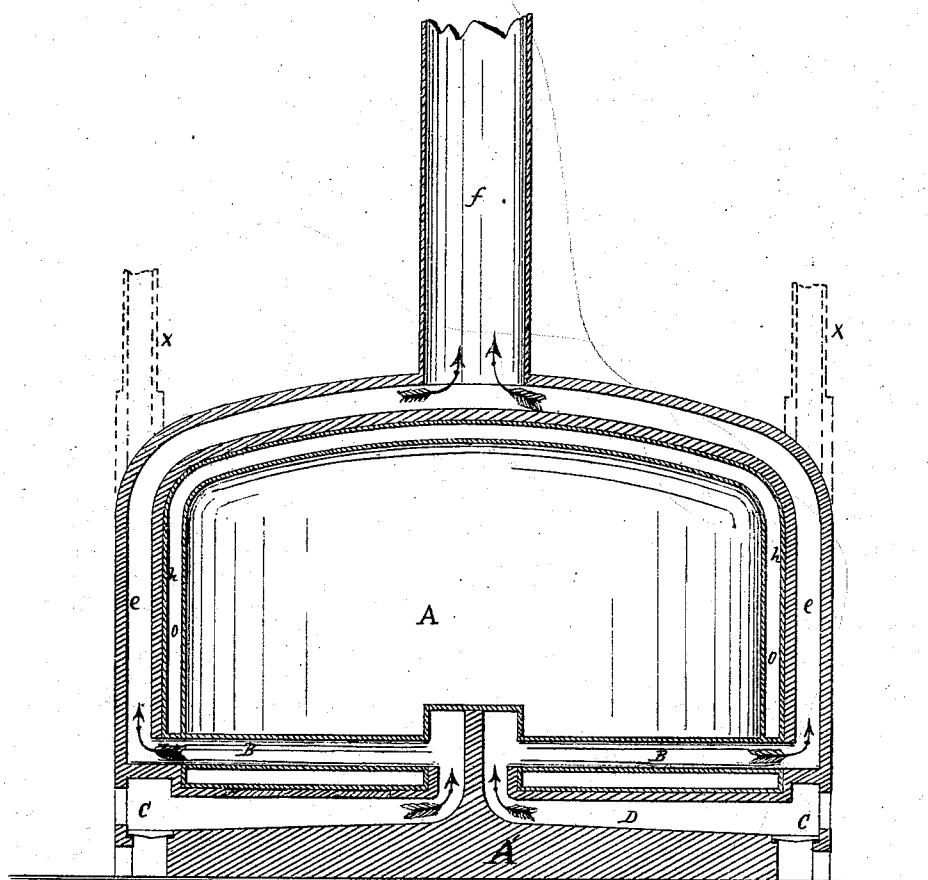


*John Gracie's
Improvement in
Stills for Oil.*

117405

PATENTED JUL 25 1871



Witnesses
Geo. W. Thomas
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Inventor
John Gracie

UNITED STATES PATENT OFFICE.

JOHN GRACIE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN STILLS FOR OIL.

Specification forming part of Letters Patent No. 117,405, dated July 25, 1871.

To all whom it may concern:

Be it known that I, JOHN GRACIE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Stills for Oil; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in a still provided with return-flues communicating with fire-chambers and smoke-flue or flues, the whole being so constructed that the oil in the still will be evaporated without exposing the bottom to a direct action of a distilling or decomposing heat.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawing, which forms a part of my specification, A' represents the masonry of the furnaces and the base upon which the still A rests. The still A is provided with flues B, which are arranged in it in a horizontal position, and communicate with the flues D, which lead to the fire-chambers C, arranged around the still at suitable intervals. The flues B communicate with flues e, which pass up the sides and over the top of the casing h, and connect with the chimney or smoke-stack f. The case h, which surrounds the still, is used for the purpose of protecting the still from the action of the atmosphere, and the space o, which is between the case h and the still, is used for the purpose of cooling off the still prior to filling or charging it with oil, or for the purpose of cleaning it. The casing h should be furnished with openings at its lower edge and at points near its top. These openings should be closed during the op-

eration of distilling. The still should be furnished with two or more openings near its bottom for the purpose of cleaning it, and for admitting cold air into the still after the process of distilling has been completed. The form and size and arrangement of these openings I leave to the judgment of the mechanic and distiller. The still is provided with pipes, condenser, and all the usual appendages of stills for oil, and is charged with oil in the usual manner. The oil, in the evaporating or distilling process, should never fall below the top of the flues B. Each of the smoke-flues e may be continued up as indicated by the dotted lines X. The heat and smoke pass from the furnaces C through flues D into flues B, and from them up through flues e into the chimney or smoke-flue f.

The construction of the still and the several parts connected therewith will be readily understood from the foregoing description and by reference to the accompanying drawing; and the operation of the same will be understood without further description.

I wish it clearly understood that I am aware that evaporating-vessels and stills have been constructed with horizontal flues; but in every such case their bottoms have been exposed to the direct action of the fire.

Having thus described my improvement, what I claim as of my invention is—

The still A provided with a series of horizontal return-flues, B, communicating with fire-chambers and a smoke-flue or flues, substantially as herein described, and for the purpose set forth.

JOHN GRACIE.

Witnesses:

GEO. H. THOMAS,
JAMES J. JOHNSTON.