(No Model.)

S. R. DIVINE.

TABLET FOR AERATED BEVERAGES.

No. 362,727. Patented May 10, 1887.

Fig. 1.

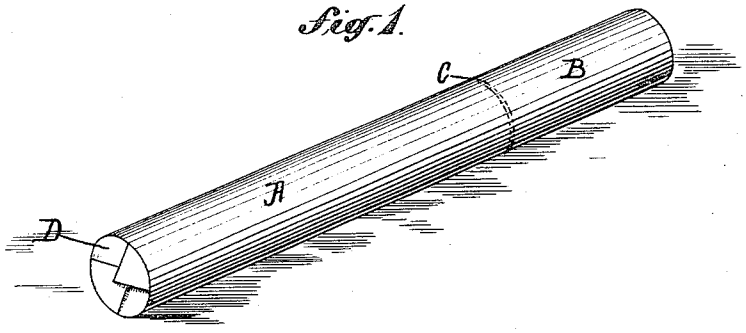
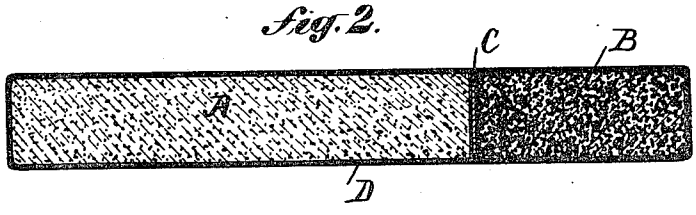


Fig. 2.



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UNITED STATES PATENT OFFICE.

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TABLET FOR AERATED BEVERAGES.

SPECIFICATION forming part of Letters Patent No. 362,727, dated May 10, 1887.

Application filed April 28, 1886. Serial No. 200,452. (No model.)

To all whom it may concern:

Be it known that I, SILAS R. DIVINE, of North Tarrytown, county of Westchester, State of New York, a citizen of the United States, have invented certain new and useful Improvements in Aerated Beverages, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in perspective, and Fig. 2 a vertical section of the same.

My invention relates to aerated beverages; and it consists in a concreted carbonated alkali and a concreted acid, as herein described, in individual masses in relative proportions, as hereinafter specified, inclosed in an envelope common to both, and with a partition therein separating the alkali from the acid, as and for the purposes hereinafter set forth.

In carrying out my invention I employ sodium carbonate or bicarbonate, or potassium bicarbonate or analogous carbonated alkalies, as a source from which to obtain carbonic acid to carbonate waters or beverages.

The acids I employ are preferably vegetable acids—such, for example, as citric, tartaric, or malic—but some inorganic acids which are innocuous to health may be used, such as phosphoric acid or acid phosphates; and in place of these acids the bisulphates of some alkalies, such as the bisulphate of potash or the bisulphate of soda, giving an acid reaction, may be used, the excess of acid therefrom being neutralized with the carbonated alkalies and evolving carbonic acid.

I form a composition of matter by taking a carbonated alkali and, preferably, a neutral adhesive material—such as gum-arabic, sugar, or glucose—and mixing them together in the form of powders, then moistening the mixture with water, and then molding or pressing the plastic mass into determined forms, preferably into cylinders, and finally allowing the forms to dry out and harden. I prefer to employ the neutral adhesive material to cause the particles of the carbonated alkali to cohere and form a concreted mass when hardened.

The adhesive material may, if desired, be moistened before being incorporated with the carbonated alkali, instead of afterward. In employing gum I find it desirable to use one part of gum to twenty parts of the alkali, and in employing sugar or glucose I find it desirable to use from ten to thirty parts of sugar or glucose to one hundred parts of the alkali. I find these proportions will effect the desired adhesion in forming the described concreted masses. When beverages are to be produced in which sugar is desired, I employ the sugar to cohere the alkali in the concreted masses, and in such cases the proportion of sugar may be increased above that hereinbefore stated to such quantity as will give the sweetness required. When beverages are desired in which there is to be no sweetness, I prefer to employ the gum as the coherent material.

I employ this concreted composition of carbonated alkali and adhesive material in fabricating aerated beverages, and I preferably employ it in connection with the powdered crystals of an acid, as hereinbefore specified, concreted into a mass in an individual form or stick.

The acid may be concreted by moistening the powdered acid crystals with water, and then molding the plastic mass into the desired form, preferably into a cylinder of the same diameter as the alkali-cylinders, and allowing the cylinder to crystallize or harden.

In carrying out my invention I take a stick or cylinder of the described concreted carbonated alkali and a stick or cylinder of the concreted acid having the relative proportions hereinafter specified, and inclose said cylinders in an envelope common to both and with a partition therein separating the alkali from the acid cylinders.

In the drawings, A indicates the concreted cylinder of carbonated alkali and gum or sugar, B the concreted cylinder of acid, C the dividing-partition, and D the common envelope. The dividing-partition is preferably composed of stout paraffined paper, so as to be impervious, and the envelope of tin-foil or other suitable material.

The article of manufacture thus constituted furnishes in a form convenient for handling and transport the materials for fabricating aerated or carbonated beverages in which the carbonic acid is absorbed by the water without the employment of elaborate apparatus,

and so that the beverages on being decanted will retain a pleasant "sparkle."

In using my invention to produce an aerated beverage I remove the acid and alkali cylinders from the envelope and place them in a determined and proper quantity of water, as hereinafter specified, in a suitable vessel or bottle, which is then hermetically closed.

I am aware that a carbonated alkali and an acid have been heretofore put up in powders, in packages, in determined proportions—as, for example, sedlitz powders—and have been employed to generate gas in an open or closed vessel containing water; but the nature and scope of my invention are essentially different to such powdered substances. The alkali and acid being in the form of powders, they dissolve almost instantly in water, and the carbonic acid is consequently evolved with great rapidity, and in the case of an open vessel passes quickly and tumultuously to the surface of the water and escapes, a small percentage only being absorbed by the water, while in case it is desired to close the vessel the generation of gas is so rapid that its escape is effected, together with a portion of the water, before the vessel can be closed. When my improved cylinders of concreted alkali and acid are employed, the cylinders will dissolve slowly in the water, and the evolution of the carbonic acid will be correspondingly gradual, the pressure in the vessel being gradually increased, and the gas, as it is slowly generated and rises in fine bubbles, being readily absorbed by the water, so that when the vessel is opened and the beverage is decanted it will possess a continuing "life" and "sparkle."

The relative proportions in which the concreted carbonated alkali and concreted acid are employed are such as will liberate carbonic acid in a known volume to correspond to the capacity of the vessel in which the beverage is to be formed and the pressure to be desired. To produce an aerated beverage with a pressure of from four to five atmospheres, which is desirable in fabricating a pleasant and palatable drink, I employ about sixty grains of sodium bicarbonate as the alkali to about forty-five grains of citric acid to carbonate about eight ounces of water and give an apparently neutral solution. By increasing or decreasing the proportion of the acid a solution will be produced which will be distinctively acid or alkaline, respectively.

A desired flavor may be incorporated with the concreted alkaline-cylinder, so as to produce a flavored beverage. Well-known essential oils employed for flavoring may be used. The oil may be mixed with the gum or sugar, or with the moistened plastic mass of the carbonated alkali and gum or sugar, previous to the drying or hardening of said cylinders. The proportions in which the flavors are introduced may be varied at pleasure.

I do not claim herein the process of making aerated beverages by placing a concreted carbonated alkali and a concreted acid, such as described, in individual masses in a certain volume of water in a closed vessel and allowing the alkali and acid to dissolve, thus evolving carbonic acid which is absorbed by the water, as the same is the subject-matter of and is claimed in my application for Letters Patent, Serial No. 214,783, filed in the Patent Office September 28, 1886.

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

As an article of manufacture, a concreted carbonated alkali and a concreted vegetable acid, in individual masses and in the relative proportions specified, inclosed in an envelope common to both masses, and with a partition therein separating said masses, as and for the purpose specified.

SILAS R. DIVINE.

Witnesses:
ARTHUR FITCH,
WM. P. MERRITT.