J. E. PATTISON.

Mode of Treating Cane Juice.

No. 57,958. Patented Sept. 11, 1866.

Fig. 1.

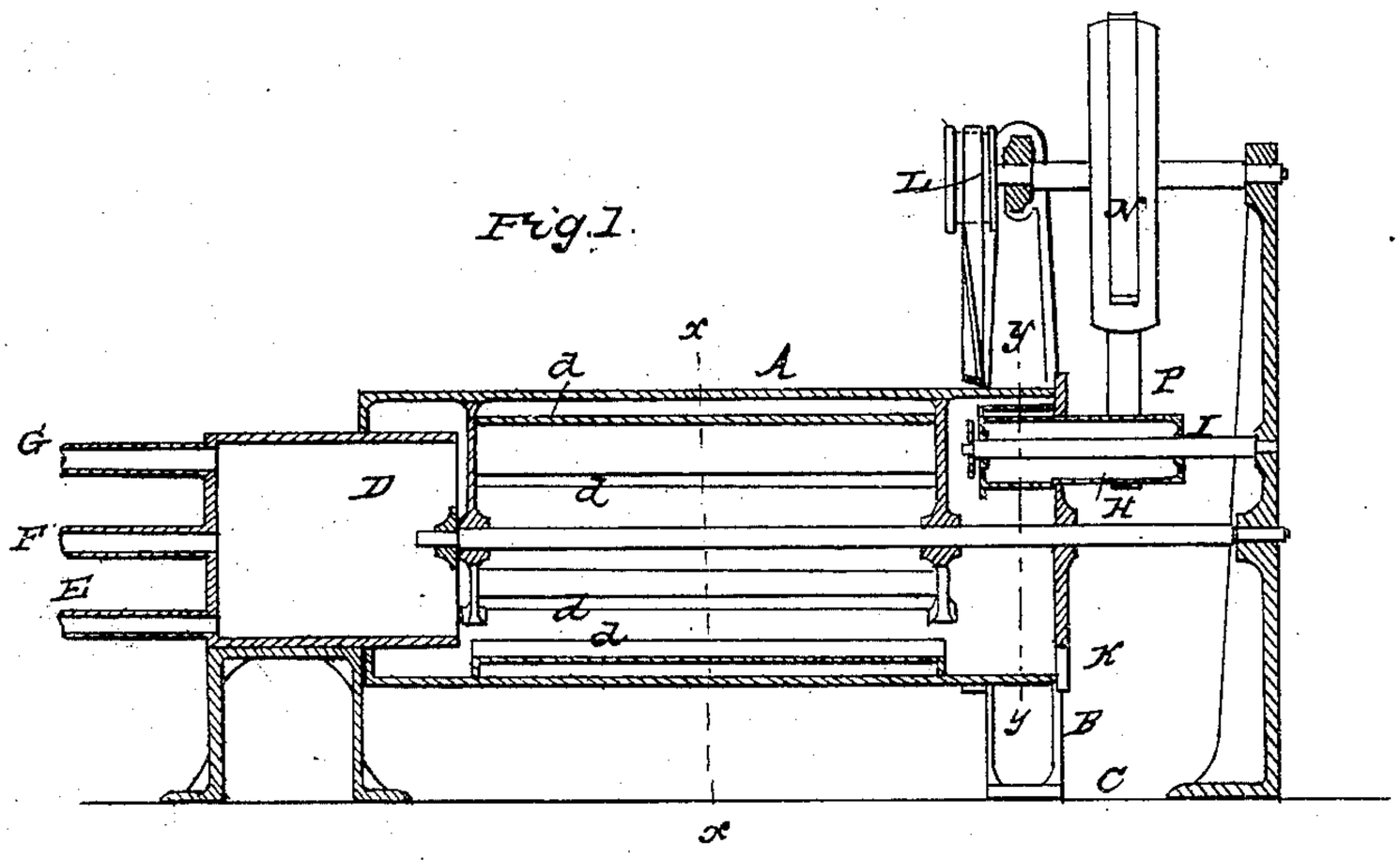


Fig. 2.

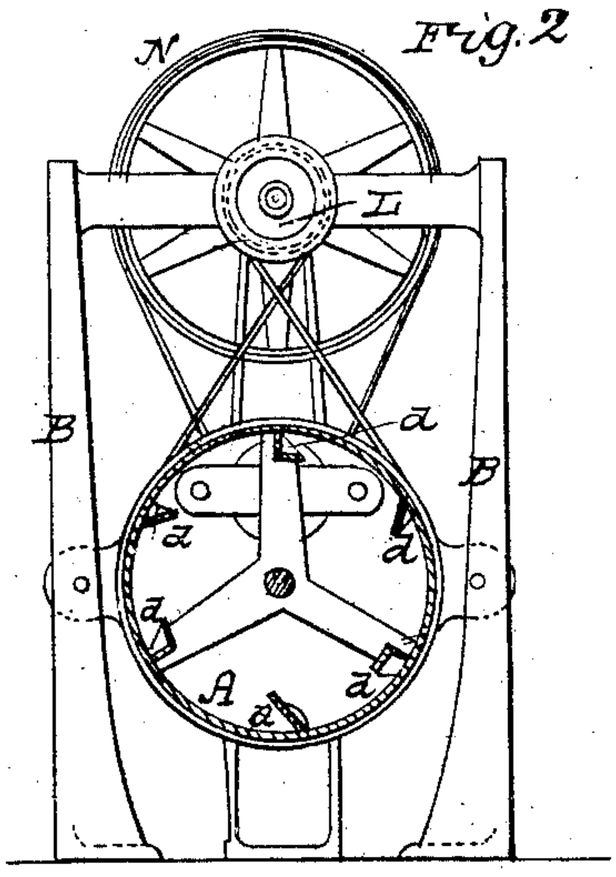
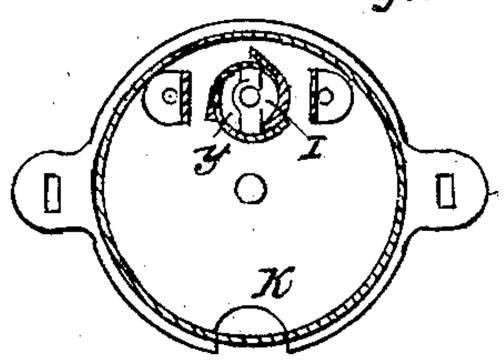


Fig. 3.



WITNESSES

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JOHN E. PATTISON, OF HOUMA, LOUISIANA.

IMPROVED MODE OF TREATING CANE-JUICE.

Specification forming part of Letters Patent No. **57,958**, dated September 11, 1866

To all whom it may concern:

Be it known that I, JOHN E. PATTISON, of Houma, Terre Bonne parish, and State of Louisiana, have invented a new and useful Improvement in Treating Cane-Juice; and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to enable one skilled in the art to which the invention appertains to make use of it, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is a vertical transverse section on line *x x*, Fig. 1. Fig. 3 is a section on the line *y y*, Fig. 1.

This machine is designed to bring the juice, as it runs from the cane-mill, under the action of sulphurous-acid gas, in such a manner that the juice is caused to fall in a continual shower, again and again, through the volume of gas which passes through the chambers in which the operation is carried on. The object is to defecate the juice and arrest the incipient fermentation which tends to disengage the crystallizable sugar.

The apparatus shown in the drawings consists of a large cylinder, A, which is supported in an inclined position upon bearings in standards B B, which are erected upon the base or foundation C. The upper end of the cylinder A is open, and fits upon the open end of the stationary shorter cylinder D, the space between the two being suitably packed to hold in the gas, with which the interior of both is filled.

The end of the cylinder D is closed, with the exception of three openings, E F G. The lower one is in connection with the canal which brings the juice from the mill, the juice passing along the bottom of the stationary cylinder D, and being discharged into the revolving cylinder A, which has troughs *d* on its interior periphery, which lift the juice and drop it in a continuous shower as the troughs in their revolution are inverted.

The sides of some of these cups or troughs are notched or cut, so as to spill the juice in a more comminuted form through the gas, with which the interior of the cylinder is supplied through the opening G at the end of the cylinder D.

The gas is generated in a manner familiar to chemists, and the mode of its production forms no part of the novelty of this invention, nor does the mere use of it, as it has before been applied for this purpose, but not in this manner.

The gas being generated in a retort, and passed over water in the usual manner, supplied through a pipe connected to the opening G, is assisted in its passage through the cylinders by an exhaust-draft produced by the wheel H, whose open mouth, revolving against the aerial contents of the cylinder A, draws it in and discharges it at the center I out of the machine into a flue or chimney, as may be desired.

In cases where the draft apparatus cannot be conveniently applied, a jet of steam is introduced through the opening F in the direction of the opening I, which expedites the motion of the gas in that direction, while the juice, continually being raised by the buckets and dropped in showers through the passing gas, is subjected to the action thereof to the extent desired.

The rapidity of the passage of the gas, the volume required for exhibition to a given amount of cane-juice, the volume and rate of passage of the said juice, the inclination of the axis of the cylinder, and the number, depth, and capacity of the buckets or troughs *d*, are matters of adjustment not necessary to enumerate, and dependent, in some degree, upon the density of the gas and the state of the juice.

The cane-juice is successively taken up by the buckets and dropped again to the bottom of the cylinder several times before it reaches the discharge-opening K, where it is received into the receptacle prepared for its reception.

The cylinder A is revolved by the band L, which passes to a driving-pulley on the most convenient part of the sugar-mill.

The draft-wheel H runs at a considerably higher speed than the cylinder A, the motion being derived from a band passing from a

larger wheel, N, to a smaller wheel, P, on the shaft of the draft-wheel.

I do not claim the use of sulphurous-acid gas in the treatment of saccharine liquids, but

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

1. The revolving cylinder A, inclined on its axis, furnished with lifting-buckets *d*, and adapted to the passage of a body of gas, substantially as described.

2. In combination therewith, the draft-wheel, operating as described.

JOHN E. PATTISON.

Witnesses:

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