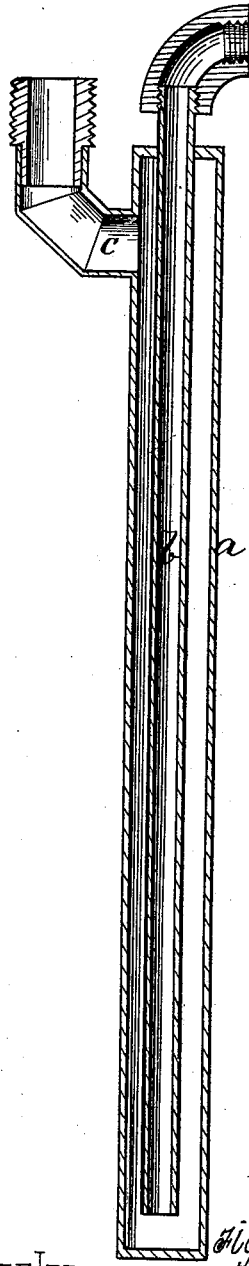
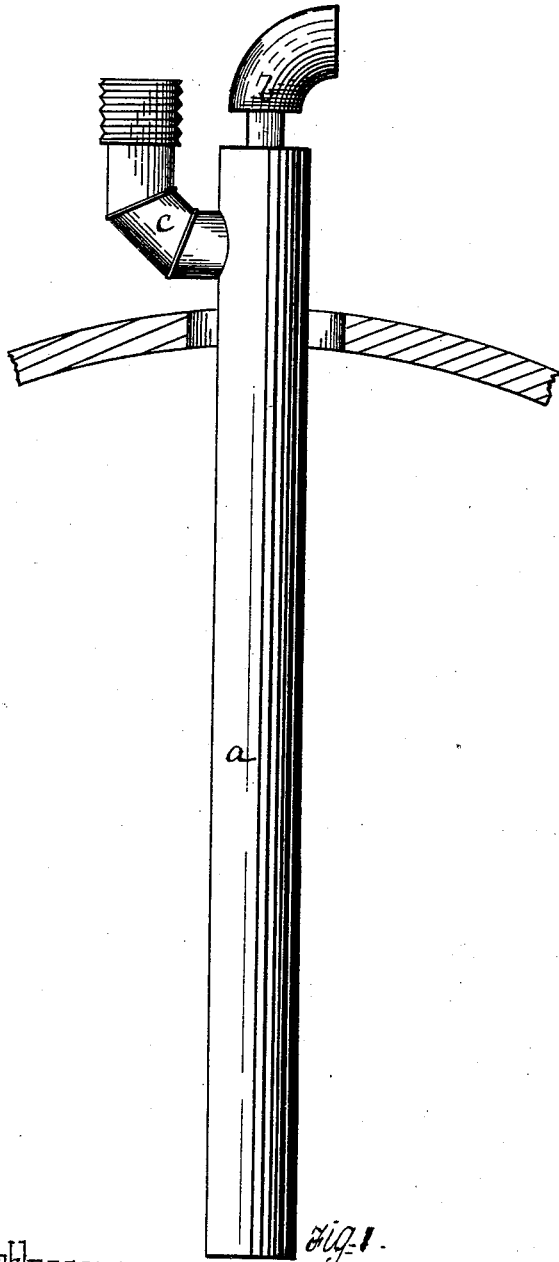


M. G. COREY.
Aging Liquors.

No. 212,195.

Patented Feb. 11, 1879.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN AGING LIQUORS.

Specification forming part of Letters Patent No. **212,195**, dated February 11, 1879; application filed January 9, 1879.

To all whom it may concern:

Be it known that I, MOSES G. COREY, of Greensborough, in the county of Greene and State of Pennsylvania, have invented a new and useful Improvement in Process and Apparatus for Imparting Certain Peculiarities of Age to Spirituous Liquors; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of devices illustrating my invention, and Fig. 2 is a longitudinal central section of the same.

Like letters refer to like parts wherever they occur.

My invention relates to a process and apparatus for imparting certain peculiarities of age to spirituous liquors; and consists, first, in applying heat and agitation within the body of the liquor to be treated, when said liquor is contained within a barrel, package, or like receptacle charred upon its interior, whereby a more economical heating, agitation, and aging of the liquor is rendered possible; secondly, in alternately heating and agitating and cooling the spirituous liquor to be treated, when the liquor is contained within a barrel, package, or like receptacle charred on its interior, whereby the process of aging is rendered more rapid and effectual without detriment to the material treated.

It is well known to those skilled in the production of spirituous liquors, and also to most persons at all familiar with the trade, that whisky, &c., when first manufactured contains a deleterious element termed "fusel-oil," which imparts thereto a raw and disagreeable flavor and odor.

When the spirituous liquor has been favorably stored for one or two years, according to circumstances, a chemical change takes place, and the fusel-oil is partly transformed and partly dissipated.

Observation has also shown that liquor which has gone on a sea-voyage in a warm climate is greatly improved thereby, and more speedily aged.

It is known that fusel-oil will vaporize at 110° Fahrenheit, and that its dissipation and transformation is accelerated if the spirits con-

taining it are agitated while heat is applied in a charred barrel or cask with the bung out, so as to admit of the escape of the volatilized fusel-oil and the qualifying effects of oxygen by the free admission of air to the spirits. For these reasons whisky or spirits are improved by a sea-voyage beneath the tropics, in which the motion of the vessel supplies the agitation and the temperature of the tropics the required heat. The charring of the cask or barrel prevents the spirits from imbibing acids or a woody taste from the staves.

My invention is intended to embody all the principles of aging spirits in a charred cask or barrel with the bung out on a sea-voyage beneath the tropics.

Following these suggestions, various methods and devices—such as heating and agitating, rocking frames, &c.—have been suggested and applied, for the purpose of speeding the transformation and dissipation of the fusel-oil.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may apply the same.

In carrying out my invention I preferably employ devices substantially like those shown in the drawings—that is to say, a tube or pipe, *a*, usually of copper, of such diameter as will permit of its ready introduction into a barrel through the bung-hole thereof, and small enough for the free admission through the bung-hole of air and the escape of the vaporized fusel-oil, if desired, and of such length as will reach to, or nearly to, the bottom of the barrel, is closed at both ends by suitable heads or caps. At one end of the tube or closed cylinder *a* is an inlet tube or pipe, *b*, extending centrally of the cylinder, whereby a circulation, first through the inlet-tube *b* and then through cylinder *a*, can be established.

With such or similar devices hot air or steam may be employed as the heating medium, steam being preferred, and cold air or water as the cooling medium when a cooling medium is employed to alternately reduce the temperature of the liquor under treatment, the receptacle for the liquor having been properly prepared by charring the inner surface, (and for my purposes the ordinary whisky-barrel is best adapted.)

The apparatus described, or its equivalent, is inserted into the spirituous liquor contained in a barrel or suitable vessel, steam or hot air is admitted through tube *b*, passes the length of said tube, and escapes into the lower end of the cylinder *a*, giving up its heat to the surrounding liquor until the liquor is rapidly heated to 110° and upward, finally exhausting through pipe *c*.

The temperature of the heating medium will, of course, depend somewhat upon the time it is to be applied, so that if a continuous heating process is followed the temperature will be less than when the preferred method or alternate heatings and coolings are adopted. In either method the steam (or hot air) will impart sufficient heat to the contained liquor for the evaporation of fusel-oil, and to cause decided ebullition or agitation of the liquor by the laws of heat and cold in displacing and replacing fluids, and in the latter method is applied for thirty minutes or an hour, (more or less,) after which the heat is withdrawn and the liquor allowed to cool or chill naturally; or, if preferred, as a means of expediting the process, a current of cold air or water is forced through *b*, *a*, and *c*, to absorb the heat and quickly and effectually reduce the temperature of the liquor.

When the liquor is sufficiently chilled it is reheated and again chilled, in the manner before specified, and these successive steps are repeated several times, or until the liquor (being tested from time to time) assumes the desired improvement.

By the method set forth spirituous liquors may have the qualities of age imparted to them in the space of from six hours to three or four days, accordingly as they are cooled artificially or allowed to cool gradually.

The advantages of my invention are, that the apparatus is simple and easily managed,

the process can be readily and quickly applied, and is expeditious and will not greatly waste the liquor.

I have found that the results of the process are obtained more rapidly and perfectly when a free circulation of air in the barrel is permitted during the heating and cooling; but I have also found by experience that the same results are obtained when the heater fits nicely in the bung-hole, in this showing the same difference in the rapidity and perfection of the aging operation as is found in the use of barrels with the bung in and with the bung out upon liquor on a sea-voyage in a warm climate. When the bung is removed the aging is much more rapid and perfect.

I am aware that it is not broadly new to age liquor by heating the same internally, or by heating it while its containing-vessel is being agitated; but,

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

1. The process herein described for imparting the qualities of age to spirituous liquors, which consists in applying heat and agitation at the same time within the body of the liquor to be treated, said liquor being contained within a charred barrel, package, or receptacle, substantially as specified.

2. The process herein described for imparting the qualities of age to spirituous liquors contained in a charred barrel, package, or similar receptacle, which consists in alternately heating and cooling the liquor, substantially as specified.

In testimony whereof I, the said MOSES G. COREY, have hereunto set my hand.

MOSES G. COREY.

Witnesses:

JAMES I. KAY,
J. K. SMITH.