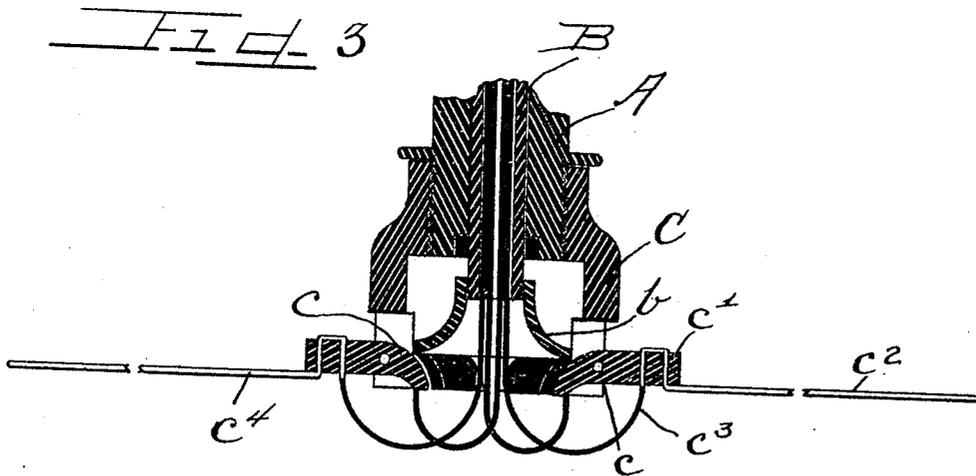
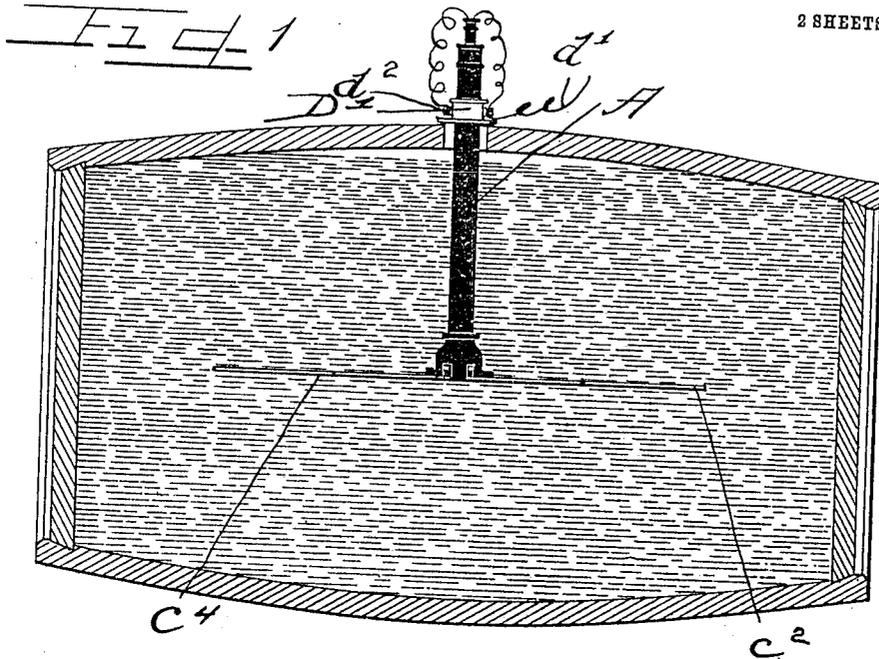


J. SEITZ.
 APPARATUS FOR AGING LIQUORS.
 APPLICATION FILED SEPT. 21, 1907.

950,579.

Patented Mar. 1, 1910.
 2 SHEETS—SHEET 1.



WITNESSES
 J. W. Angell
 A. H. Farnish

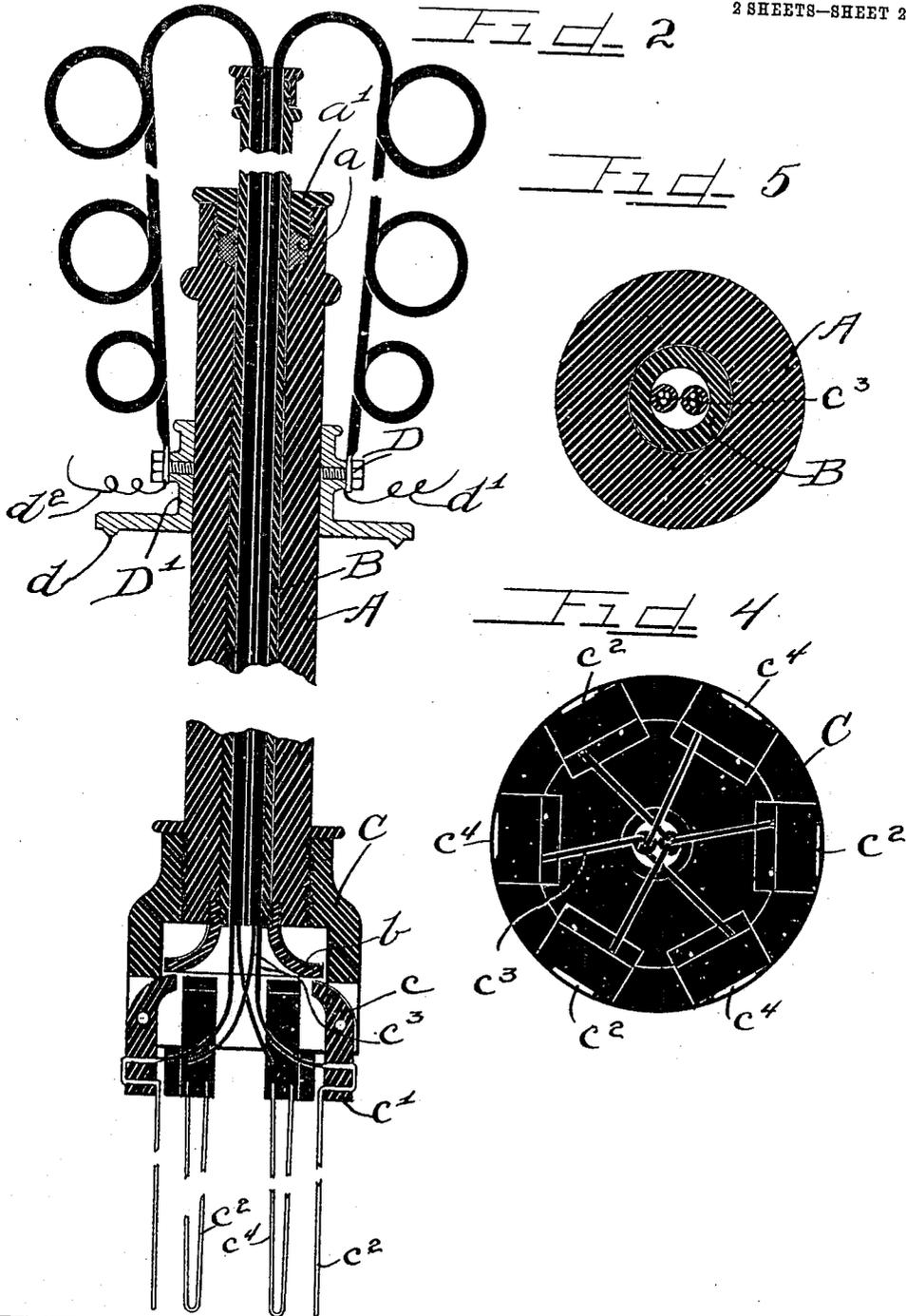
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WITNESSES

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APPARATUS FOR AGING LIQUORS.

950,579.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed September 21, 1907. Serial No. 392,961.

To all whom it may concern:

Be it known that I, JOHN SEITZ, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Apparatus for Aging Liquor; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to apparatus for aging liquors and more particularly to means for discharging a current of electricity into the liquor to age the same.

It is well known that certain chemical changes, the character of which is perhaps not fully known, occur in liquor when kept for considerable periods of time, said changes having a tendency to improve the liquor or as it is termed, to age it.

Heretofore various devices have been used to hasten the aging operation and in some instances various chemical substances have been inserted with the effect of injuring the liquor, instead of aging it. Among these may be mentioned certain bacteria that have been tried for the purpose, but so far as known to applicant, the various methods for this purpose heretofore devised have not proven entirely successful, and to the present time, liquor is usually kept for long periods of time, for the purpose of improving its quality. In this way, large amounts of capital are tied up indefinitely in effect causing a considerable loss to the manufacturers and owners.

It is the object of this invention to provide mechanism for subjecting the liquor to currents of electricity with a view to improving its quality, such electrical action having the same effect in improving the quality of the liquor as would be secured by storing the liquor for a long period of time for the purpose of aging it.

It is also an object of the invention to provide mechanism for subjecting the liquor to such electrical action as will effect the result desired and to so construct said mechanism as to render the same not injurious to the liquor and not capable of being itself injured by the liquor or by the combined action of the electrical discharge and the action of the liquor.

It is a further object of the invention to afford an exceedingly cheap, simple, durable and compact apparatus for the purpose specified, by the use of which large quantities of liquor can be treated at one time.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a central longitudinal section of a cask of liquor showing the apparatus in place and adjusted for use. Fig. 2 is an enlarged fragmentary vertical section of a device embodying my invention showing the conductors collapsed inwardly. Fig. 3 is a similar view of the lower end of said instrument showing the apparatus adjusted for use with the conductors directed radially outward. Fig. 4 is a bottom plan view of the device shown in Fig. 2. Fig. 5 is a central transverse section.

As shown in the drawings: A indicates a sleeve preferably of non-conducting material such as hard rubber which is externally threaded at its lower end and at its upper is counter bored and internally threaded to afford a seat for a gasket *a* and to receive the jam nut *a'* thereon. Fitted within said sleeve and slidable therein is a tube B also of hard rubber or insulating material threaded on the lower end of which is a flaring foot piece *b* which extends outwardly at its periphery as shown somewhat beyond the periphery of the sleeve A. Threaded on the sleeve A is a head C which as shown is provided at equal distances apart in its periphery with longitudinal downwardly directed slots in each of which is pivotally secured a lever *c* the upper end of which curves upwardly and inwardly, as shown in Figs. 2 and 3, within the cavity of said head and into position to be engaged by the foot piece *b*, and thereby forced downwardly. The lower ends *c'* of said levers normally depend below said head but are adapted to be thrown outwardly as shown in Fig. 3, when said upper ends are forced downwardly by the foot piece *b*. Apertures are provided at the lower ends of said levers and engaged therein as shown in Figs. 2 and 3, are the ends of the looped electrodes *c''*, which may be of copper, silver, or any suitable material, and which when the levers are thrown outwardly, as shown in Fig. 3, extend radially from said head to near the sides and ends of the casks

in position to affect a large area of the fluid within the cask. Connected on the inner ends of said loops are insulated conductors c^3 which as shown lead upwardly and inwardly and are united in cables which extend through the inner tube B the end of which projects some distance above the sleeve A. The ends of said cables are brought downwardly on each side of said sleeve and are connected to a binding post D secured upon a metallic sleeve D' which fits closely to the sleeve A and at the bottom of which is a peripheral flange d adapted to cover the bung hole of the barrel as shown in Fig. 1. Also connected with said binding posts are conductors d^1-d^2 which lead to any suitable source of electrical current. Of course said sleeve D' may be rigidly secured on the sleeve A by means of a set screw or said binding posts may also serve for that purpose.

The operation is as follows: The cask E containing the liquor is placed upon its side as shown in Fig. 1 with the bung hole uppermost and the head C of the aging apparatus with the electrodes e^2 thereon collapsed, as shown in Fig. 2, is inserted therethrough to a distance to bring said head approximately to the center of the barrel or cask. The tube B is then pressed downwardly to the position shown in Figs. 1 and 3, the foot piece b engaging the upper ends of the levers c and throwing the lower ends thereof upwardly and outwardly and the electrodes e^2 are thus directed radially outward approximately in the same plane. Of course, the device is supported upon the flange d of the sleeve D' which is rigidly engaged on the sleeve A for that purpose at the proper point.

In connecting up the instrument the positive wires are connected with alternate electrodes e^2 and the negative wires with the remaining electrodes e^4 . In consequence the positive and negative electrodes alternate on said head. When current is turned on the flow from one to the other of said electrodes takes place through the liquid or liquor utilizing the same for the conductors of the transfer and producing therein a continuous electrical action as well as a convective action in the liquor itself, constantly bringing fresh or untreated liquor in contact with the wires.

In practice it has been found that a cask of liquor treated electrically as described from 36 to 72 hours has all the appearance and is undistinguishable from liquor that has been "aged" for several years, and inasmuch as a low voltage may be used for this purpose, it is obvious that a very great saving may be effected by the use of the simple apparatus herein described.

Of course details may be varied. I therefore do not purpose limiting this application for patent otherwise than necessitated by the prior act.

I claim as my invention:

1. An aging device for liquors embracing a non-conducting reciprocable head adapted to be submerged in the liquor, radially directed positive and negative electrodes secured thereon and spaced a distance apart and electrically connected with a source of current.

2. An electrical aging apparatus for liquors embracing a non-conducting head adapted to be submerged in the liquor, radially directed positive and negative electrodes pivotally secured thereon, a source of current and conductors leading therefrom to said electrodes.

3. An electrical aging device for liquors embracing a non-conducting head adapted to be submerged in the liquor, axially directed positive and negative electrodes and means for adjusting the electrodes to extend radially of the head.

4. An electrical aging device for liquor embracing non-conducting supporting means, electrodes extending longitudinally thereof and means for adjusting the electrodes to lie transversely of the support, said electrodes adapted to assume their normal position by gravity.

5. A liquor treating device of the class described embracing a non-conducting sleeve, a head thereon adapted to be submerged in the liquor to be treated, pivotally supported naked electrodes depending normally from said head, insulated positive and negative cables extending through said sleeve and connected alternately with said electrodes and leading to a source of current and means adapted to throw the outer ends of said submerged electrodes radially outward from said head.

6. A device for treating liquor contained in a cask embracing a non-conducting sleeve, a head thereon adapted to be submerged in the liquor to be treated through the bung hole of the cask, pivotally supported naked electrodes depending normally from said head, insulated positive and negative cables extending through said sleeve and connected alternately with said electrodes, and leading to a source of current and means slidable in this sleeve adapted to throw the outer ends of said submerged electrodes radially outward from said head.

7. A device for treating liquor in casks embracing a non-conducting sleeve, a head thereon adapted to be introduced through the bung hole in a cask and be submerged in the liquor therein to be treated, pivotally supported non-insulated electrodes depending normally from said head, insulated positive and negative cables extending through said sleeve and connected alternately with said electrodes and connected with a source of current, and means adapted to throw the

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ends of said submerged electrodes radially outward to lie in a substantially horizontal plane.

8. In a device of the class described the combination with a cask of a sleeve, and a head thereon, on the lower end thereof both of insulating material and adapted to be inserted through the bung of said cask, depending arms pivoted on said head having upper curved heads which project within the same, non-insulated electrodes secured to the lower ends of said arms or levers, a non-conducting tube slidably secured in said sleeve, a foot piece on the lower end of said tube within the head adapted to engage the inwardly curved ends of said arms or levers, a positive and a negative cable extended through said tube and connected alternately with said electrodes.

9. In a device of the class described the combination with a cask of a sleeve and a head on the lower end thereof both of insulating material and adapted to be inserted through the bung of said cask, depending arms pivoted on said head having upper curved heads which project within the same, non-insulated electrodes secured to the lower ends of said arms or levers, a non-conducting tube slidably secured in said sleeve, a foot piece on the lower end of said tube within the head adapted to engage the inwardly curved ends of said arms or levers, a positive and a negative cable extended through said tube connected alternately with said electrodes, and an adjustable clamp on said sleeve adapted to support the same upon the cask and to cover the bung.

10. In a device of the class described the combination with a cask of a sleeve and a head on the lower end thereof both of insulating material and adapted to be inserted through the bung of said cask, depending arms pivoted on said head having upper curved heads which project within the same, non-insulated electrodes secured to the lower ends of said arms or levers, a non-conducting tube slidably secured in said sleeve, a foot piece on the lower end of said tube within the head adapted to engage the inwardly curved ends of said arms or levers, a positive and a negative cable extended through said tube connected alternately with said electrodes, an adjustable clamp on said sleeve adapted to support the same upon the cask and to cover the bung, binding posts thereon to which the outer ends of said cables are connected and conductors leading from the respective binding posts to a source of current supply.

11. In a liquor treating device insulating supporting means and electrodes pivoted thereto to extend longitudinally of the support for insertion into the liquor and adapted to swing transversely of the support

when in the liquor to cover a large area of the liquor treated.

12. In a liquor aging apparatus a support, electrodes secured thereto adapted to occupy an area of less diameter than the support, and means for actuating the electrodes to occupy an area of greater diameter than the support.

13. In a liquor aging device an insulating support, electrodes secured thereto adapted to fold together and move apart to cover a large area and reciprocating means for adjusting said electrodes.

14. In a liquor treating device oscillatory electrodes and mechanism for oscillating the same to cover a space of large diameter and small diameter.

15. In a liquor treating device oscillatory electrodes and mechanism for adjusting the same to restrict the electrodes to enter a small orifice and to extend the electrodes after entering the orifice.

16. In a device for treating liquor an insulating support, electrodes secured thereto adapted to extend radially or axially of the support.

17. In combination with a receptacle for containing liquor, an insulating support, positive and negative electrodes pivoted to the support and means for simultaneously adjusting all of the electrodes to radiate outwardly from the support.

18. In combination with a receptacle for containing liquor, an insulating support, positive and negative electrodes pivoted to the support and means for adjusting the insulating support to vary the position of the electrodes in the receptacle.

19. In combination with a receptacle for containing liquor, an insulating support, positive and negative electrodes pivoted to the support and means for adjusting the electrodes when in the receptacle.

20. In a liquor treating device an insulating support, electrodes secured thereto and reciprocable means for adjusting the electrodes.

21. In a device of the class described an insulating supporting member, alternate positive and negative electrodes adapted to fold together and reciprocable means adapted to swing the electrodes apart.

22. In a device of the class described concentric insulating sleeves, one adjustable relatively of the other, insulating levers adapted to be actuated by movement of one of said sleeves, electrodes rigidly secured to the levers and means secured to the other sleeve for securing the device in place.

23. In a device of the class described concentric insulating sleeves, one adjustable relatively of the other, insulating levers adapted to be actuated by movement of said adjustable sleeve, electrodes rigidly secured

- to the levers, means for adjustably attaching one of said sleeves to an object and electrical conductors leading therefrom to a source of supply.
- 5 24. In combination with a cask an insulating support, electrodes secured thereto adapted to be contracted and inserted through the bung hole of the cask and means for swinging the electrodes after insertion into the cask to cover large area.
- 10 25. In combination with a cask or barrel, an insulating support adapted for insertion through the bung hole of the barrel, electrodes adapted to extend longitudinally of the support and to pass through the bung hole of the barrel and means for adjusting the electrodes to extend longitudinally and transversely of the barrel.
- 15 26. A device for electrically treating liquor embracing in combination with a barrel means adapted to be inserted through the bung hole of the barrel and pivotally supported above the bottom of the barrel adapted to be adjusted to act on a large area of the liquor when in the barrel.
- 20 27. An apparatus for electrically treating liquor in barrels embracing an insulating support of less diameter than the bung hole of the barrel, electrodes secured thereto adapted to be adjusted for insertion through the bung hole and means for adjusting the electrodes when in place in the barrel.
- 25 28. An apparatus for electrically treating liquor comprising a sleeve, a tube slidable therein, a stuffing box in the sleeve around the tube, a hollow member secured to the sleeve, levers pivoted thereto having rounded ends extending into the hollow member, said sleeve, tube, member and levers being of insulated material, electrodes secured to the levers and means engaged to the tube for actuating the levers.
- 30 29. An apparatus for electrically treating liquor comprising a sleeve, a tube slidable therein, a stuffing box in the sleeve around the tube, a hollow member secured to the sleeve, levers pivoted thereto having rounded ends extending into the hollow member, said sleeve, tube, member and levers being of insulated material, electrodes secured to
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the levers, means engaged to the tube for actuating the levers and a positive and negative cable extending through the tube and connected alternately with the electrodes.

30. An apparatus for electrically treating liquor comprising a sleeve, a tube slidable therein, a stuffing box in the sleeve around the tube, a hollow member secured to the sleeve, levers pivoted thereto having rounded ends extending into the hollow member, said sleeve, tube, member and levers being of insulated material, electrodes secured to the levers, means engaged to the tube for actuating the levers, a positive and negative cable extending through the tube and connected alternately with the electrodes and a metallic sleeve secured on the insulated sleeve and electrically connected with the cable.

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31. In a device of the class described concentric tubular members of insulated material, one slidable within the other, a hollow insulated member secured to the other member, levers pivoted thereto having their inner ends rounded and extending into the hollow member, means secured to the slidable tubular member for contacting with the rounded ends of the levers and adjusting the same and electrodes secured to the levers.

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32. In a device of the class described concentric tubular members of insulated material, one slidable within the other, a hollow insulated member secured to the outer member, levers pivoted thereto having their inner ends rounded and extending into the hollow member, means secured to the slidable tubular member for contacting with the rounded ends of the levers and adjusting the same, electrodes secured to the levers and means electrically connecting said electrodes to send current therethrough.

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In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOHN SEITZ.

Witnesses:

C. W. HILLS,
W. P. OWENS.