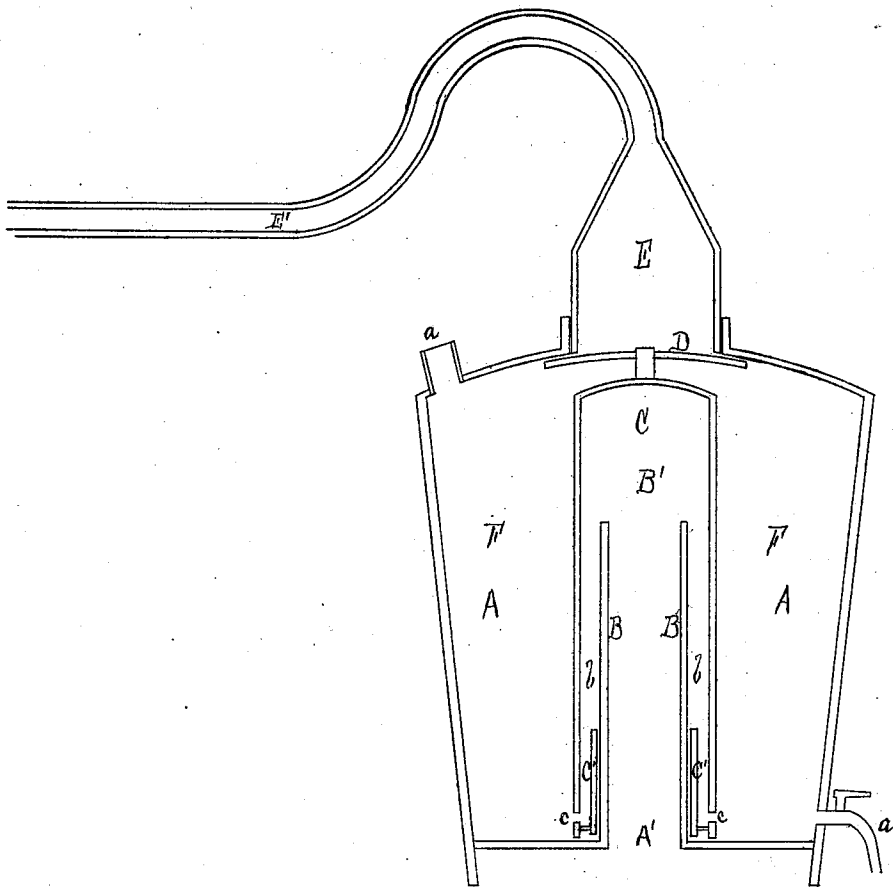


J. A. Campbell,
Alcohol Still.

No. 112,900.

Patented Mar. 21, 1871.



WITNESSES.

Edwin James.

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JAMES A. CAMPBELL, OF DAYTON, VIRGINIA, ASSIGNOR TO HIMSELF,
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Letters Patent No. 112,900, dated March 21. 1871.

IMPROVEMENT IN STILLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES A. CAMPBELL, of Dayton, in the county of Rockingham and State of Virginia, have invented certain new and useful Improvements in Stills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon making part of this specification, in which is represented a vertical sectional view of the still.

The object of my invention is to construct a still that in one vessel shall be combined the singler and doubler, so that the advantages and results of both may be accomplished and attained at and by one continuous process instead of two, as heretofore practiced, and which has invariably required two independent vessels, or else the drawing off the liquor, so as to reconvey it through the same vessel.

In my invention the still in which the singling, consisting of the fruit, grain, or mash, is placed may be an independent vessel, or formed so as to be seated directly on the boiler or steam-generator, resting thereon, as it were, like a cap.

This vessel or still is constructed with a center opening or aperture cut through its bottom or base-plate. This opening is surrounded by a vertical tube. Over this tube is secured, by a spring or other suitable retaining device, a cylinder, having a closed or tight top, but open at the bottom, and with a series of lateral perforations around its lower rim or base.

The relative dimensions of the tube and cylinder are such that, when the one is secured over the other, it shall so fit as to leave an annular steam-passage or chamber, the cylinder forming the outer and the tube the inner wall of the same, while sufficient space shall be left between the top of the cylinder and upper face of the tube, to insure the proper deflection, without danger of accident, of the steam, down through the passage or chamber, from which it escapes through the perforations into the outer or doubling-chamber.

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

A is the still, which is of the ordinary form, and constructed in the usual manner, and may be made of any suitable material. This still A is provided with the ordinary openings *a* and *a'*, for the insertion and discharge of the fruit or mash. This still A is so constructed as to allow of its being used as an independent vessel, or, if preferred, as a cap for the steam-boiler, in which case it is securely bolted or otherwise secured thereon.

In the bottom or base-plate of the still, and at the

center thereof, is an opening, A'. This opening A' is surrounded by a vertical tube, B. The top of this tube B is open and entirely unobstructed, so as to allow of the free exit or escape of the steam. Over this tube B is secured a cylinder, C. This cylinder C is closed at the top and open at the bottom, and is provided with a series of lateral openings *c c*.

The relative dimensions of the cylinder C and tube B are such that, when one is secured over the other, as shown in the drawing, a vertical annular passage or chamber *b* shall be left, the cylinder forming the outer and the tube the inner wall of said chamber *b*.

At the bottom of the cylinder C is secured a guide or bearing ring, C'. This ring is of such diameter as to just allow of its being passed freely over the tube and of its fitting snugly on the same when the cylinder is in position. The advantage of this ring is, that it insures the cylinder being seated over the tube in such manner as to leave the distance between the cylinder and tube uniform throughout.

The height of the cylinder is greater than that of the tube, which leaves a space, B', in which the steam, as it is driven through the tube enters, and from which it is deflected down into the passage *b*.

D is a spring or other suitable retaining-plate-for the cylinder, and has its bearings against the inner surface of the arched or curved breast of the still A.

E is a copper or other cap, and is firmly secured in the neck or center-flanged opening of the still.

B' is a goose-neck or vapor-duct, by which the vapor, as fast as it is generated, is conveyed to the condensing-room or other like receptacle.

It will be observed that by this arrangement of parts two distinct and independent chambers are secured in a single still or vessel, one being the chamber *b*, and the other F, which is between, and is formed by the outer wall of the cylinder C and the inner wall of the still A. The former is the singler and the latter the doubler.

Another great advantage of this form of still is, that it does not require an independent boiler or condenser, provided steam-power is convenient, and it matters not for what purpose it may be designed, this still can be supplied from it, the spring D, under all circumstances, securely retaining the cylinder C in position; and, owing to the fact that the cylinder C is not permanently attached, but so secured by the spring D as to be removed at pleasure, it not only enables the still to be used as either a single or double-chambered vessel, but affords every facility for cleaning the still and the freeing the chamber *b* of sediment and other impurities which will necessarily accumulate therein.

The operation is as follows:

The fruit or mash, through the opening *a*, is introduced into the still. The still is then, by a suitable pipe, connected with the boiler or steam-generator, or the still is secured directly to the generator, being securely seated and bolted thereon. The steam passes up through the tube *B* into the chamber *B'*, from which it is deflected down through the passage *b*, passing out at the openings *c c*, and thence up through the fruit or mash, which has thus been twice subjected to the action of the steam, once direct and the other by the steam passing through the chamber *b*.

As my improvement is confined entirely to the still, I have limited my description to the same, and would only remark that, in connection with the singling and

doubling still herein described, any boiler or condenser may be used.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent of the United States, is—

The detachable or removable cap cylinder *C*, tube *B*, and spring *D*, combined and arranged within the still *A*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

Witnesses: JAMES A. CAMPBELL.

JOS. T. K. PLANT,

EDWIN JAMES.