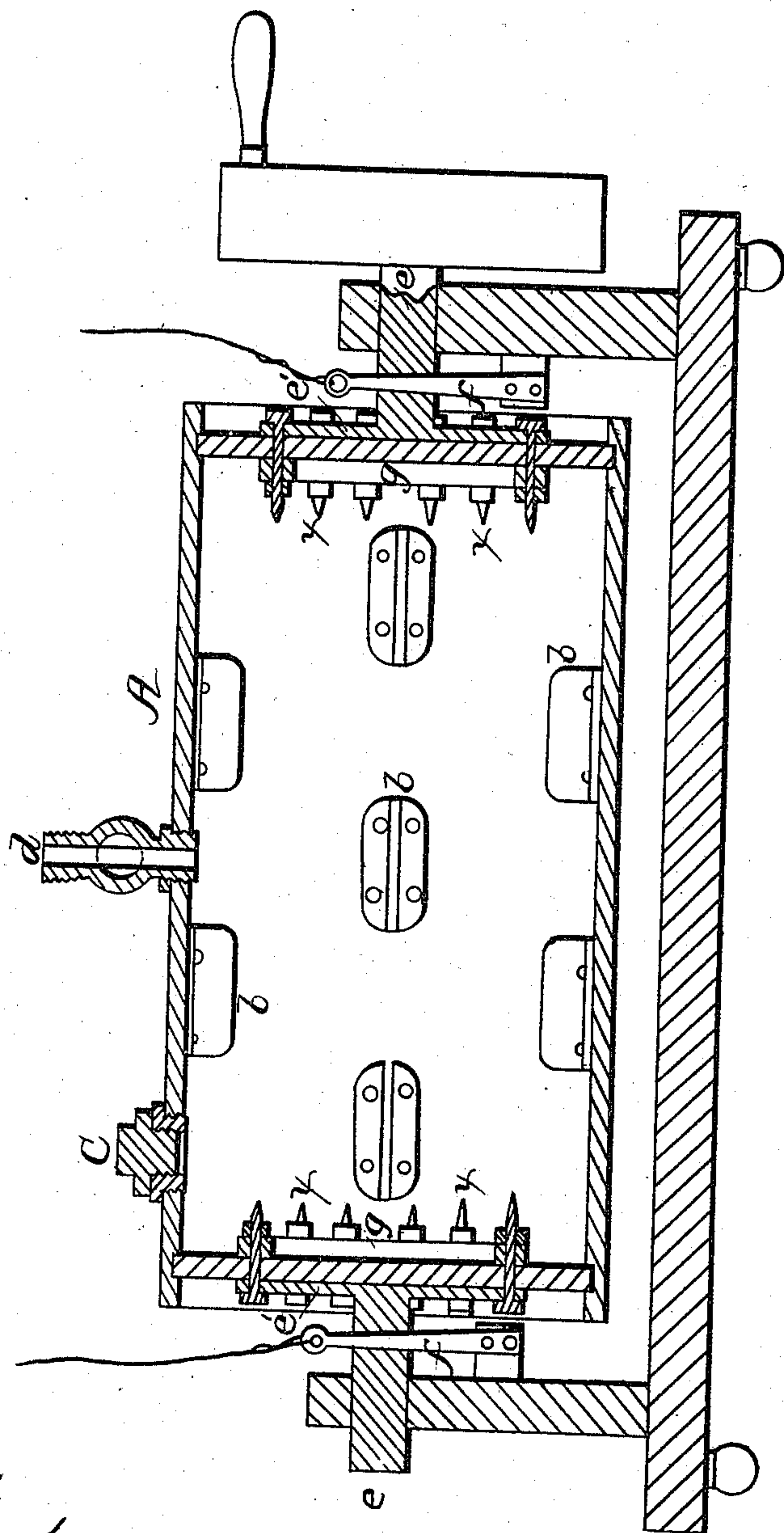


W. MONT STORM.  
AGING LIQUORS.

No. 57,009.

Patented Aug. 7, 1866.



Witnesses;  
C. J. Ferguson  
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# UNITED STATES PATENT OFFICE.

WILLIAM MONT STORM, OF NEW YORK, N. Y.

## IMPROVED PROCESS FOR RIPENING LIQUORS.

Specification forming part of Letters Patent No. 57,009, dated August 7, 1866; antedated July 24, 1866.

*To all whom it may concern:*

Be it known that I, WILLIAM MONT STORM, of the city and State of New York, have invented or discovered a new and useful Process for Ripening Liquors, as hereinafter specified.

My method mainly applies to spirituous liquors, as generally designated; but I have anticipated that the same process will convert champagne, cider, &c., into vinegar.

Although the value of my process must depend upon its results, it may be proper and requisite to state the theory upon which it was based and essayed.

It is well known (or asserted) that spirituous liquors will not ripen in sealed bottles of glass, but will in time in certain casks of wood. The cause, I infer, is, that the former are impervious to air, while the latter permit what is known to chemists as "endosmose" and "exosmose" of any given volatile fluid from without or within, as it were, interchangeably, and thus an assimilation or digestion of the absorbed air-atoms (or the oxygen) and the alcohol and the volatile oil or oils of the raw or new liquor takes place, and results in what is called "ripening."

It is also well known or asserted that, other things equal, the ripening process is much accelerated by sending such liquor on voyages to sea. The cause here again I infer to be, that the constant motion to which the liquor is subjected and the consequent admixture and friction of its particles, for some reason not entirely understood, very much aids the ripening. Varying temperatures no doubt also have an important influence in hastening the ripening process.

It has been often surmised that extensive contact with the air would ripen liquors, and it has been essayed to allow the liquor to percolate drop by drop, and, falling through the air, be received in another vessel. Also it has been tried to allow it to flow through long, winding, shallow troughs with the same view. The amount of contact of the liquor and air thus attainable is not only inadequate, but the alcohol is dissipated by this process to an inadmissible extent.

I will now describe my process. Its first feature is to give the liquor long and violent agitation, (and hence the friction of its parti-

cles before referred to,) but in an air-tight closed vessel, whereby there is no appreciable loss of the alcohol. By actual trial I have found this to conduce greatly to ripening. The next feature in my process is to so agitate the liquor in a vessel but partially filled with it, the remainder of the vessel's capacity being filled with compressed air. This also I have found by trial to further accelerate the ripening. I should here remark that pure oxygen, (set free from peroxide of manganese, for instance, heated in a closed retort,) passed into the vessel holding the liquor to be so treated, would probably produce the same effect in less time than air; and, as varying temperatures are beneficial, I have anticipated heating the air (or oxygen) or the liquor as equivalent, always, however, in a close vessel, and the scoma of the oxygen and the liquor-vessel of course communicating.

Further, as the third feature of my process, I deduced that during the agitation of the liquor in contact with the confined air or oxygen, if it should be made part of a galvanic circuit the process of ripening would be accelerated, because there would be produced an inductive affinity between the oxygen and alcohol and inherent oils, &c. By trial I have also found that such is the case.

The passage of the galvanic current may be simultaneous or alternate with the mechanical agitation; but the former is manifestly the best. The galvanic current, if sufficiently intense, by decomposing a modicum of the water in the liquor during its passage, tends to strengthen the liquor on the whole, while at the same time supplying a portion of nascent oxygen and hydrogen for assimilation with it; but I do not assume that the latter combines.

The accompanying drawing will illustrate an apparatus adapted to carrying out my process. In lieu of revolving the vessel, the latter may be made stationary and have a revolving shaft (passing through a stuffing-box at one end) with paddle attached, for agitating the liquor and carrying the air under and intimately in contact with it.

Letter A represents a closed wooden vessel with internal projections or paddles, *b b*, for the purpose named, said vessel having a metallic bung, *c*, that may be screwed on air-tight, by which to charge the vessel with liquor, and



a cock, *d*, through which to charge it with compressed air or oxygen. Letters *e e* represent affixed axles, upon which the vessel may rotate in supports that are insulated, or themselves of a poorly-conducting material. From such supports, at either end of the vessel, projects a spring of metal, *f f*, bearing against the axle and extending a little beyond the body of such axles, (which are supposed also to be conductors,) so that the wire is connected with the positive and negative plate or plates of a galvanic battery, one to each of the said springs.

Through the flanges *e' e'* of the axles *e e* pass pointed metallic bolts *x x*, as also they do through the head of the cask, tank, or vessel *A*, and through a metallic ring inside of each head *g g*. When the vessel is partially (say one-half or two-thirds) filled with liquor, the com-

pletion of the galvanic circuit will be complete and obvious.

The mechanical devices of apparatus, &c., for carrying out my process may of course be variously modified.

Having now fully set forth the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

Subjecting liquors to violent agitation in a closed vessel while subjected to a pressure of oxygen gas, the liquor at the same time being made to constitute part of a galvanic circuit, substantially in the manner and for the reasons set forth.

WM. MONT STORM.

Witnesses:

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