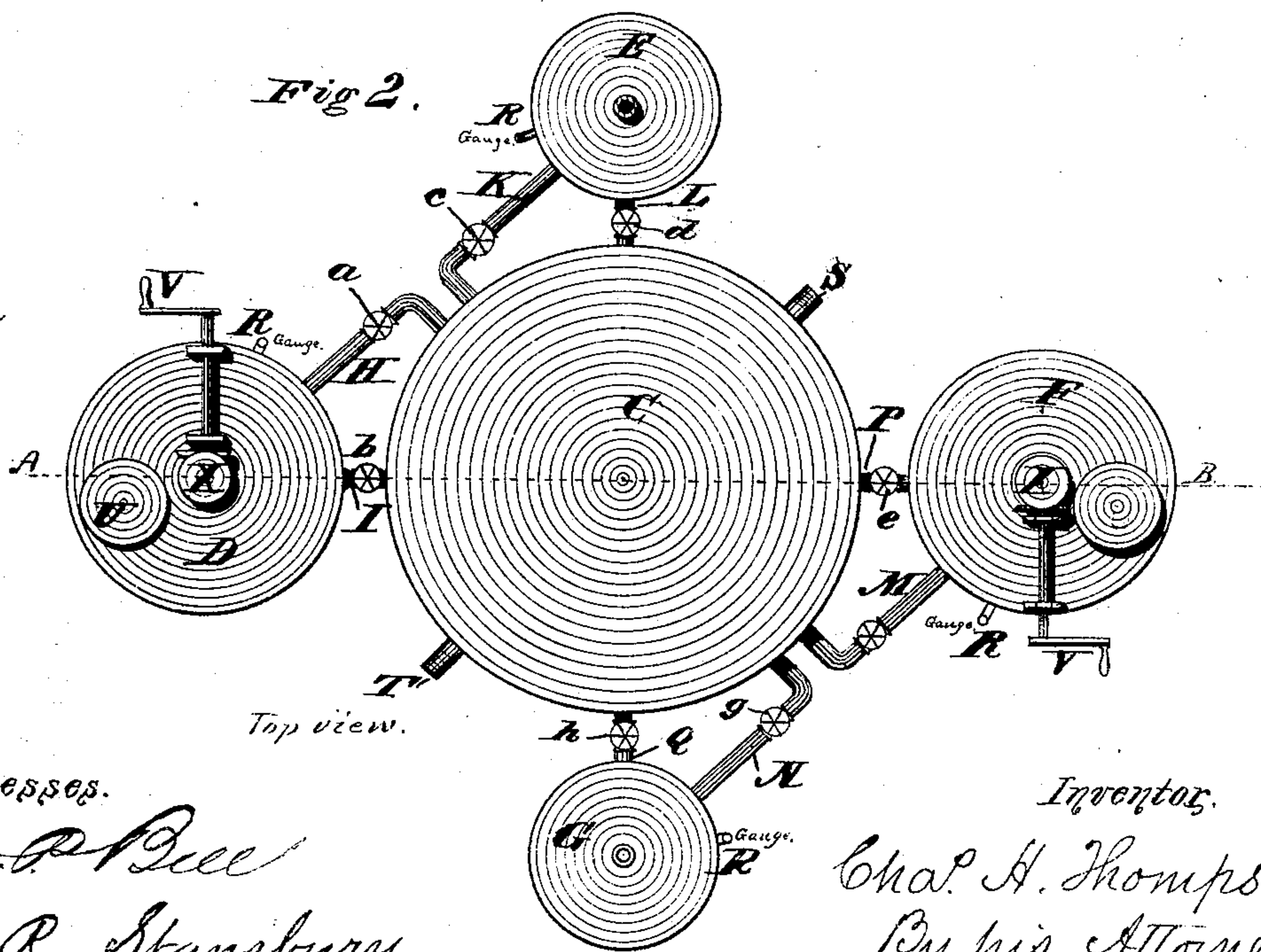
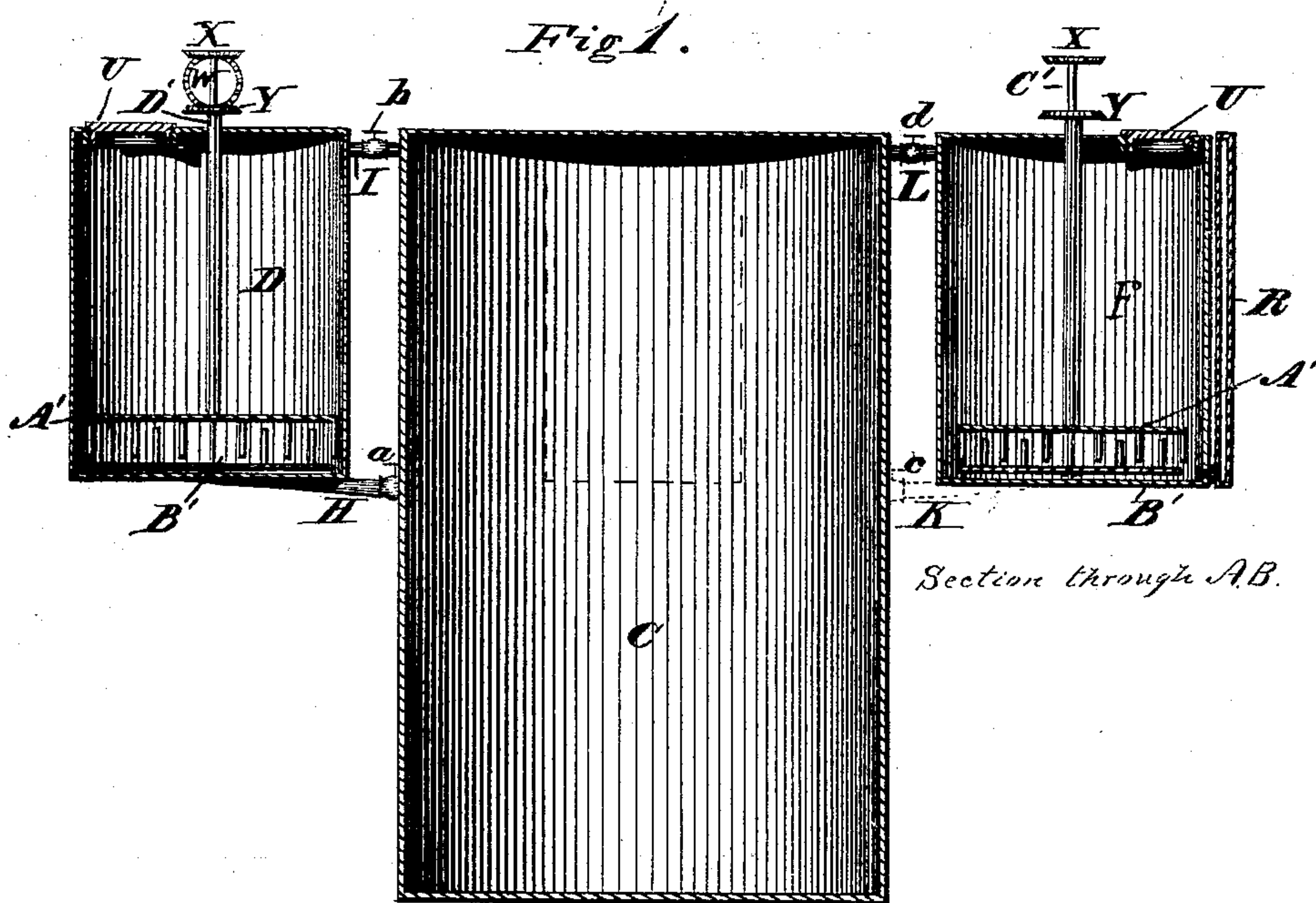


C. H. THOMPSON.
Carbonic-Acid Gas Generators.

No. 149,081.

Patented March 31, 1874.



Witnesses.

W. A. Rice
W. R. Stansbury

Inventor.

Chas. H. Thompson
By his Attorneys
Stansbury & Munn.

UNITED STATES PATENT OFFICE.

CHARLES H. THOMPSON, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF
HIS RIGHT TO CHARLES M. MARTIN, OF NEW YORK, N. Y.

IMPROVEMENT IN CARBONIC-ACID-GAS GENERATORS.

Specification forming part of Letters Patent No. **149,081**, dated March 31, 1874; application filed
January 23, 1874.

To all whom it may concern:

Be it known that I, CHARLES H. THOMPSON, of Cleveland, Ohio, have invented an Improved Apparatus for the Continuous Generation of Carbonic-Acid Gas; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical central section of my improved gas-generator on line A B of Fig. 2. Fig. 2 is a plan or top view of the same.

The same part is marked by the same letter in both figures.

My invention relates to the generation of carbonic-acid gas for the purpose of extinguishing fires, or any other purpose in which a large and continuous supply of gas is required. It consists of a main generating tank, connected by pipes, provided with stop-cocks, with a series of reservoirs, in which the gas-generating materials are separately contained, and from which they are supplied, as wanted, to the generator, in the quantities and proportions required for the rapid generation of the gas, said reservoirs being arranged in duplicates, so that one set can be used while another set is being charged, in order that the supply of materials and the generation of gas may be continuous, the effete materials being drawn off below as fast as they cease to be efficient for the generation of gas, all as hereinafter more fully set forth.

In the accompanying drawings, C marks the main tank or central generator, which is surrounded by and connected with the reservoirs D E F G. Of these reservoirs, D and F are intended to contain the solution of carbonate of soda, and E and G the dilute sulphuric acid. Vessel D is connected at bottom with the tank C by the pipe H, provided with the stop-cock *a*. It is connected at the top with the tank by pipe I, having the cock *b*. Acid-reservoir E is connected with tank C at bottom by pipe K, having cock *c*, and at top by pipe L, having cock *d*. Vessel F is similarly connected by pipes M and P, provided, respectively, with cocks *e* and *f*; and acid-ves-

sel G is connected with the tank by pipes N and Q, having, respectively, stop-cocks *g* and *h*. Reservoirs D and F are each provided with a stirring apparatus, consisting of a winch, V, on the end of a shaft, the other end of which carries a miter-wheel, W, which gears into two bevel-wheels, X and Y, fixed, respectively, on top of a center shaft, C', and sleeve-shaft D'. These shafts are attached, respectively, to the rakes or stirrers B' and A', placed near the bottom of each vessel. By operating the winch V these rakers are rotated in opposite directions, and effectually stir and commingle any materials which may be placed in the vessels in which they operate. Each of the vessels D E F G is provided with a glass gage, R, to indicate the quantity of liquid it contains. A waste-pipe, S, is placed near the bottom of tank C to draw off the effete material, and a pipe, T, placed near the top of the tank, serves to convey the gas generated to the place where it is intended to be used, whether to extinguish a fire or for any other purpose.

The operation is obvious from the construction. The reservoirs D and F are supplied with a solution of carbonate of soda, which is kept from deposition by the occasional rotation of the stirrers. In the reservoirs E and G is placed sulphuric acid, diluted to the degree best adapted to produce a rapid and copious evolution of gas when in combination with the alkaline solution. The pipes leading from the vessels D E F G to the tank C are so proportioned as to deliver the proper relative amounts of the gas-generating materials to produce the most efficient result.

The gas is conveyed to the place where it is to be used by the pipe T, opening into the top of the tank C. The spent material subsides to the bottom of the tank, and is drawn off through pipe S.

When either of the vessels D E F G becomes exhausted, it can be shut off by means of the stop-cocks from communication with tank C, and replenished with the required material. In this way a continuous supply of gas-generating materials is secured, and the

generation of gas goes on without interruption as long as may be desired.

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

A generator for the continuous generation of carbonic-acid gas, consisting of the tank C, connected with the reservoirs D E F G by the pipes H I K L M N P Q, and provided with the outlet-pipes S T, all constructed and

operating substantially in the manner described.

The above specification of my said invention signed and witnessed, at Washington, this 22d day of January, A. D. 1874.

CHARLES H. THOMPSON.

Witnesses:

W. P. BELL,

CHAS. F. STANSBURY.