

J. S. OLIVER.

Refining Liquor.

No. 82,633.

Patented Sept. 29, 1868.

Fig. 2. Section on line y, y, fig. 3.

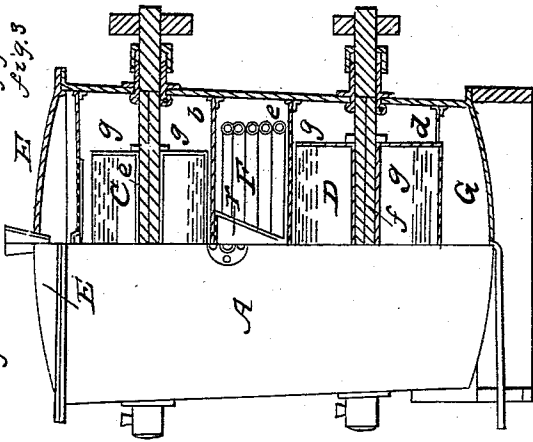


Fig. 3.

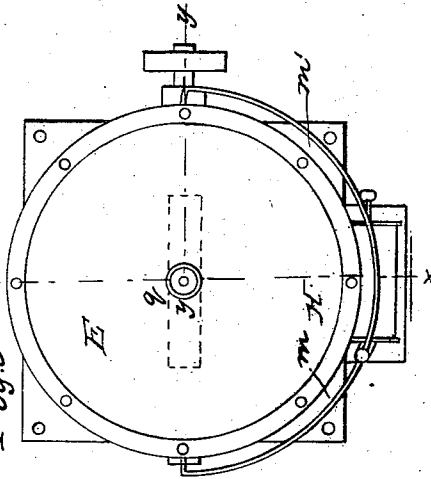


Fig. 1. Sectional view

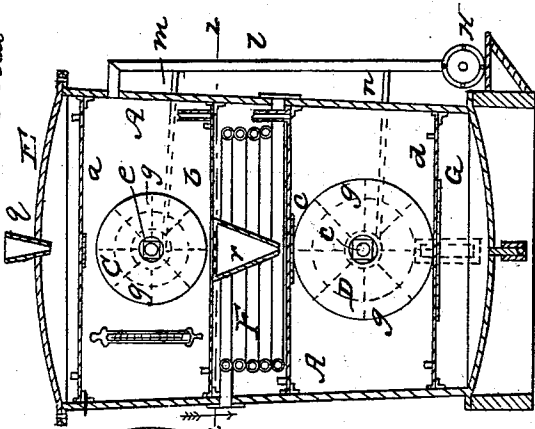


Fig. 4. Thru fig. 1

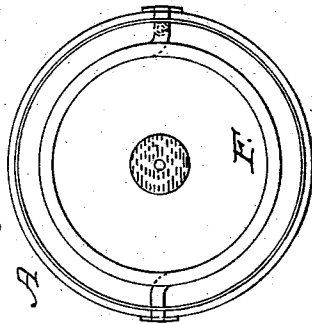


Fig. 5.

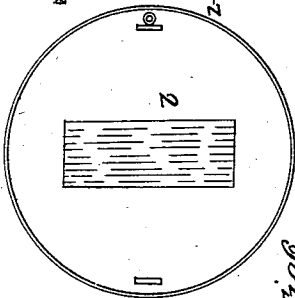
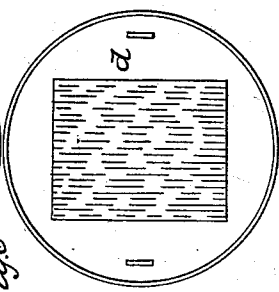


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN S. OLIVER, OF NEW YORK, N. Y., ASSIGNOR TO JOHN W. COX AND
ALEXANDER D. SHAW, OF SAME PLACE.

IMPROVEMENT IN REFINING LIQUORS.

Specification forming part of Letters Patent No. **82,633**, dated September 29, 1868.

To all whom it may concern:

Be it known that I, JOHN S. OLIVER, of the city, county, and State of New York, have invented a new and Improved Process for Refining Liquors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms part of this specification.

It is well known that if the volatile element in liquors, such as the free or non-condensed gases in wine, whisky, rum, brandy, &c., as well as in hydrocarbon liquids, such as crude petroleum, be extracted or removed from them, the quality of the article is greatly improved.

My invention, therefore, consists, first, in the method or process of refining spirituous, hydrocarbon, and other liquids, by removing therefrom the free or non-condensed gases contained therein, by beating up or separating the liquid into fine particles or spray by the action thereon of mechanism suitable for the purpose.

My invention further consists in an apparatus particularly adapted for putting the said process into practice, as will be presently described.

The accompanying drawing illustrates an apparatus designed for carrying out my process, Figure 1 being a vertical transverse section of my improved apparatus, taken on the plane of the line *x x*, Fig. 3; Fig. 2 being partly a side elevation thereof and partly a vertical transverse section, taken on the plane of the line *y y*, Fig. 3. Fig. 3 is a plan or top view of the apparatus. Fig. 4 is a horizontal section taken on the plane of the line *z z*, Fig. 1, looking in the direction of the arrows marked thereon. Fig. 5 is a plan or top view of one of the straining-plates or partitions. Fig. 6 is a plan view of another of the straining-plates or partitions.

Similar letters of reference indicate corresponding parts in the several figures.

A designates a close box or chamber, constructed of wood or any other suitable material. A series of partitions—say, four in number, *a b c d*, is arranged transversely across this chamber A, at certain distances apart, as will be fully understood by reference to Figs.

1 and 2, and each plate is perforated, or is provided with a perforated plate at its bottom, the perforated part being of sufficient extent to permit the liquid to pass through.

C D are two drums, each of which is arranged to revolve upon axles *e f*, having suitable bearings in or at the side of the box A, as shown in Fig. 2, and they receive the requisite rotary motion in any suitable manner—for instance, by a belt passing over pulleys *h h'* on the ends of the axles *e f*. These drums are constructed, preferably, of perforated sheet metal, and they are each provided with perforated radiating wings *g*.

E is the cover of the vessel or box A, and this I have shown as provided with a funnel-shaped mouth, *q*, for receiving the liquid. I will, however, remark that the liquid may be admitted through a pipe or in any suitable way.

F designates a worm, through which hot water or steam may be passed for the purpose of heating the liquid as it passes through the compartment in the chamber A between the plates *b c*; and it will be observed that the liquid is guided through this chamber by a funnel-shaped spout, *r*, so that it falls directly upon the perforated part of the plate *c*, through which it passes upon the drum D.

G designates a chamber at the bottom of the apparatus for receiving the liquor or liquid after it has been subjected to the refining process, from which it may be drawn off by a faucet.

H designates an air-pump, and *l* a pipe opening into the compartment between the plates *a b*; and I will remark that a similar pipe may open in the same manner in the compartment between the plates *c d*. By operating said air-pump the air can be exhausted and a vacuum created in the entire box A, and by its means also the volatile gases can be drawn off. Pipes *m m' n n'* are also connected with the pipe *l* at one end, and at the other to the journal-boxes of the shafts *e f*, so that all surplus oil which might otherwise accidentally get into the box A and injure the liquid being subjected to the process will be drawn off by the action of the pump H.

The operation may be stated as follows: The

whisky or other liquor is fed into the mouth *g*, from which it passes, through the perforation-plate *a*, directly upon the drum C, which latter is revolving, and by its own action and the action of its wings separates the liquor into fine particles or spray, so that the gases can disengage themselves. From thence the liquor passes through the plate *b*, and through the compartment in which the worm is located, where it becomes heated to a degree a little below the vaporizing-point. From thence it passes, through the perforated plate *c*, upon the drum D, by which it is operated upon in a similar manner as by the drum C. From thence it passes through the perforated plate, *d*, and down into the drawing-off chamber G. The gases drawn out by the action of the air-pump H may be discharged into the open air, or they may be collected for manufacturing and other useful purposes.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The process of separating from spirituous, hydrocarbon, and other liquids the free

or non-condensed gases contained therein by beating up or separating the liquid into fine particles or spray while *in vacuo* by the action thereon of mechanism suitable for the purpose, substantially as herein specified.

2. The drums C D, arranged within a vacuum-chamber, A, and operating in substantially the manner and for the purposes herein specified.

3. The combination, with the drums C D, of the worm F, arranged within the box A, substantially as and for the purposes herein specified.

4. The combination, with the chamber A, containing the drums C D and worm H, of an air-pump arranged to operate substantially as and for the purpose herein specified.

5. The arrangement of the perforated plates *a b c d* in the box A, substantially as herein shown and described.

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Witnesses:

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