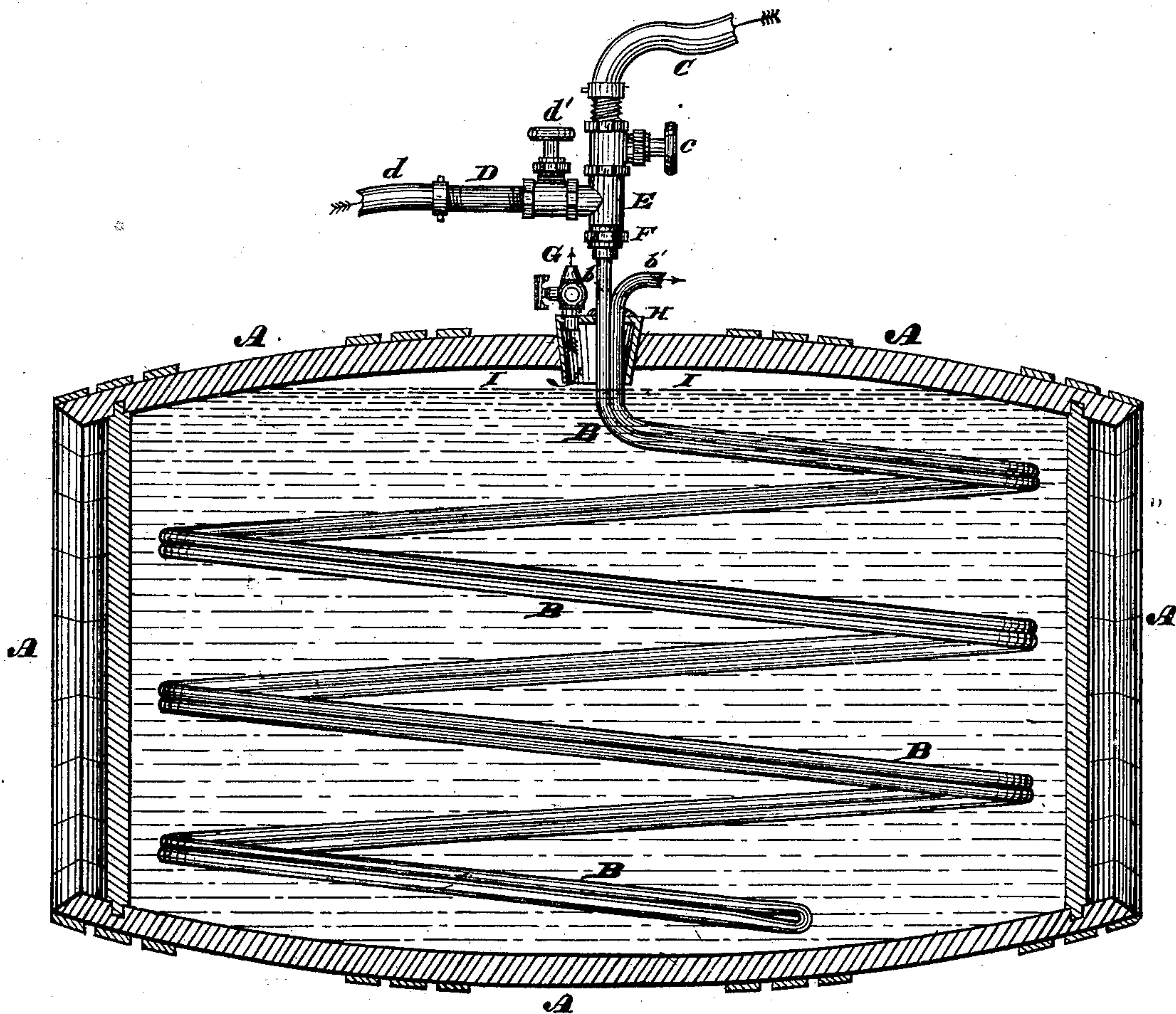


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 Apparatus for Aging and Purifying Liquors.
 No. 221,316. Patented Nov. 4, 1879.



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UNITED STATES PATENT OFFICE.

CHARLES H. JACOB AND JOHN W. LOCHNER, OF CINCINNATI, OHIO.

IMPROVEMENT IN APPARATUS FOR AGING AND PURIFYING LIQUORS.

Specification forming part of Letters Patent No. **221,316**, dated November 4, 1879; application filed August 13, 1879.

To all whom it may concern:

Be it known that we, CHARLES H. JACOB and JOHN W. LOCHNER, both residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Apparatus for Aging and Purifying Liquors, of which the following is a specification.

Our invention relates to that class of apparatus most especially adapted for rapidly imparting that quality and superiority usually obtained by age to alcoholic liquors.

Our invention has for its object the provision of a new and improved apparatus for accomplishing the said result with greater rapidity and economy, in consequence of increased evaporating and cooling surface, and at the same time preventing the undue escape of essential oils necessary to be retained in order to preserve the quality of the liquor, and therefore with more satisfactory results than have been attained in the apparatus employed heretofore.

Our invention consists of a double coil of evaporating and cooling pipe on the inside of a barrel, adjustably secured in the orifice in the bilge of the same, and being permanently attached in a hollow bung, preferably made of copper, which fits tightly in the said orifice; and it also consists in combining with the said coil suitable valves and cocks outside the barrel, for the purpose of readily controlling the introduction and expulsion of the heating and cooling elements, and of withdrawing evaporated waste substances from the contents thereof when in operation.

The accompanying drawing is an elevation of our improved apparatus, showing it applied in a barrel, which is in cross-section.

A represents an ordinary liquor-barrel filled with liquor, and B a double coil of pipe, through which the heating and cooling elements pass, entering at inlet *b* and discharging at outlet *b'*. The coil B is so constructed, as shown, that it may be screwed or turned into the barrel through the bung-hole, extending partially or wholly across its length, preferably clear across, as shown, in order to obtain as much heating and cooling surface as possible. Coil B is pro-

vided at its head or inlet *b* with coupling F, for the purpose of attaching and detaching valves and connections C *c* D *d* *d'* E.

C represents a rubber hose; or any other flexible supply-connection may be used.

By means of this flexible connection our apparatus may, with facility, be transferred from one barrel to another without detaching it from the steam-connection which supplies heating element from the boiler; and *c* represents a valve in direct communication with the boiler, as shown, for regulating and shutting off the supply of the heating element when in operation.

D represents a water-supply pipe, also provided with a flexible supply-connection, *d*, through which water is received from any source and controlled by valve *d'*.

E represents a T-coupling for connecting water-supply pipe and valve D *d* *d'* and steam-supply pipe and valve C *c* with coupling F, which, in turn, connects the same with coil B at inlet *b*.

G represents a waste or blow cock, secured in the bung H, for the purpose of blowing off from time to time the evaporated substances resulting from the heating of the liquor in the barrel, and also relieving the barrel of the excessive pressure caused by the expansion of the same therein.

H represents, as shown, a hollow bung, preferably made of copper, through which coil B, permanently secured therein, passes into the barrel, and in which blow-cock G is also secured. It is obvious, however, that bung H may be made of solid metal or wood without materially altering the working of our apparatus.

The bung is so constructed as to fit tightly within the bung-hole of the barrel, to prevent the escape of any evaporated substances, except by means of blow-cock G, as described heretofore.

I represents an air-chamber above the liquor, in which the vapors arising from heating the same are temporarily held and blown off from time to time through cock G, as aforesaid, being so regulated as to prevent the undue escape of evaporated pure liquors, which are partially condensed during the intervals

through the cooling influence which may be exerted somewhat from the barrel itself in this chamber.

The operation of the device is as follows: Steam or other heating element is introduced through hose C, valve *c*, connection E, and coupling F from the boiler or other source of supply into pipe-inlet *b*, and passes through the double coil of pipe B. If steam be used, it will partially condense in its progress at first, and the water will be drawn or blown off at outlet *b'*. In the passage of the heating element through the coil B the liquor in the barrel is heated to a degree of heat sufficient to evaporate and cause to disappear the fusel-oils and other like impurities in the liquors, which are all blown off immediately after the barrel becomes charged through cock G. The liquor remaining is heated to a higher degree, in order to give it the purity and color which has been due heretofore to age, the cock G being opened occasionally to allow a very small portion of the vapor to escape to relieve the barrel of the excessive pressure occasioned by the expansion of the liquor therein. Thus in a comparatively short time the purity, color, and superiority of age are imparted to alcoholic liquors, which has never been attained heretofore with equal success or economy.

After the heating process is completed valve *c* is closed and valve *d'* opened, allowing water or other cooling element to pass through the coil B in the same manner as the heating element, for the purpose of cooling the contents in the barrel and rendering the same at once ready for sale, shipment, and use.

Heretofore an apparatus has been constructed for applying heat and agitation to a body of spiritous liquors contained within a barrel or cask, the same consisting of an outer pipe or

tube closed at its lower end and introduced through the bung-hole, it being smaller than the latter, to provide for the admission of air and escape of vaporized fusel oil, said pipe or tube having an inlet-pipe extending centrally down within the same for first admitting hot air or steam, and afterward cold air or water, which fluids pass down the inner tube and up the outer tube, escaping through an opening at the upper end of the same. Such, not being our invention, is hereby disclaimed.

Having thus described our invention, what we claim is—

1. The combination, with a barrel or cask having a bung, H, of a double screw-coil of pipe, B, arranged within the barrel or cask, and having its two ends secured within the bung, one of said ends, *b'*, being open to the atmosphere, forming an outlet, and the other, *b*, connected with supply-pipes C and D, for supplying the double-coil pipe with heating and cooling fluids, substantially as shown and described.

2. The combination, with a barrel or cask having a bung, H, and a double screw-coil pipe, B, arranged within the barrel, and having its ends *b b'* secured within the bung, one of said ends being open to the atmosphere, and the other connected with hot and cold fluid supply-pipes, of a blow-off cock, G, secured in the upper end of the hollow bung, for blowing off the evaporated substances in the barrel, substantially as described.

In testimony whereof we have hereunto set our hands this 8th day of August, 1879.

CHAS. H. JACOB.
JOHN W. LOCHNER.

Witnesses:

JOHN C. HUSSEY,
JOHN E. JONES.