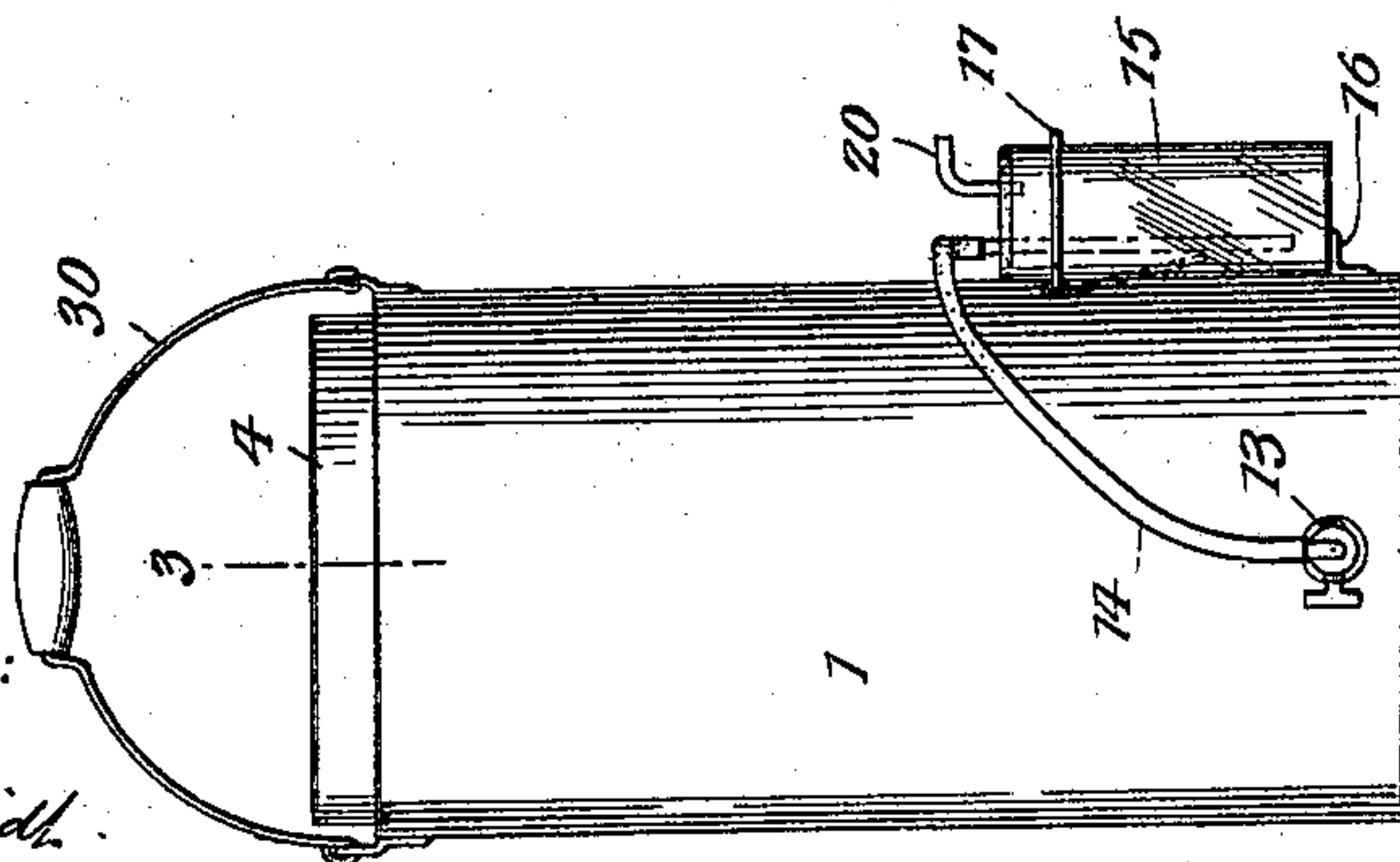
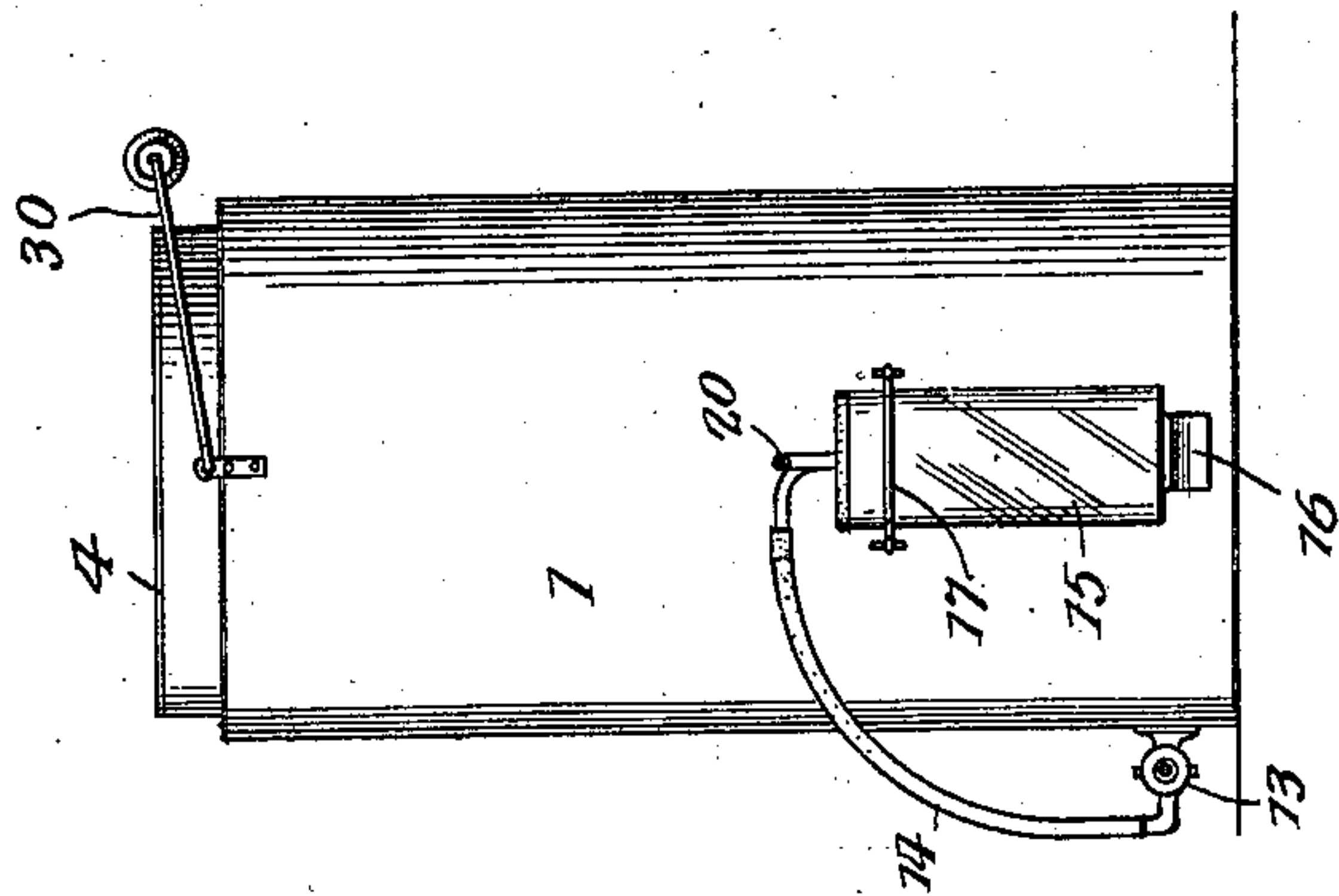
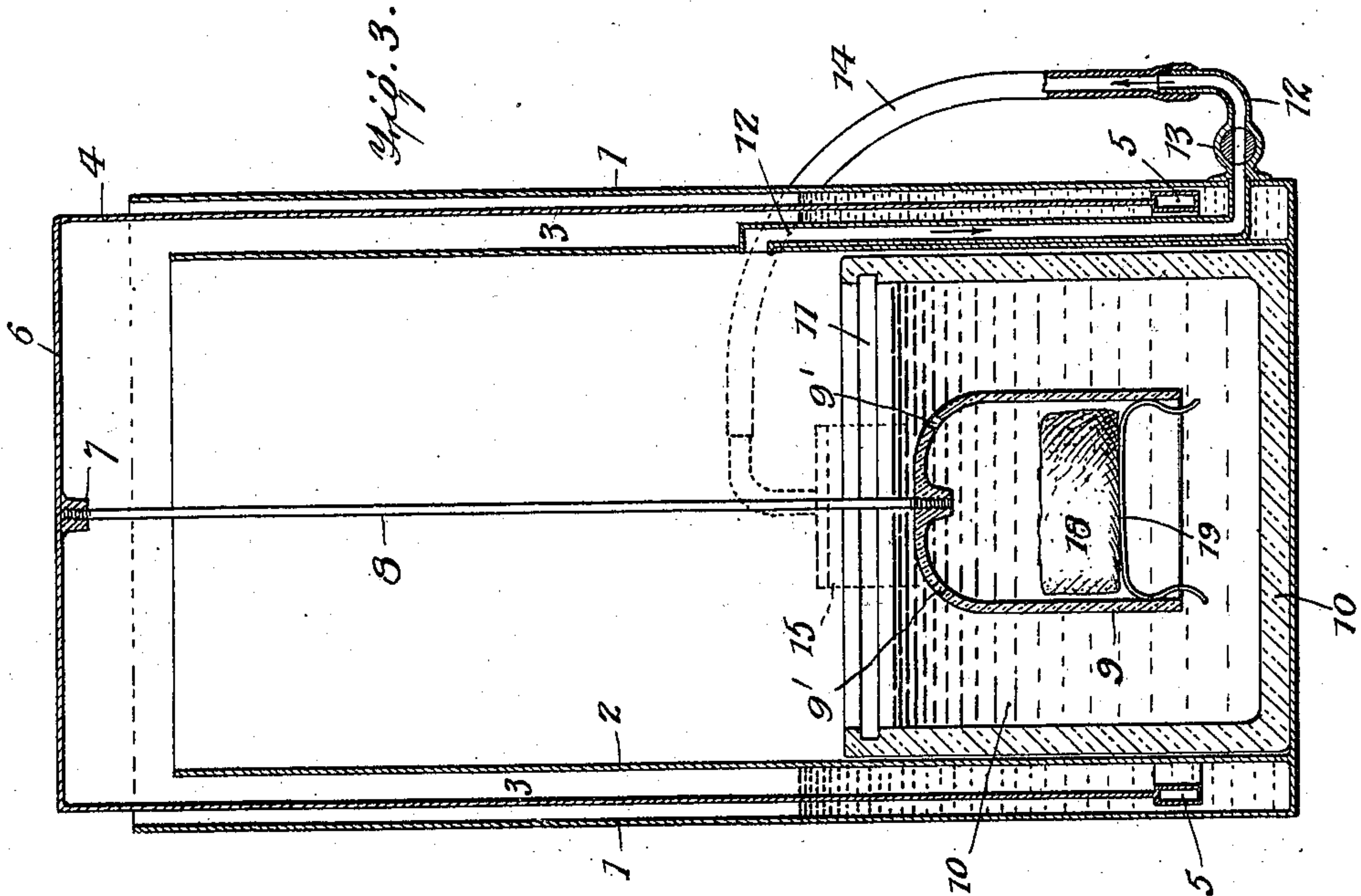


R. C. BRADLEY.  
OXYGEN GENERATOR.  
APPLICATION FILED MAY 25, 1910.

983,806.

Patented Feb. 7, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

*L. H. Schmidt.*  
*L. A. Stanley*

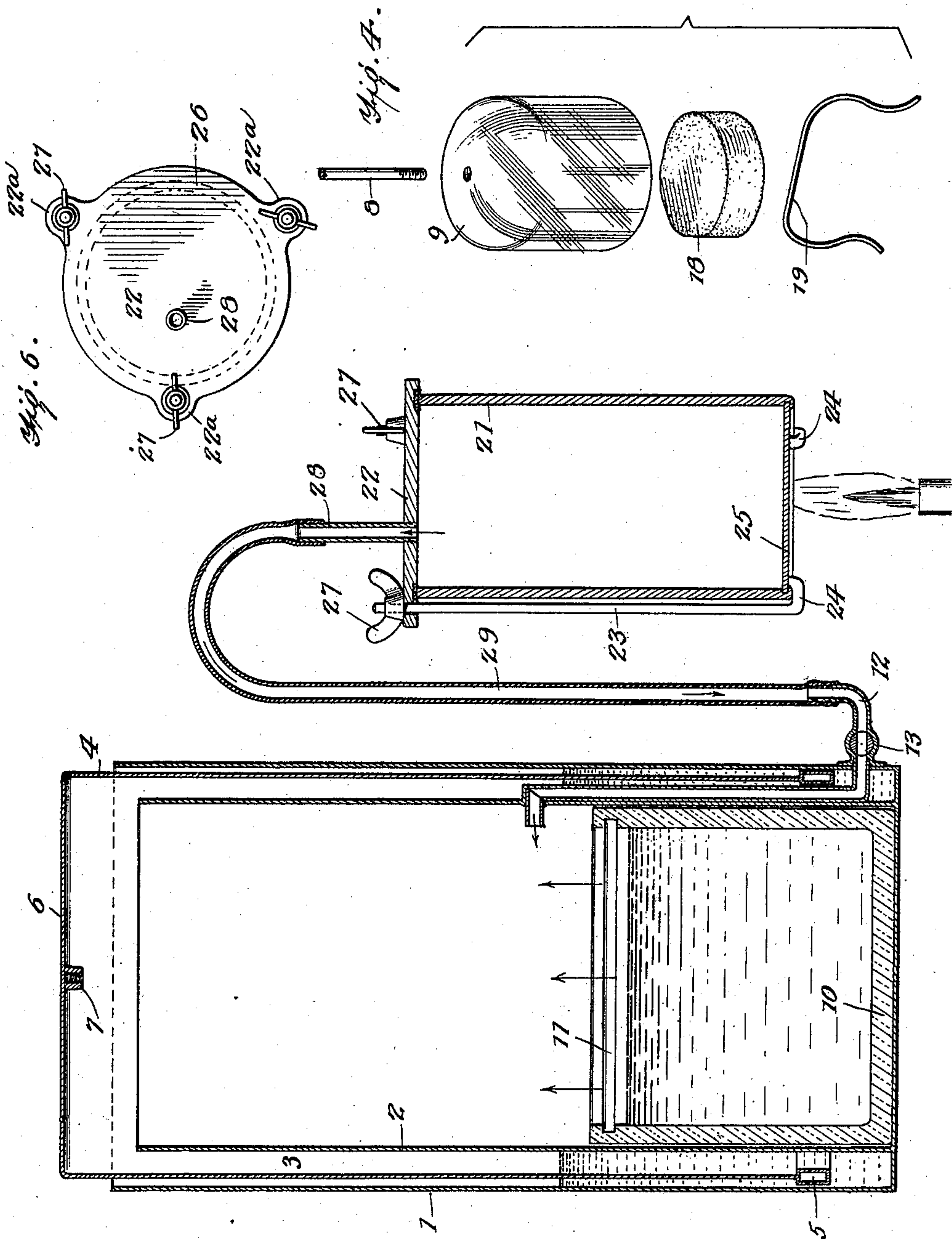
INVENTOR  
RICHARD C. BRADLEY,  
BY *Munn & Co.*  
ATTORNEYS

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*Fig. 5.*

INVENTOR  
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# UNITED STATES PATENT OFFICE.

RICHARD CLINTON BRADLEY, OF SHREVEPORT, LOUISIANA, ASSIGNOR OF ONE-HALF  
TO T. H. PACE, OF HOUSTON, TEXAS.

## OXYGEN-GENERATOR.

983,806.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed May 25, 1910. Serial No. 563,384.

*To all whom it may concern:*

Be it known that I, RICHARD C. BRADLEY, a citizen of the United States, and resident of Shreveport, in the parish of Caddo and State of Louisiana, have made certain new and useful Improvements in Oxygen-Generators, of which the following is a specification.

My invention relates to devices for generating oxygen, and it consists in the constructions, combinations and arrangements herein described and claimed.

An object of my invention is to provide a portable generator which will automatically generate gas as fast as it is consumed, and in proportion to consumption of the gas.

A further object of my invention is to provide a generator of simple construction, having few parts, and, therefore, not liable to get out of order.

A further object of my invention is to provide a device which can be used with a cartridge for generating the gas or with an auxiliary device for generating the gas by means of heat.

My invention is illustrated in the accompanying drawings, in which:

Figure 1 is a side view of the generator, Fig. 2 is a front view thereof, Fig. 3 is an enlarged vertical section through the device, Fig. 4 is a perspective view showing the bell cartridge and spring holder, Fig. 5 is a modified form of the device showing its use with the auxiliary retort, and Fig. 6 is a plan view of the auxiliary retort.

In carrying out my invention, I provide a main retort consisting of an external cylinder 1 and an internal cylinder 2, secured to the bottom of the external cylinder and separated from it by an intervening space 3.

Arranged to pass between the walls 1 and 2 in the space 3 is a cylinder 4. This cylinder is closed at its top and is provided on its bottom with a buoyant tubular edge 5 as seen in Fig. 3. The top portion 6 of the cylinder 4 is provided with a central lug 7 on its under side, which is threaded to receive a rod 8. The other end of the rod 8 is threaded and is secured to the upper part of a bell 9 having perforations 9' of glass or similar material.

Within the inner cylinder 2 is a retainer 10 which is provided with an annular groove 11 near its upper edge for the purpose of

more easily removing the retainer by means of a hook, or other implement. A pipe 12 communicates with the interior of the cylinder 2, passes through the wall 1 and communicates with a stop cock 13. The latter is connected by means of a flexible tube 14 with a wash bottle 15. The wash bottle rests normally on a bracket 16 being held in place by a loose ring 17.

From the foregoing description of the various parts of the device the operation thereof may be readily understood. In charging the generator the cylinder 4 together with the bell 9 is lifted out of the apparatus. An oxygen cartridge 18 is placed within the bell and held therein by means of the spring 19. This may be sodium peroxid, or any other suitable material for generating the oxygen. The glass retainer 10 is then filled with water to a point just below the groove 11, and water is placed between the outer cylinder 1 and the inner cylinder 2 in the space 3. The cylinder 4 is now replaced and as the cartridge sinks beneath the water in the retainer 10 the gas is generated. The gas passes up in the interior of the cylinder 2 and as the pressure increases it lifts the cylinder 4 until finally the cartridge is lifted out of the water, when the gas will cease to be generated. The generator is now full of gas. Now by turning the stop cock 13 the gas will be forced by the weight of the cylinder 4 through the tube 14 and the wash bottle 15 and will be delivered at 20. As the cylinder 4 descends the cartridge again enters the water and gas is generated. As soon as the stop cock 13 is closed the gas pressure will again lift the cartridge from the water and the generation of the gas will be stopped. It will be seen that the generation of the gas is automatically regulated by merely turning the stop cock 13 off or on.

In Figs. 5 and 6, I have shown a modified form in which the gas may be generated in an auxiliary retort. This retort consists, preferably, of an iron cylinder 21 closed at its bottom and provided with a top 22 having extensions 22<sup>a</sup> adapted to receive the rods 23 whose ends are provided with hooks 24 for engaging the bottom 25 of the retort 21. The underside of the top 22 is provided with a gasket 26 of asbestos or the like. The rods 23 are threaded at their tops and are



provided with the winged nuts 27. An exit pipe 28 communicates with the pipe 12 by means of the tube 29.

The operation of the modified form is as follows: The materials for generating the oxygen are first placed within the cylinder 21, the top 22 is then placed in position and the hooks 24 are brought underneath the bottom 25, the wing nuts are then screwed down so as to seal the top upon the cylinder 21. The heat is now applied to the bottom of the retort and as the gas is generated it passes through the tube 29 and through the tube 12. As the gas collects within the cylinder 2 the floating cylinder 4 is pushed upwardly. When the limit has been reached the stop cock 13 may be turned and the auxiliary retort may be disconnected. Now when the stop cock 13 is opened again the weight of the cylinder 4 will cause the gas to be forced out through the tube 12, when it may be used for any purpose desired. In this form of the device the rod 8 together with the bell 9 is removed from the cylinder 4. It will not be necessary to remove the retainer 10, since its presence does not interfere with the storing of the gas.

The device is provided with a handle 30 by which it may be carried from place to place. Ordinarily it is necessary to provide a separate place for the wash bottle. As will be seen from Figs. 1 and 2 the wash bottle is conveniently carried with the generator itself. There is no danger of a bottle being displaced, yet when it is desired to remove the bottle the pivoted ring 17 falls closely to the side of the cylinder and is therefore out of the way.

I claim:

1. In a generator for oxygen, an inner and an outer cylinder, said inner and outer cylinders being closed at their bottoms by a plate making a tight joint, a retainer within said inner cylinder, a liquid in the space between said inner and outer cylinder, water in

said retainer, a movable cylinder closed at its upper end and provided at its lower end with a tubular edge adapted to enter the liquid between the inner and the outer cylinder, a rod secured to the movable cylinder at one end, a perforated bell secured to the other end of the rod, an oxygen cartridge normally disposed within said bell, a spring for retaining said cartridge in said bell, a pipe communicating with the interior of said inner cylinder above said retainer, said pipe passing through the wall of the outer cylinder, and a stop cock for opening and closing the outer end of said pipe.

2. In a generator for oxygen, an inner and an outer cylinder, said cylinders being closed at their bottoms by a plate making a tight joint, a retainer within said inner cylinder, a liquid in the space between said inner and outer cylinder, water in said retainer, a movable cylinder closed at its upper end and provided at its lower end with a tubular edge adapted to enter the liquid between the inner and the outer cylinder, a rod secured to the movable cylinder at one end, a perforated bell secured to the other end of the rod, an oxygen cartridge normally disposed within said bell, a spring for retaining said cartridge in said bell, a pipe communicating with the interior of said inner cylinder above said retainer, said pipe passing through the wall of the outer cylinder, a stop cock for opening and closing the outer end of said pipe, a bracket secured to the exterior of said outer cylinder, a pivoted ring secured above said bracket, a wash bottle supported by said bracket and adapted to extend through said ring, and a flexible connection between said wash bottle and said stop cock.

RICHARD CLINTON BRADLEY.

Witnesses:

R. D. WEBB,  
CLIFTON F. DAVIS.