted bell suspended in said container having openings only at the top and bottom thereof, a port directly connecting the container with the atmosphere a conduit connecting the bell with the gas discharge, in combination with a cartridge containing gas producing material mounted in the bell and adapted to be perforated top and bottom so as to permit water to contact with the material at the bottom of the cartridge and gas to escape out of the top thereof into the bell and thence through the gas discharge conduit.

3. A portable gas generating apparatus including a container, an inverted bell suspended therein having openings only at the top and bottom thereof, a port directly connecting the container with the atmosphere and a conduit connecting the bell with the gas discharge and valves for controlling said port and conduit, in combination with a cartridge containing gas producing material mounted in the bell and adapted to be perforated top and bottom so as to permit water to contact with the material at the bottom of the cartridge and gas to escape out of the top thereof into the bell and thence through the gas discharge conduit.

4. A portable gas generating apparatus including a container, an inverted bell suspended therein having openings only at the top and bottom thereof, a port directly connecting the container with the atmosphere and a conduit connecting the bell with the gas discharge, in combination with a plurality of cartridges each containing gas producing material and mounted one above the other in the bell, each being adapted to be perforated top and bottom so as to permit water to contact with the material at the bottom of the cartridge and gas to escape out of the top thereof into the bell and thence through the gas discharge conduit.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

RICHARD VON FOREGGER.

Witnesses:

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