

E. D. Wheeler,
Portable Soda Fountain.

N^o 20,382.

Patented May 25, 1858.

Fig. 1.

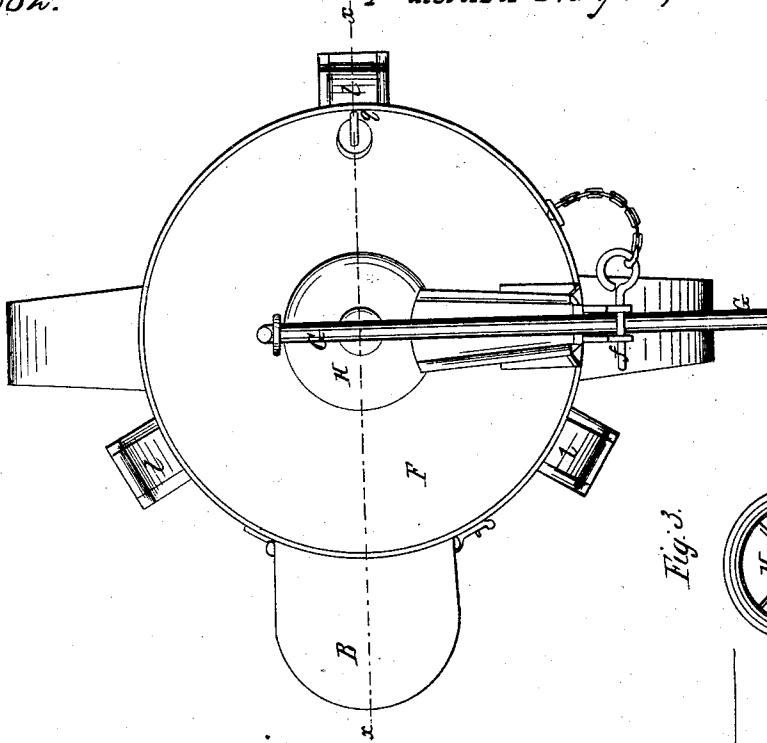


Fig. 3.

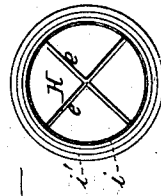
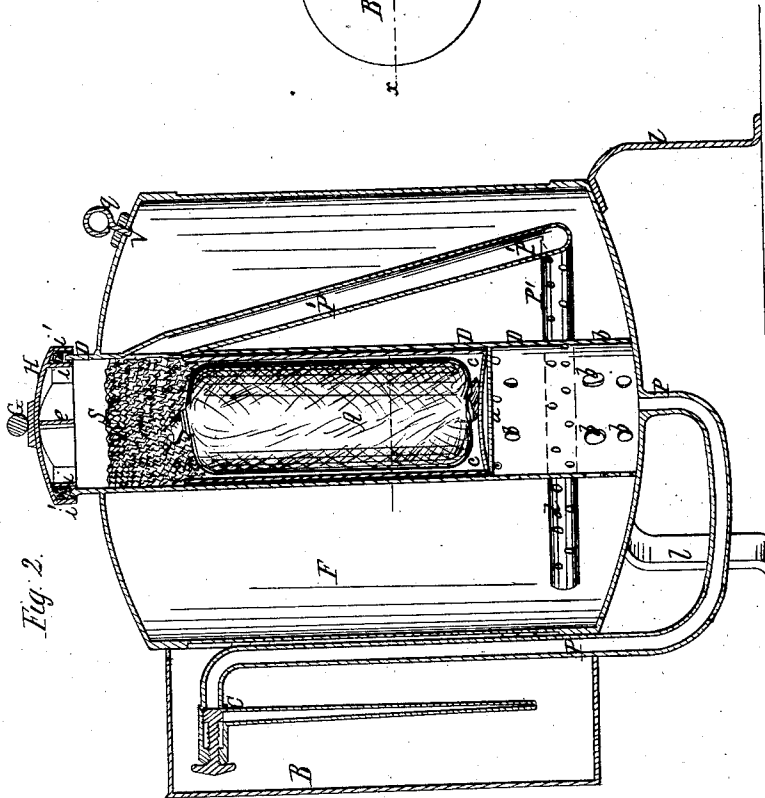


Fig. 2.



UNITED STATES PATENT OFFICE.

E. D. WHEELER, OF MURFREESBORO, TENNESSEE.

PORTABLE SODA-WATER APPARATUS.

Specification of Letters Patent No. 20,382, dated May 25, 1858.

To all whom it may concern:

Be it known that I, E. D. WHEELER, of Murfreesboro, in the county of Rutherford and State of Tennessee, have invented a new and useful Improvement in Portable Soda-Water Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is a top view of apparatus. Fig. 2 is a vertical section on line *x x*. Fig. 3 is a view showing interior of cap.

Similar characters of reference in the several figures denote the same part.

The object of my invention is so to charge the generator with the substances producing the carbonic acid gas, that the gas shall be slowly and progressively evolved and be passed into the fount gradually in combination with a peculiar construction of apparatus hereinafter to be described, whereby a purifier is dispensed with.

The details of this invention will be fully understood by reference to the drawing, in which—

F is the fount constructed, when of small capacity, of tin; and of any other metal that may be desired when of large size; the inside being tinned. This fount is supported on legs *l*, and has a pipe P leading from the bottom to the discharge cock C, of ordinary construction. This cock has a cover B, to be removed when soda water is to be drawn.

Through the center of the fount runs a cylinder D, divided into two parts by a diaphragm *a*. The upper portion communicates with the fount, by the pipe F', leading to the lower portion thereof, and having a perforated branch *d*. The lower part of cylinder D, has numerous perforations *b*, for the free passage of the water contained in the fount.

Within the upper portion of cylinder D, is a glass cylinder *c* for the reception of the charge A. When it is not designed to use sulfuric acid, this glass cylinder may be dispensed with.

The cylinder D is covered with a cap H, braced inside by pieces *e*, and packed to fit close to the upper edge of the cylinder D in the following manner. The space between the two rims *i i'*, is filled with gutta percha, softened by immersion in hot water; the cap is forced down and an impression of the

edge of cylinder D made in the gutta percha. The cap is held down by the bar G and pin *f*, so that the close connection of gutta percha and edge of the cylinder D, is perfectly air tight.

V is a vent closed by the pin *q* driven into a soft plate of metal and capable of an easy removal at will, but at the same time capable of resisting the requisite pressure. A safety valve may be used at this point in the place of a simple vent.

The construction here given may be varied in many details, without changing the character of the apparatus, therefore I do not wish to be understood as confining myself to the precise construction of apparatus figured in the drawing, and described above.

The operation of the apparatus is as follows. The charges A, of the substances to be used for the production of gas are first prepared by slipping the bag over a metal cylinder, into which the mixture is poured. The cylinder is then withdrawn, leaving the mixture in the cloth. The upper end of the cloth is then secured, and the charge is ready for use. These charges should have such a cross section as to leave about three-eighths of an inch between its surface and the chamber *c*. If the charge consists of carbonate of soda, and tartaric acid, a small quantity of water is poured into the generator C, which when the charge is inserted will rise as indicated by red line in Fig. 2. The fount is supplied with water, and after the insertion of the charge A, and the placing of a sponge S upon it, the cap is securely fastened.

The moistening of the lower portion of the charge causes the gas to be evolved, and pass upward through the dry portion of the charge, and through the sponge, to the pipe P', and thence to the water in the fount. This generation of gas is attended with a very slight effervescence. And as the water is drawn upward by capillary attraction the generation of gas still continues in the same quiet manner until the cloth contains nothing but the resulting tartrate of soda.

The sponge S serves to dry the gas; and if it be scented will communicate the odor to the gas, so as perceptibly to flavor the soda water produced.

If marble dust be used, then the glass chamber C will be supplied with a small quantity of dilute sulfuric acid. The mar-

ble dust must be mixed with some substance that will, by absorption, diffuse the sulfuric acid through the marble dust. The action will then be the same as above stated; no agitation being required during the generation.

This mode of charging prevents the rapid generation of gas which takes place under the ordinary method, and thus relieves the apparatus from the undue pressure of such rapid generation.

In this apparatus the generation of the gas is quiet and progressive: the liquid rising gradually by the capillary attraction of the fiber of the cloth and by the absorption of the charge.

There may be a wheel within the fount to be acted on by the flow of gas from pipe P', and by its rotation serve to agitate the water and favor the mixture of the gas with it. This however is not essential.

This method of charging the generator prevents effervescence except in a very small

degree and thus renders the use of washers to purify the gas unnecessary, as nothing can be carried off with the pure gas. I would also state that bi-carbonate of soda may be inclosed in the cloth and used with dilute sulfuric acid, for the generation of carbonic acid gas; and will be found an economical method.

What I claim as new, and of my own invention and desire to secure by Letters Patent, is—

Inclosing the charge in a long fibrous case or bag A when said case or bag is used in combination with a soda water apparatus constructed and operating as above described.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

E. D. WHEELER.

Witnesses:

GEO. PATTEN,
JOHN S. HOLLINGSHEAD.