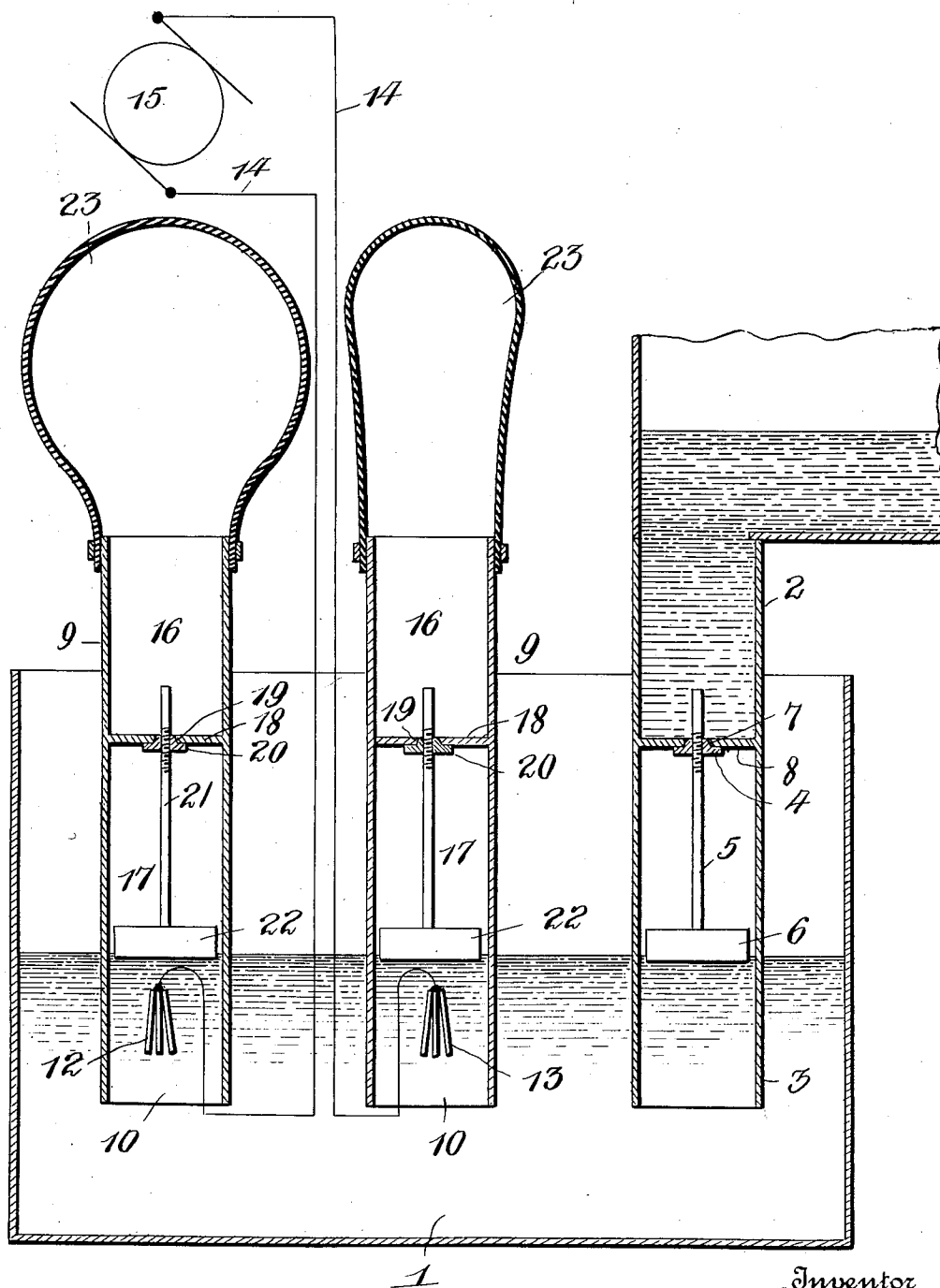


No. 813,844.

PATENTED FEB. 27, 1906.

L. VAN SCOYOC.  
ELECTROLYTIC APPARATUS.  
APPLICATION FILED MAY 15, 1905.



Witnesses  
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# UNITED STATES PATENT OFFICE.

LEROY VAN SCOYOC, OF GILBERT STATION, IOWA.

## ELECTROLYTIC APPARATUS.

No. 813,844.

Specification of Letters Patent,

Patented Feb. 27, 1906.

Application filed May 15, 1905. Serial No. 260,479.

*To all whom it may concern:*

Be it known that I, LEROY VAN SCOYOC, a citizen of the United States, residing at Gilbert Station, in the county of Story and State of Iowa, have invented certain new and useful Improvements in Electrolytic Apparatuses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in electrolytic apparatuses, and more particularly to such an apparatus which is specially designed for decomposing water to produce hydrogen and oxygen gases.

The object of my invention is to provide a simple, inexpensive, and efficient apparatus of this character in which the operation will be rendered continuous by the use of automatic valves.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing I have shown a diagrammatic sectional view of an apparatus embodying my invention.

Referring to the drawing by numerals, 1 denotes a receptacle or container, which may be of any suitable form and construction adapted to contain the acidulated water or other liquid which is to be decomposed by the apparatus. This liquid is fed to the container 1 from any suitable source of supply through an inlet-pipe or conductor 2, which has its lower open end 3 projecting below the normal level of the liquid in the container 1. The level of this liquid in the container 1 is kept constant by means of a float-valve 4, located in the feed or supply pipe. This valve 4, as shown, is of the ordinary cone type and is secured upon a vertically-movable valve-stem 5, carried by a float 6, disposed within the lower portion of the pipe 2. As the level of the liquid in the container 1 rises and falls the valve 4 will be moved by the float 6 into and out of a valve-opening 7, which is formed in a partition 8, located in the pipe 2. Suspended or otherwise mounted within the container 1 are one or more gas-collectors 9, which, as shown, are in the form of cylindrical tubes or receptacles. These receptacles 9 have their lower open ends 10 submerged in

the liquid in the container 1, and the positive and negative electrodes 12 and 13 are disposed in the lower portion of the receptacles and connected by wires or conductors 14 to a dynamo or other electrical generator 15. Each of the receptacles 9 is divided into upper and lower compartments 16 17 by a partition 18, which has formed at its center a valve-opening 19. Coacting with the opening 19 is a valve 20, which is carried by a valve-stem 21, secured upon a float 22, which is disposed in the lower portion 17 of the receptacle above its electrode. As the level of the water in the receptacles 9 varies the floats are raised and lowered, thereby opening and closing the valves 20, so that the gas generated and collected within the lower compartment 17 may pass into the compartment 16. Any suitable means may be provided for taking the gas from the upper compartment 16. As shown, flexible gas-bags 23 are secured upon the upper open ends of the receptacles 9.

The operation of the apparatus will be readily understood from the foregoing description, taken in connection with the accompanying drawing. It will be seen that when the apparatus is used for the purpose of decomposing water acidulated water is placed in the container 1 and is kept at a constant level by means of the float-valve 4, which as the level of the water in the tank 1 lowers opens to admit pure water through the valve-opening 7, and as the level of the water in the container 1 rises the valve is again elevated to close said opening. The hydrogen and oxygen gases generated within the lower compartment 17 of the receptacles 9 pass into the upper compartments 16 and into the gas-bags 23, when the pressure of gas within the compartments 17 becomes great enough to lower the level of the water in said receptacles, and hence the floats 22, which carry the valves 20.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Apparatus for decomposing water by electrolysis, comprising a receiver, means including a valve actuated by variations in the water-level in the receiver, to supply water to the latter, a gas-collector, electrodes in the

receiver in suitable relationship to the gas-collector and a valve actuated by variations in the water-level in the receiver, to control the discharge of gas to the collector.

5 2. An electrolytic apparatus comprising a liquid-container, an automatic liquid-supply for maintaining the liquid in said container at a constant level, gas-collectors having their open lower ends projecting below the  
10 level of the liquid in said container, electrodes in said collectors, partitions in said collectors having valve-openings therein, and float-valves in said collectors and coacting with said valve-openings, substantially as de-  
15 scribed.

3. An electrolytic apparatus comprising a liquid-container, a liquid-supply therefor, a

float-valve in said supply for containing the liquid at a constant level in said container, gas-collecting receptacles having their lower 20 open ends submerged in said container, electrodes in said receptacles, partitions in said receptacles having valve-openings therein, float-valves in said receptacles and coacting with said valve-openings, and gas-bags at the 25 upper open ends of said receptacles, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEROY VAN SCOYOC.

Witnesses:

ED HOLMES,

HARLEY MANGER.