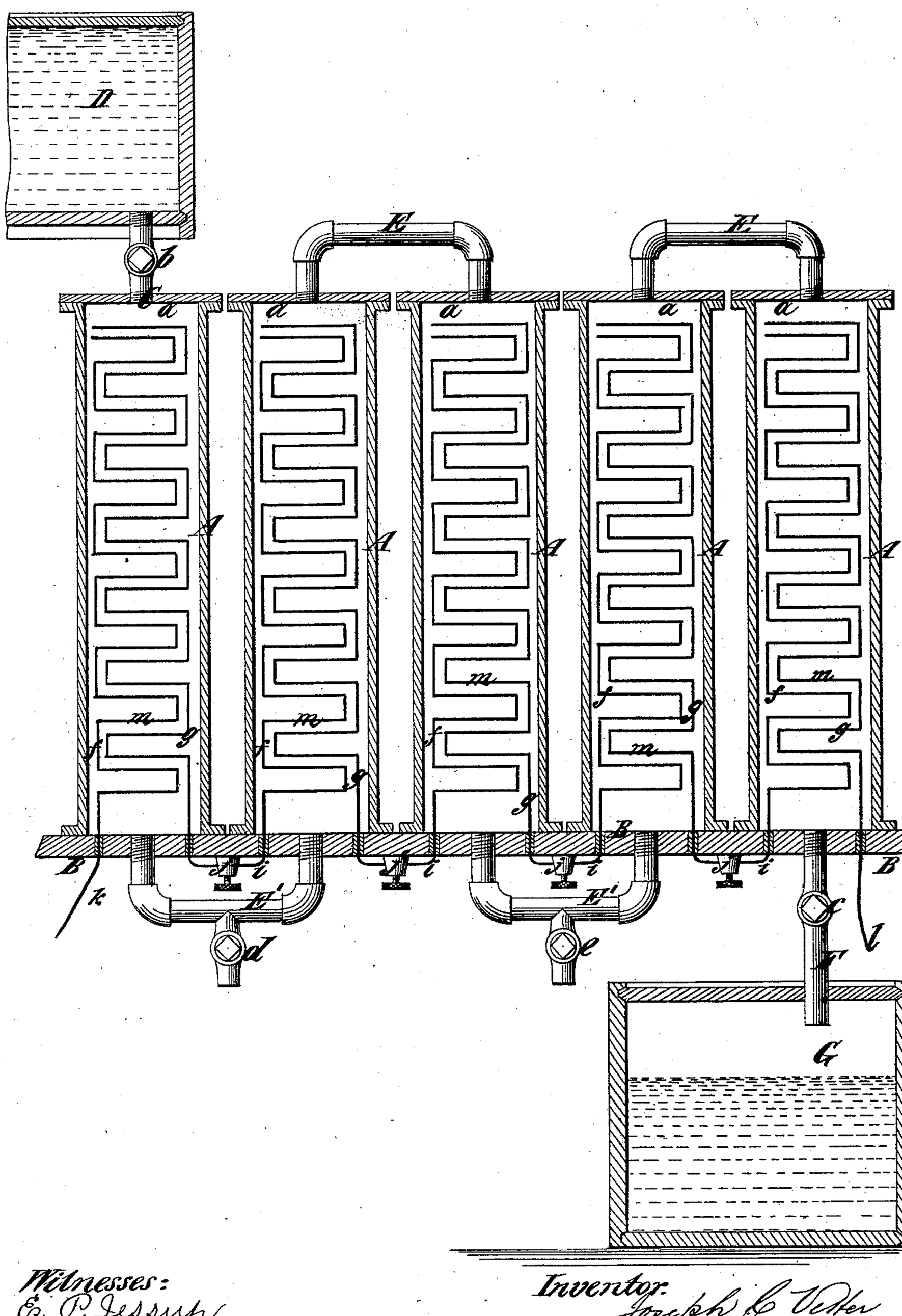
J. C. VETTER.

Apparatus for Aging Liquors.

No. 223,558. Patented Jan. 13, 1880.



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UNITED STATES PATENT OFFICE.

JOSEPH C. VETTER, OF NEW YORK, N. Y., ASSIGNOR TO GARLAND TURELL, BENJAMIN PERKINS, AND CORNELIUS FELLOWES, OF SAME PLACE, ONE-FOURTH TO EACH.

APPARATUS FOR AGING LIQUORS.

SPECIFICATION forming part of Letters Patent No. 223,558, dated January 13, 1880.

Application filed July 11, 1879.

To all whom it may concern:

Be it known that I, JOSEPH C. VETTER, of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Apparatus for Treating Liquors by Electricity, of which the following is a specification.

My invention relates to an apparatus for aging alcoholic or vinous liquors, &c., by means of electricity; and its object is to effect the more thorough and expeditious treatment of liquors, and to regulate or control such treatment.

This invention consists in an apparatus for facilitating the deodorization of alcoholic and vinous liquors, embodying a vessel or chamber having inlet and outlet pipes for permitting a circulation of liquor through the said vessel or chamber, and wires arranged within said vessel or chamber, through which wires passes a current of electricity, all of which will be fully hereinafter described.

The invention further consists of certain other combinations of parts, which will be particularly hereinafter set forth.

The accompanying drawing represents a vertical section of an apparatus embodying my improvements.

A designates a series of vessels or chambers, here represented as mounted upon and secured to a table or plate, B, so as to form water-tight joints, and preferably closed at the top by heads *a*. These vessels may be made of any suitable non-conducting material, or they may be lined with non-conducting material, and though I have here represented them as five in number, one or more may be employed. When a single vessel is used it should be provided with an inlet-pipe near one end and an outlet-pipe near the other end, so as to admit of a free circulation of liquor through the vessel. When a series are employed liquor is fed through an inlet-pipe to one of the vessels, and from thence passes through pipes or passages connecting the several vessels of the series together, and from the last vessel escapes through an outlet pipe or passage. In this example of my invention C designates an inlet-pipe for supplying liquor to the first vessel of the series from a tank or vat, D, which, in this instance, is above the apparatus, and hence would effect a circulation by gravity. When the tank or vat is below the level of the vessels A a pump may be employed for effecting the circulation.

By means of pipes E and E′ the several vessels or chambers are so connected that the liquor entering the first vessel of the series passes up one cylinder and down the next until it reaches the last of the series, whence it passes through an outlet-pipe, F, to a tank, G. The pipes C and F are shown as provided with cocks or valves *b* and *c*, by which the rapidity of the circulation may be increased or diminished to suit the kind and quality of the liquor to be treated.

The pipes E′ are provided with cocks or valves *d e*, so arranged that by opening the cock *d* the liquor only passes through the first vessel or chamber and is discharged, and by closing the cock *d* and opening the cock *e* the liquor passes through three vessels, and by closing both said cocks the liquor circulates through the whole series of vessels and passes out the pipe F.

If desirable, three-way cocks or valves may be substituted for the cocks or valves *d e*, thus permitting the contents of any vessel or chamber to be drawn off separately.

Within each vessel of the series are placed a pair of wires, *f g*, disconnected from each other, those in each vessel being connected by wires *i*, secured as at *f*, and the wires in the first and last vessels of the series being connected, by wires *k l*, with an electric battery or any suitable machine by which electricity is generated.

Any description of metallic wires may be employed; but in order to present an extensive active surface, and to render such surface as effective as possible, I prefer to employ wires of the form here represented, which consist of wires of platinum or other material extending in zigzag lines *m* across the vessels or chambers transversely to the direction of the liquor circulating through such vessels, as by this means the liquor in its passage strikes directly upon the electrodes.

In treating liquors which require to be sub-

jected to the action of electricity for a longer period than others, I partially close the cocks or valves *b* and *c*, thus rendering the circulation less rapid, and pass the liquor through the whole series of vessels, while in treating liquors which only require a slight application of electricity, I open either the cock *d* or the cock *e*, as the case may be, in which case the liquor circulates through one or three vessels, and is discharged.

Although the vessels or chambers are here shown as arranged side by side, a series of open vats or tanks, arranged one below the other, might be employed, in which case liquid would flow from one to the other by gravity.

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

1. The combination, with a series of connected vessels or chambers, of a supply and a receiving tank, an inlet and an outlet pipe connecting, respectively, therewith, and a series of electrodes arranged within said series of vessels or chambers, substantially as described, whereby liquor is permitted to pass from the supply-tank through the vessels or chambers in contact with the electrodes, and from thence into the receiving-tank, as set forth.

2. The combination, with a vessel or chamber, of inlet and outlet pipes for permitting a circulation of liquor through the said vessel or chamber, and wires extending in zigzag lines across said vessel or chamber transversely to the direction of the circulation of the liquor therein, substantially as specified.

3. The combination, with a series of vessels or chambers, each containing wires, of pipes connecting said vessels or chambers, and permitting the circulation of liquor through them, and one or more cocks or valves in said connecting-pipes for controlling the number of vessels or cylinders through which the liquor passes, substantially as specified.

4. The combination, with the vessels A, of the inlet and outlet pipes C F, provided with valves *b c*, the pipes E E′, valves *d e*, and wires *f g*, arranged substantially as specified.

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Witnesses:

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