C. F. FREDERICI.

Oil Still.

No. 48,672. Patented July 11, 1865.

Fig. 2.

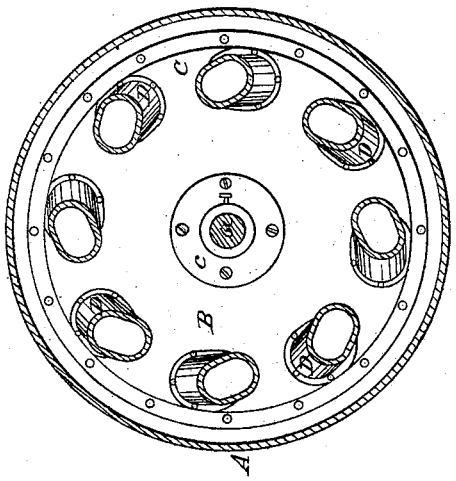
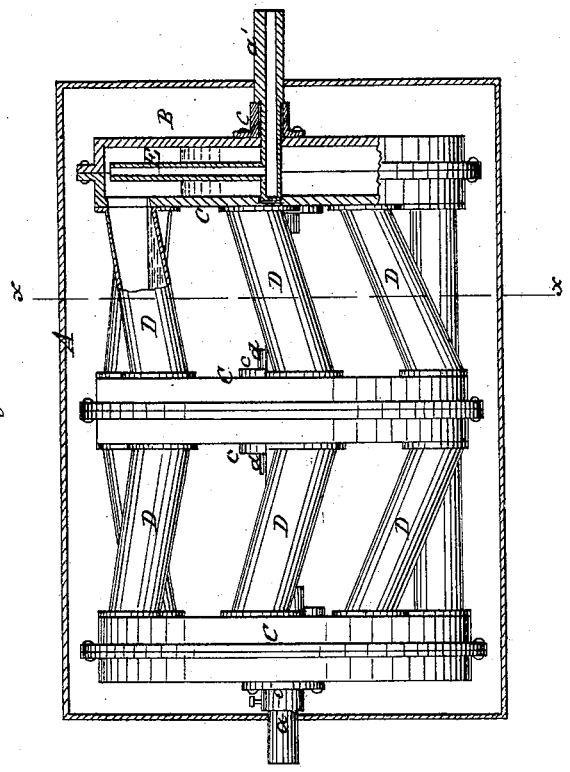


Fig. 1.



Witnesses:

M. M. Livingston

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Inventor:

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UNITED STATES PATENT OFFICE.

CARLOS F. FREDERICI, OF NEW YORK, N. Y.

IMPROVED APPARATUS FOR DISTILLING.

Specification forming part of Letters Patent No. **48,672**, dated July 11, 1865.

To all whom it may concern:

Be it known that I, CARLOS F. FREDERICI, of No. 82 Wall street, in the city, county, and State of New York, have invented a new and Improved Distilling Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal section of this invention. Fig. 2 is a transverse section of the same, the line *x x*, Fig. 1, indicating the plane of section.

Similar letters of reference indicate like parts.

This invention relates to an apparatus which is particularly intended for the manufacture of aniline, but which can be used with advantage for distilling a great many other materials besides aniline.

The invention consists in a series of hollow drums connected with each other by means of oblique pipes and secured to a shaft one end of which is hollow and stationary and connects with a vertical branch pipe, in combination with or without a jacket or boiler, in such a manner that when said drums are partially filled with the liquid to be distilled and the apparatus is rotated while being exposed to heat the oblique pipes cause a violent agitation of the liquid to be distilled and the distillation is materially facilitated, the gaseous products which escape from the liquid being allowed to pass off freely through the vertical branch pipe and the hollow end of the shaft.

A represents a jacket or boiler, made of sheet-iron or any other suitable material, in a cylindrical or any other suitable form or shape. The ends of this boiler form the bearings for the shaft or the gudgeons *a a'* of the distilling apparatus B. This apparatus is composed of a series of hollow drums, C, made of cast-iron or other suitable material, and connected to each other by pipes D, as clearly shown in Fig. 1 of the drawings. These pipes are placed in an oblique position, and they are open at both ends so that liquid contained in one of the drums will freely pass through said pipes to the other drums. One of the gudgeons *a'* is hollow and stationary, the apparatus being made to revolve on it, and from said hollow gudgeon rises a pipe, E, in a vertical direction, up nearly to the inner circumference of the drum in which it is inclosed, as shown in Fig. 1.

The apparatus is filled to about two-thirds of its height with the liquid to be distilled, and while being heated to the requisite temperature a slow rotary motion is imparted to the apparatus B. By this revolving motion the liquid is caused to flow back and forth through the oblique pipes D, and the continuous agitation to which the liquid is thus exposed materially facilitates the distillation. The gaseous products set free from the liquid during the process of distillation pass off through the vertical pipe E and the hollow gudgeon *a'*.

It is obvious that the number of hollow drums used in this apparatus and their size and also the number and size of the oblique connecting-pipes will be changed according to circumstances, and I do not wish to confine myself to the precise construction shown in the drawings. In order to take off the strain from the connecting-tubes, I have furnished each of the drums with flanged sockets *c*, which are secured to the heads of said drums, and shafts or rods *d* extend from one of these sockets to the next. The sockets at the ends form the bearings for the gudgeons *a a'*, one of which is solid, and secured in its socket by a set-screw, whereas the other is hollow and passes through the socket to the interior of the drum. To prevent leakage, it will be desirable to provide this socket with a stuffing-box.

The boiler or jacket A which surrounds the apparatus B is not essential, and in some cases it may be dispensed with.

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

1. A distilling apparatus composed of a series of hollow drums (two or more) connected by oblique pipes and provided with gudgeons on which it revolves, substantially as and for the purpose set forth.

2. The combination of the pipe E and hollow gudgeon *a'* with the drums C, with or without oblique pipes D, constructed and operating substantially as and for the purpose described.

CARLOS F. FREDERICI.

Witnesses:

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