

(No Model.)

C. A. STEEN.
PROCESS OF AGING LIQUORS.

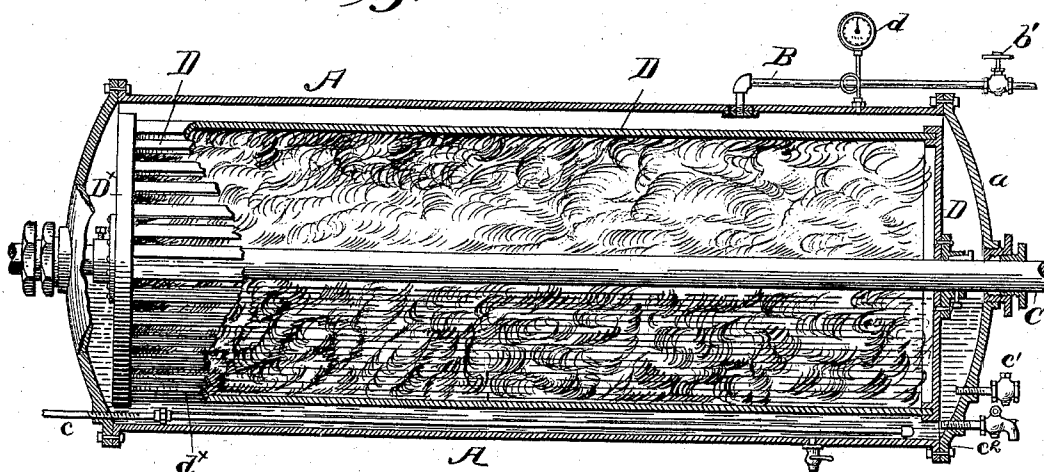
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Fig. 1.



Fig. 2.



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PROCESS OF AGING LIQUORS.

SPECIFICATION forming part of Letters Patent No. 540,279, dated June 4, 1895.

Application filed October 30, 1893. Serial No. 489,470. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN A. STEEN, a subject of the King of Denmark, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Processes of Aging Liquors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain improvements in the art of aging spirits and has for its object, in part, to improve the method or process generally pursued in aging liquors whereby the time required for the completion of the process is shortened and a better flavor imparted to the spirits, and in part, to provide an apparatus of a simple and novel construction whereby the process may be carried into effect, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my invention may be the better understood I have illustrated in the accompanying drawings an apparatus such as I prefer for carrying out the same, in which—

Figure 1 is a transverse vertical section of the apparatus, and Fig. 2 a longitudinal vertical section of the same.

In the drawings A represents the outer inclosing shell or casing of a cylindrical form having open ends over which are secured in an air-tight manner, the flanged heads *a*. An air-inlet pipe B provided with a pressure-gage *b* and a cock *b'* communicates with the upper part of casing A and the lower part of the same is provided with an inlet pipe *c'* and an outlet pipe *c*² for the admission and withdrawal of the spirits. A heating coil *c* is also provided, preferably arranged below the liquid level in the casing A, whereby the contents thereof may be heated to a proper temperature for carrying out my improved process.

C is a shaft extending longitudinally through the casing A, its opposite ends being provided with packed journals in the heads *a* thereof, and on this shaft C within the casing are secured the heads D^x, D^x of a drum

D, said heads being provided on their inner adjacent faces with annular grooves *d*, *d* to receive the opposite ends of the slats or strips *a'*, *a'* forming the periphery of the drum D. These slats *a'* are separated by narrow spaces so as to permit the inflow of the spirits to the interior of the drum D which is filled with a loose packing or filling of broken charcoal, wood shavings or other oxidizable material.

In carrying out my process with such an apparatus I admit a sufficient volume of the raw spirits to the shell A to fill the same about one half full as indicated in the drawings. When this has been done, atmospheric air, ozone or oxygen gas is admitted under pressure through the pipe B, and hot air or water is admitted to the heating coil *c* so as to raise the temperature of the contents to a proper degree of heat. The drum is now set in slow rotary motion and as the same rotates it will be seen that the filling thereof is dipped or immersed below the surface of the raw spirits. In the continued rotation of the drum the saturated portions of the filling of the drum D emerge above the liquid level, and the raw spirits borne thereby will be exposed in thin films and streams to the oxidizing agency of the air, ozone or oxygen on the one hand and the action of the oxidizable fillings on the other. In this manner the contents of the casing will be brought in direct contact with the oxygen whereby the amylic alcohol therein contained will be resolved into the ethers which impart the flavor or bouquet to aged spirits.

Having thus described my invention, I claim—

1. In an apparatus for aging spirits, the combination with an air-tight vessel having an air-inlet and an inlet and an outlet for the spirits, of a shaft rotatively mounted in said vessel, a hollow drum mounted on said shaft within said casing, said drum having a slatted periphery, and a filling of porous oxidizable material arranged in said drum, substantially as set forth.

2. In an apparatus for aging spirits, the combination with an air-tight vessel having an air inlet and an inlet and an outlet for the spirits, of a shaft arranged across said vessel and provided with stuffing boxes at the points where it passes through the walls thereof, a

drum composed of heads mounted on said shaft inside said casing and having corresponding grooves in their adjacent faces, and wooden slats arranged longitudinally of said
5 shaft with their free ends engaging the grooves in the respective heads, and a porous filling of oxidizable material arranged in said drum, substantially as set forth.

In testimony that I claim the foregoing I hereunto affix my signature this 20th day of 10 September, A. D. 1893.

CHRISTIAN A. STEEN. [L. S.]

In presence of—

JON BRACKHARDT,

J. K. BARTOW.