No. 734,305.

PATENTED JULY 21, 1903.

F. CRÔTTE.

PROCESS OF PRESERVING BEER.

APPLICATION FILED JAN. 19, 1900. RENEWED NOV. 26, 1902.

NO MODEL.

Fig. 1.

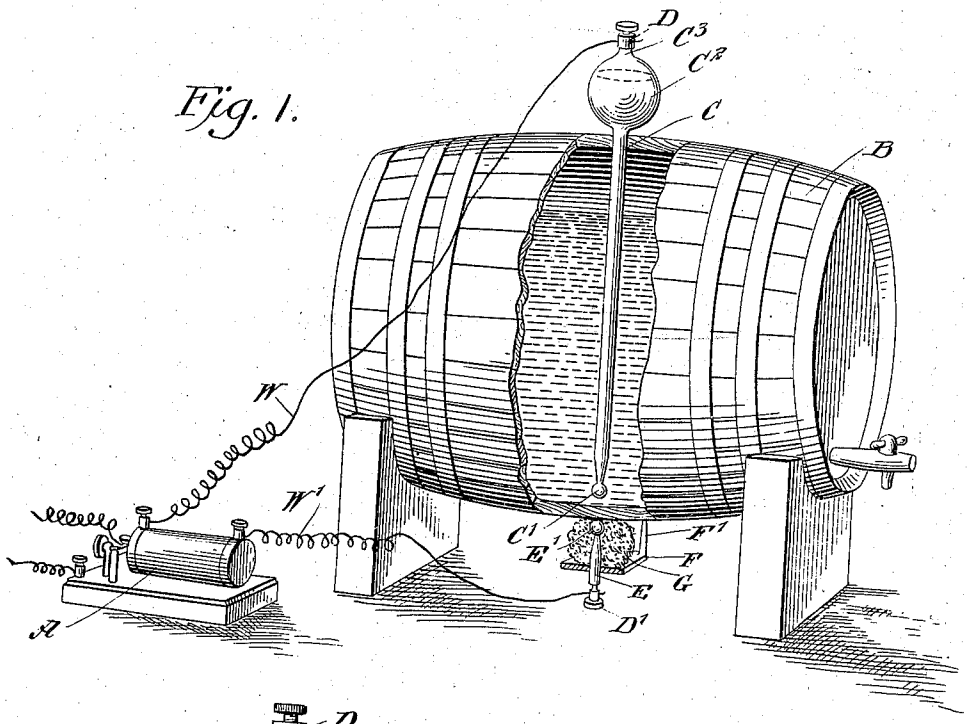


Fig. 2.

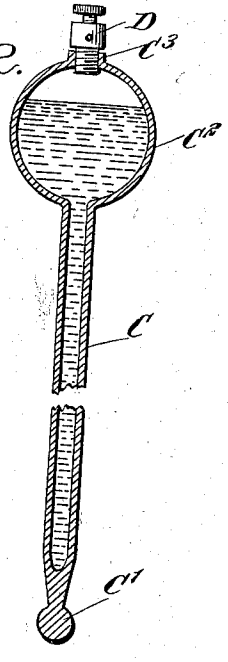
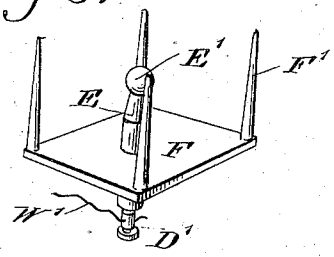


Fig. 3.



WITNESSES:

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No. 734,305. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

FRANCISQUE CRÔTTE, OF NEW YORK, N. Y.

PROCESS OF PRESERVING BEER.

SPECIFICATION forming part of Letters Patent No. 734,305, dated July 21, 1903.

Application filed January 19, 1900. Renewed November 26, 1902. Serial No. 132,951. (No specimens.)

To all whom it may concern:

Be it known that I, FRANCISQUE CRÔTTE, a citizen of the French Republic, residing in New York, borough of Manhattan, in the State of New York, have invented certain new and useful Improvements in Processes of Preserving Beer, of which the following is a specification.

This invention relates to the preservation of beer or other liquids; and the object of the invention is to provide a process by which the organic or germ life in the beer is rendered harmless, so that the beer will keep without deterioration for a great length of time.

The invention consists of the process of preserving beer which comprises the steps of placing a suitable preservative substance in a receptacle in contact with the beer to be treated and then passing through said substance, receptacle, and the beer an electric current of high tension, said current being of such direction, strength, tension, and character as to induce a cataphoric transference of said preservative substance through the receptacle into the beer.

The invention consists also in certain other combinations of steps hereinafter described and claimed, all, however, involving the same principle of cataphoric action.

In the accompanying drawings, which illustrate an apparatus in which the process may be carried out, Figure 1 is a perspective view of the apparatus with parts broken away. Fig. 2 is a sectional elevation of one of the electrodes, and Fig. 3 shows the other electrode and its support.

Similar letters of reference indicate corresponding parts.

A indicates a powerful spark-coil of any suitable size adapted to produce the current required, and B is a cask or other suitable vessel for containing the beer to be subjected to the treatment. Through the top of the cask extends an electrode C, which is preferably in the form of a tube provided at its closed lower end with a knob C', the top of the tube being preferably enlarged, as at C^2. The tube is filled with an antiseptic, such as boric acid of the U. S. P. standard solution of peroxid of iron or other suitable preservative substance, either solid or in solution. The tube is preferably of copper, silvered externally, but may be made of any other suitable substance. The nipple C^3 receives the binding-post D, which thus serves to close the inlet of the tube.

At the lower part of the cask at a point preferably directly opposite the electrode C is located the opposite electrode E, also preferably of copper and terminating at its upper end in a knob E', which is arranged close to or in contact with the cask B. A frame F, of suitable non-conducting material, secured to the cask by means of points F', may be employed for retaining the electrode E in place. The binding-post D' of the electrode E is connected by a wire or other conductor W' to one terminal of the secondary spool of the coil, while a conductor W connects the binding-post D with the other terminal of said spool. Within the frame F and in contact with the electrode E, as well as with the cask, is a sponge G or wad of any suitable absorbent material, which may be soaked with water or with the same solution as that contained within the tube C. It is not necessary, however, that the sponge G be employed. The same results are obtained when the sponge is omitted. It is preferable to use the sponge, however, as the discharge of sparks from the knob C' is thereby spread to some extent.

The process is carried out in this apparatus as follows: The ask is filled with fully-fermented beer. The tube-shaped receptacle C is inserted in position, as shown, and filled with the preservative substance. The electrode E is then put in place, with the sponge, if used, and the electrical connections made, so that the tube C forms the positive electrode. In order to produce the transference of the substance, it is necessary that the current employed shall be a practically uninterrupted one. When the circuit is in such condition as to yield the well-known silent or brush discharge, cataphoric action will result. The current is then passed through the beer for a period of from five to ten minutes. In order to further insure the destruction of organic life in the beer, it is preferable to supplement the passage of the high-tension cur-

rent by passing a current of low tension—say one hundred and ten to one hundred and fifty volts—through the beer for five to ten minutes.

The high and low tension currents may be obtained from any suitable sources.

The effect of the passage of the high-tension current is to convey the preservative substance in the receptacle C in infinitesimal quantities through the tube-wall into the beer by cataphoric action. By the combined action of the current and the preservative substance conveyed by it and under its influence the organic life in the beer is rendered entirely harmless, so that the beer will remain in good condition without deterioration in any way for a great length of time. The infinitesimally small quantities of antiseptic are conveyed into the beer under conditions favorable to most effective action and remaining in the beer serve to retard the growth of new organic life, while the quantity of the substance introduced is so small as not to change the taste of the beer or impart any foreign flavor thereto. The process has the further advantage that it can be carried out in a very short time.

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

1. The herein-described process of preserving beer, which consists in placing a suitable preservative substance in a receptacle in contact with the beer to be treated, and then passing through said substance, receptacle and the beer an electric current of high tension, said current being of such direction strength, tension and character as to induce a cataphoric transference of said preservative substance through the receptacle into the beer, substantially as set forth.

2. The herein-described process of preserving beer, which consists in placing a suitable preservative substance in a receptacle in contact with the beer to be treated, then passing through said substance, receptacle and the beer an electric current of high tension, said current being of such direction strength, tension and character as to induce a cataphoric transference of said preservative substance through the receptacle into the beer, and then passing through the beer an electric current of a comparatively low tension, substantially as set forth.

3. The herein-described process of preserving beer, which consists in placing the beer to be treated in a non-metallic, porous vessel, placing the preservative substance in a receptacle in contact with the beer, said receptacle forming the positive electrode of an electric circuit, placing the opposite electrode at a point outside of said vessel containing the beer, placing a moistened sponge in contact with the latter electrode and the vessel, and passing an electric current of high tension between said electrodes, said current being of such strength, tension and character as to induce a cataphoric transference of the preservative substance through the receptacle into the beer, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANCISQUE CRÔTTE.

Witnesses:

ANDRÉ BUSTANOBY,

GEO. W. REEVES.