

(No Model.)

J. COLLINS.

Apparatus for Generating Gas for Soda Water.

No. 228,315.

Patented June 1, 1880.

Fig: 1.

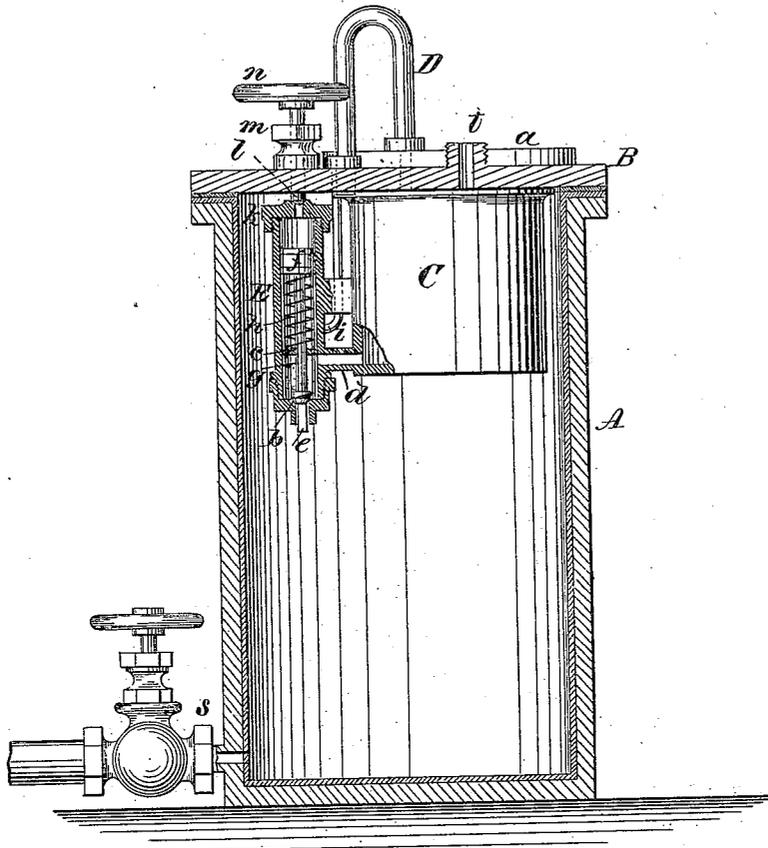
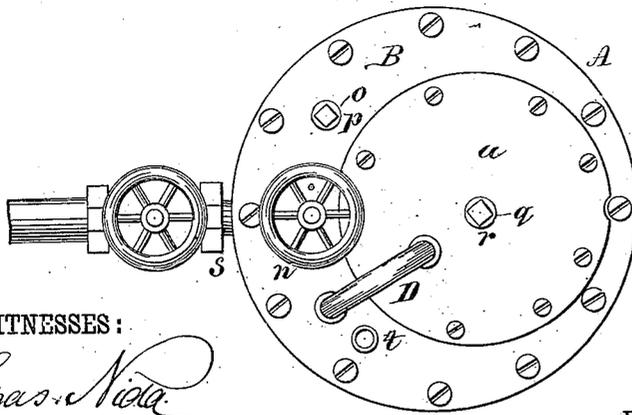


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN COLLINS, OF BROOKLYN, NEW YORK.

APPARATUS FOR GENERATING GAS FOR SODA-WATER.

SPECIFICATION forming part of Letters Patent No. 228,315, dated June 1, 1880.

Application filed March 25, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN COLLINS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Apparatus for Generating Gas for Soda-Water, of which the following is a specification.

Figure 1 is a vertical section of my improved apparatus. Fig. 2 is a plan view.

Similar letters of reference indicate corresponding parts.

The invention consists in combining a cylinder having a valve-seat and diaphragm with valves, a spring, an acid-reservoir, and a cylinder, as hereinafter described.

In the drawings, A is a hollow cylinder for containing marble-dust, and B is a cover or head attached to the cylinder and having formed on it an acid-reservoir, C, which projects downward into the cylinder A. The acid-reservoir is provided with a cap, *a*, which is firmly secured to the head B by means of screws.

Communication is established between the acid-reservoir C and cylinder A by an inverted siphon, D, that is connected with the heads *a* B.

A small cylinder, E, having at its lower end a valve-seat, *b*, and between the valve-seat and its upper end an apertured horizontal partition or diaphragm, *c*, is connected with the lower portion of the said reservoir C by a short pipe, *d*, which enters the cylinder E between the valve-seat *b* and diaphragm *c*.

A valve, *e*, is fitted to the valve-seat *b*, and is connected with a piston, *f*, fitted to the upper portion of the cylinder E by a rod, *g*, which passes through the aperture in the diaphragm *c*.

Around the rod *g*, and between the diaphragm *c* and piston *f*, a spiral spring, *h*, is placed, which forces the piston *f* upward.

A small pipe, *i*, enters the cylinder E, between the piston *f* and diaphragm *c*, and passes upward through the head B, bringing the space between the piston *f* and diaphragm *c* into communication with the external air.

The upper end of the cylinder E is provided with a cap, *k*, in which there is an aperture that may be closed by the valve *l*, the stem of which is provided with a screw-thread, and is fitted to an internally-threaded aperture in the head B, and extends through a stuffing-box, *m*, and is provided with a hand-wheel, *n*, by which its valve may be operated.

The cylinder A is partly filled with marble-dust through the aperture *o*, which is closed by a screw-plug, *p*. The acid-reservoir C is filled through the aperture *q*, which is stopped by a screw-plug, *r*.

The refuse left in the cylinder A after generating the gas is removed through the pipe *s*, and the gas is conveyed to the washer by a pipe connected with the head B at *t*.

The operation is as follows: The valves *e* *l* being open, the acid runs from the reservoir C to the cylinder A through the valve at the lower end of the cylinder E, and acting upon the marble-dust liberates the carbonic-acid gas. When the gas-pressure exceeds a prescribed limit the pressure upon the upper side of the piston forces it downward, closing the valve *e* and stopping the flow of acid, and consequently stopping or retarding the generation of gas. When the pressure diminishes the spring raises the piston and the valve connected with it, and acid is again admitted to the cylinder A, and the generation of gas is proceeded with as before.

When it is desired to permit the acid to flow continuously into the cylinder A the valve *l* is closed, so as to prevent the gas-pressure from moving the piston and valve.

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

The combination of the cylinder E, having valve-seat *b* and diaphragm *c*, the valves *e* *l*, and spring *h* with the acid-reservoir C and cylinder A, as and for the purpose specified.

JOHN COLLINS.

Witnesses:

C. SEDGWICK,
GEO. M. HOPKINS.