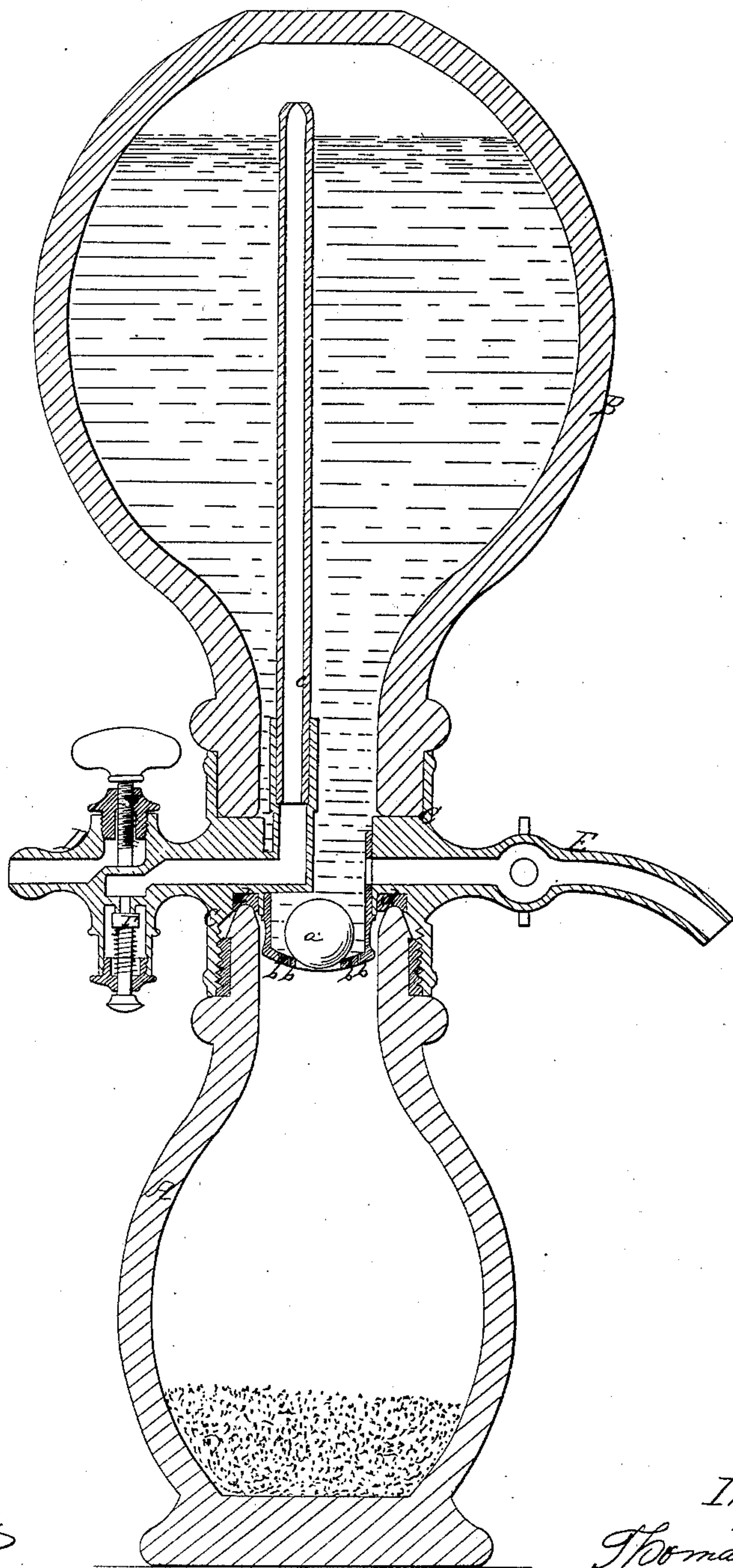


*T. Warker,*  
*Gas Generator,*

*N<sup>o</sup> 34,916.*

*Patented Apr. 8, 1862.*



*Witnesses,*  
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# UNITED STATES PATENT OFFICE.

THOMAS WARKER, OF NEW YORK, N. Y.

## IMPROVEMENT IN APPARATUS FOR AERATING LIQUIDS.

Specification forming part of Letters Patent No. 34,916, dated April 8, 1862.

*To all whom it may concern:*

Be it known that I, THOMAS WARKER, of the city, county, and State of New York, have invented a new and Improved Apparatus for Generating Carbonic-Acid Gas; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which represents a vertical central section of my invention.

The nature of this invention consists, first, in the arrangement of two faucets, one to communicate with the gas-space and the other with the water-space of the receiver in such a manner that from one of the faucets pure gas and from the other gaseous liquid can be drawn, and that the gas being compelled to pass through the liquid contained in the receiver before it reaches the gas-space is thereby washed and purified; second, in the arrangement of an upright tube in combination with the collar forming the connection between the generator and the receiver and with the gas-faucet in such a manner that said gas-faucet as well as the liquid-faucet can be made out of one piece with the connecting-collar and that no extra joint is required for said gas-faucet; third, in the arrangement and combination of a generator and receiver which are connected by a collar containing a ball-valve, upright pipe, safety-valve, and two faucets in such a manner that a tight, portable, safe, and handy apparatus for generating gas is produced, from which pure gas or gaseous liquid can be drawn at pleasure.

To enable others skilled in the art to make and use this invention, I will proceed to describe it.

Two egg-shaped vessels A B are connected by a collar C. Said vessels are made of glass, so that the operation of the apparatus can be seen. The vessel A is intended to receive the effervescent mixture, such as bicarbonate of soda and tartaric acid, and it forms the generator of the apparatus. The gas on emanating from the generator passes through the collar C into the receiver B. The connection between the two vessels A B is closed by the ball-valve *a*, so that the receiver B may be filled with water or other liquid and secured to the generator, and that no gas is generated

until by tilting the apparatus the ball is thrown out of its seat and a portion of the water from the receiver is permitted to pass into the generator and to dissolve some of the effervescent mixture contained therein. The gas on emanating from the generator A passes through small holes *b* around the seat of the ball-valve *a* and through the water in the receiver, and it collects on the surface of said water in the upper part or gas-space of the receiver. This space connects through a vertical tube *e*, bent at right angles near its lower end, with the faucet D, which serves to draw off the pure gas, and another faucet E communicates with the water-space of the receiver and serves to draw off the gaseous liquid.

The washing of the gas, which is effected by passing it through the water in the receiver before it is drawn off, is of particular importance when the apparatus is used for generating carbonic-acid gas for medical purposes, and hitherto the want of a suitable apparatus only has been in the way of a more general application of this gas.

The collar C, which forms the connection between the generator and the receiver, is cast in one piece with the faucets D E, and it is firmly secured to the receiver. Its lower end is provided with a screw-thread that screws over a corresponding thread on the neck of the generator, and on being screwed down the top edge of the generator is firmly pressed against a gasket *d* in the interior of the collar, thereby producing a tight joint between the generator and the receiver. By making the collar with the faucets all in one casting the number of joints is reduced to one; and, furthermore, if the generator breaks it can easily be replaced by another, and if the receiver breaks the collar can be taken off from the broken and screwed to a new receiver without much labor. By this arrangement of the collar with the faucets D E and vertical tube *e* much metal and labor are saved, and the danger of having a leaky joint is reduced.

To prevent the danger of an explosion, a safety-valve F is connected with the gas-space of the receiver.

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

1. The arrangement of two faucets D E, one to communicate with the gas-space and the other with the water-space of the receiver B, as and for the purpose described.

2. The arrangement of the vertical tube e, in combination with the connecting-collar C and gas-faucet D, substantially as and for the purpose set forth.

3. The combination and arrangement of the

generator A, receiver B, collar C, ball-valve a, tube e, faucets D E, and safety-valve F, all constructed and operating substantially in the manner and for the purposes herein shown and described.

THOMAS WARKER.

Witnesses:

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