

CHARLES J. T. BURCEY.  
 Improvement in the Manufacture of Acetic Acid.  
 No. 118,788. Patented Sep. 12, 1871.

Case B.

[29]

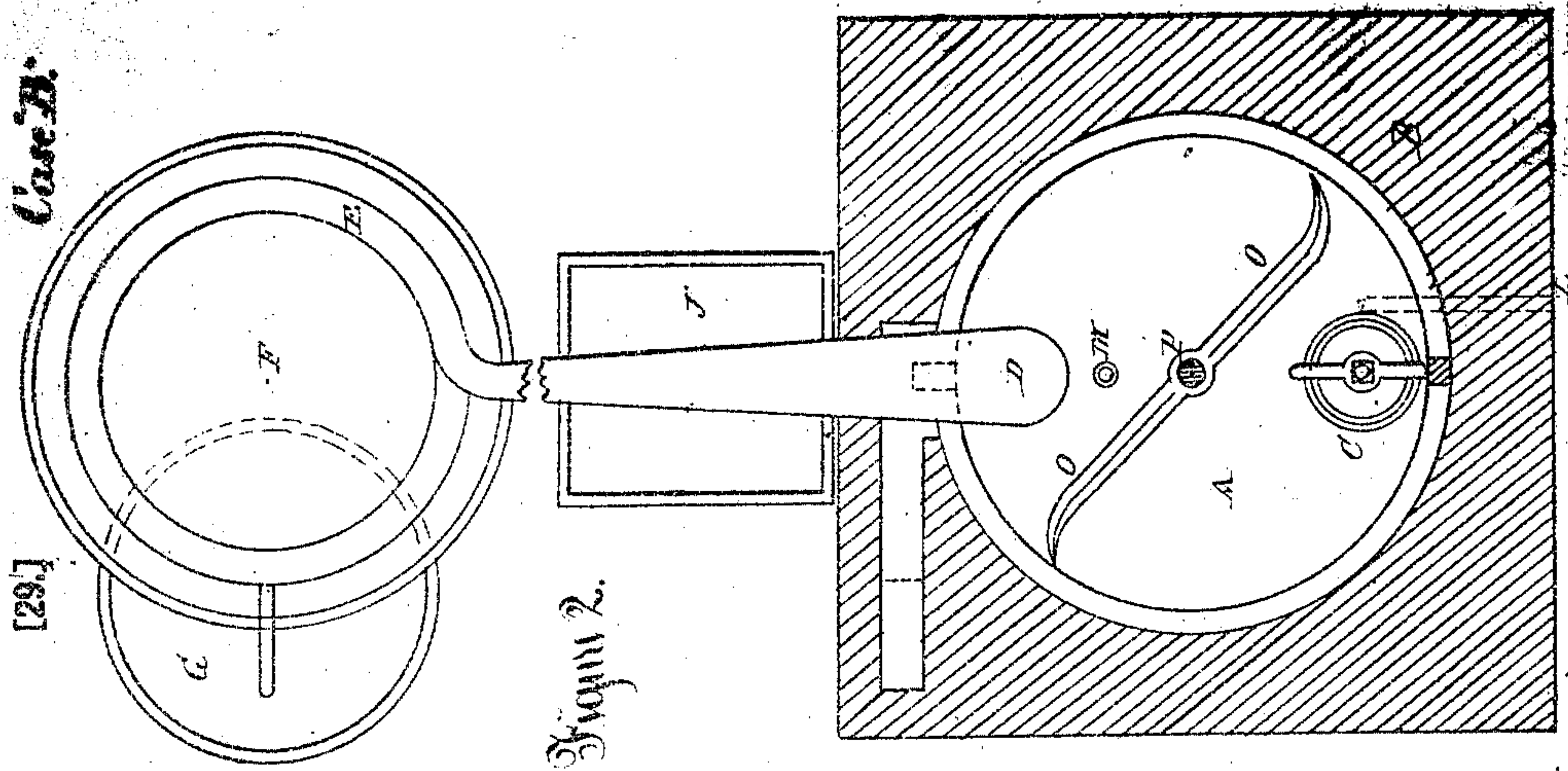


Figure 2.

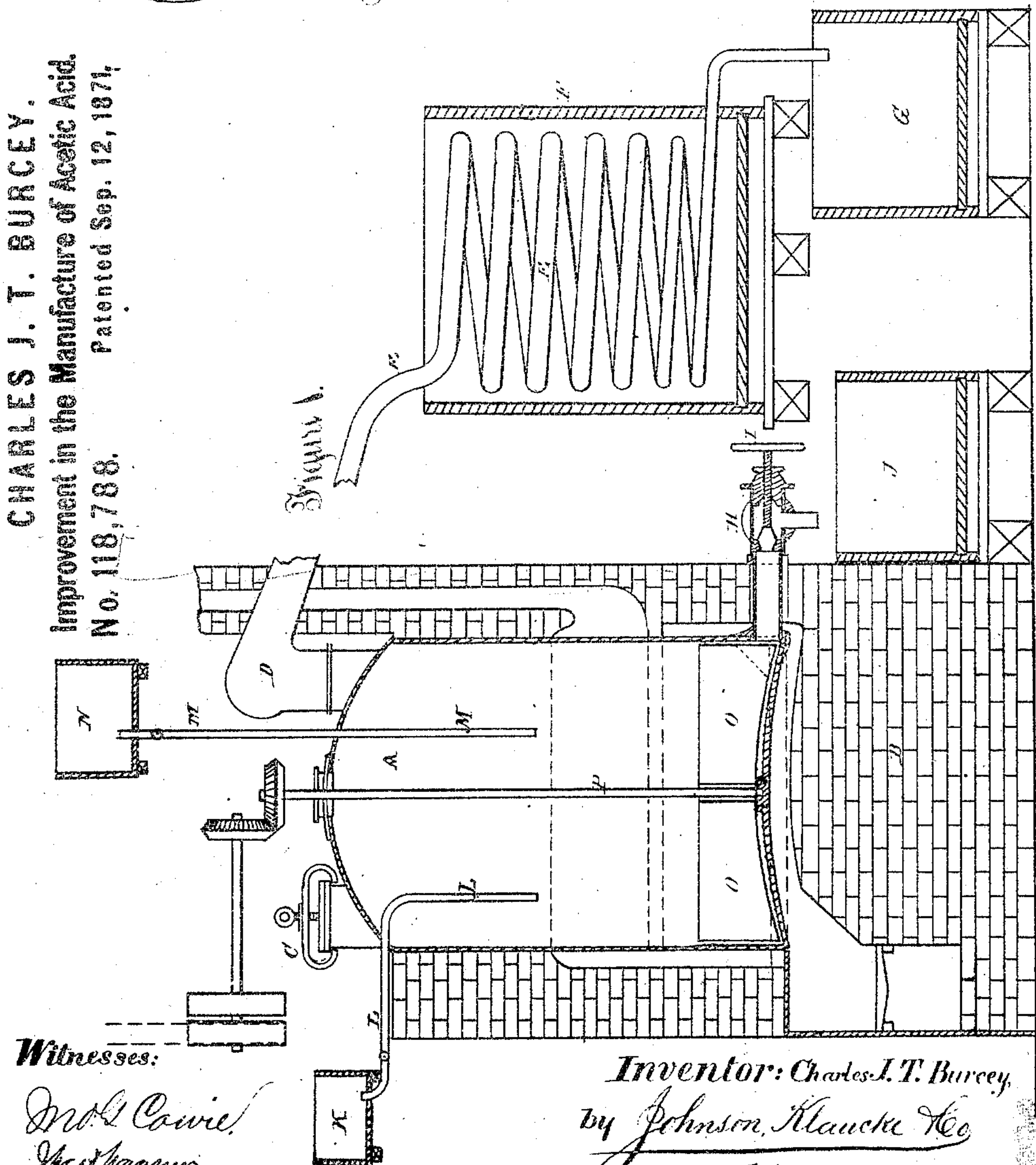


Figure 1.

Witnesses:

*Dr. G. Cowie*  
*John Magnus*

Inventor: Charles J. T. Burcey,  
 by *Johnson, Klaucke & Co*  
 his attorneys.



# UNITED STATES PATENT OFFICE.

CHARLES J. T. BURCEY, OF BLACK ROCK, CONNECTICUT.

## IMPROVEMENT IN THE MANUFACTURE OF ACETIC ACID.

Specification forming part of Letters Patent No. 118,788, dated September 12, 1871.

*To all whom it may concern:*

Be it known that I, CHARLES J. T. BURCEY, of Black Rock, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Acetic Acid from the Acetate of Lime, and apparatus therefor, of which the following is a specification:

In the drawing, Figure 1 is a sectional side elevation of the apparatus used in carrying out my improvement. Fig. 2 is a plan or top view of the same, the boiler being shown in section.

A suitable boiler, A, arranged in a furnace, B, is provided with a man-hole, C, and a pipe, D, which latter ends in a worm-pipe, E, coiled within a condenser, F, and extending from near the bottom of the same into a receiver, G. At its lower end the boiler is provided with a tube, H, closed by a stop-cock, I, through which tube the residuum of the boiler can be drawn off into a tank or vat, J. From a tank, K, suitably situated in regard to the boiler, extends a pipe, L, which passes into the boiler a short distance. Another pipe, M, extends similarly from the boiler to another tank, N. Both pipes are provided with stop-cocks. O are agitator-blades secured to the lower end of a shaft, P, which latter has its bearing in the bottom of the boiler, and is rotated from a pulley in any suitable manner.

The operation of the apparatus is as follows: Acetate of lime, after having been crushed fine or pulverized, is thrown through the man-hole C into the boiler in sufficient quantity. Concentrated sulphuric acid is then admitted through pipe L from tank K, and the agitators O being set in motion the two ingredients are thoroughly mixed, whereby a great heat is created. As soon as this chemical heat subsides the temperature of the mass in the boiler is kept up by heat from the furnace. The vapors created by this

evaporation rise and pass through the pipe D into the worm E, where they are condensed and pass as acetic acid into the vat G. The agitators prevent the sediment formed by the combination of the acetate of lime and concentrated sulphuric acid, which frees the acetic acid, from forming incrustations on the lower heated sides of the boiler, and also prevent their too sudden drying and their too great heating.

To clean out the boiler, water is admitted from tank N through pipe M, which is drawn off into a tank, J, through pipe H. The important feature in this process is the introduction of concentrated sulphuric acid directly in contact with the acetate of lime under direct agitation, which agitation has the effect of stirring up the mass thoroughly to facilitate the separation of the acetic acid and prevent the fluid from burning round the sides and bottom of the still.

Without this disturbing of the fluid the heat would make the acetic acid yellow, and charge it with coal matter, and render it unfit for use without purification; but by my process of agitation it is rendered clear and pure and almost free from water, being highly concentrated.

Having described my invention, I claim—

The manufacture of acetic acid by means of the combination of acetate of lime and concentrated sulphuric acid in a boiler while under direct agitation, substantially as described.

In witness whereof I have here set my hand this 6th day of July, A. D. 1871, to the above specification of my improvement in the manufacture of acetic acid from acetate of lime, in the presence of two witnesses.

CHARLES J. T. BURCEY.

Witnesses:

A. E. H. JOHNSON,  
J. W. HAMILTON JOHNSON.