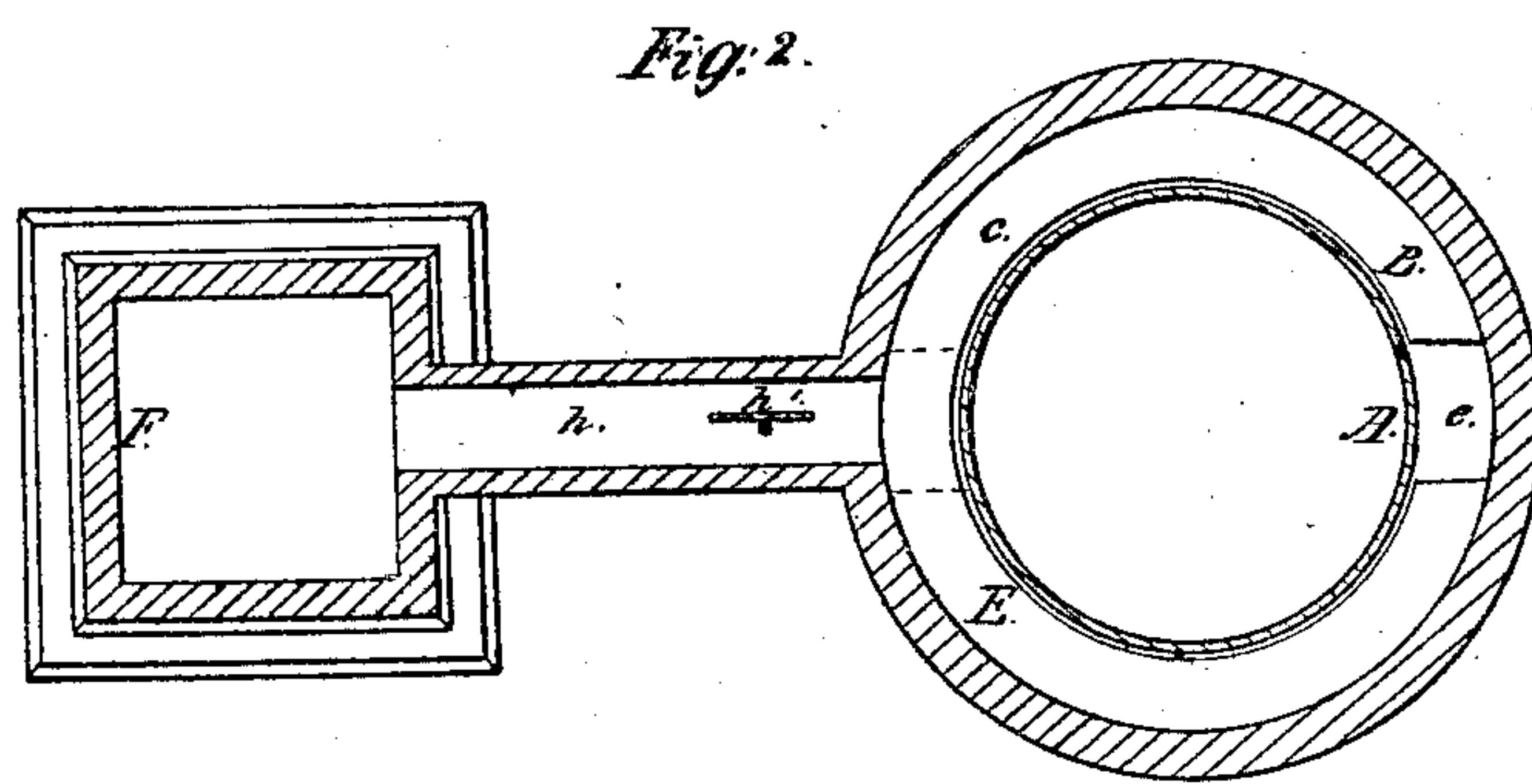
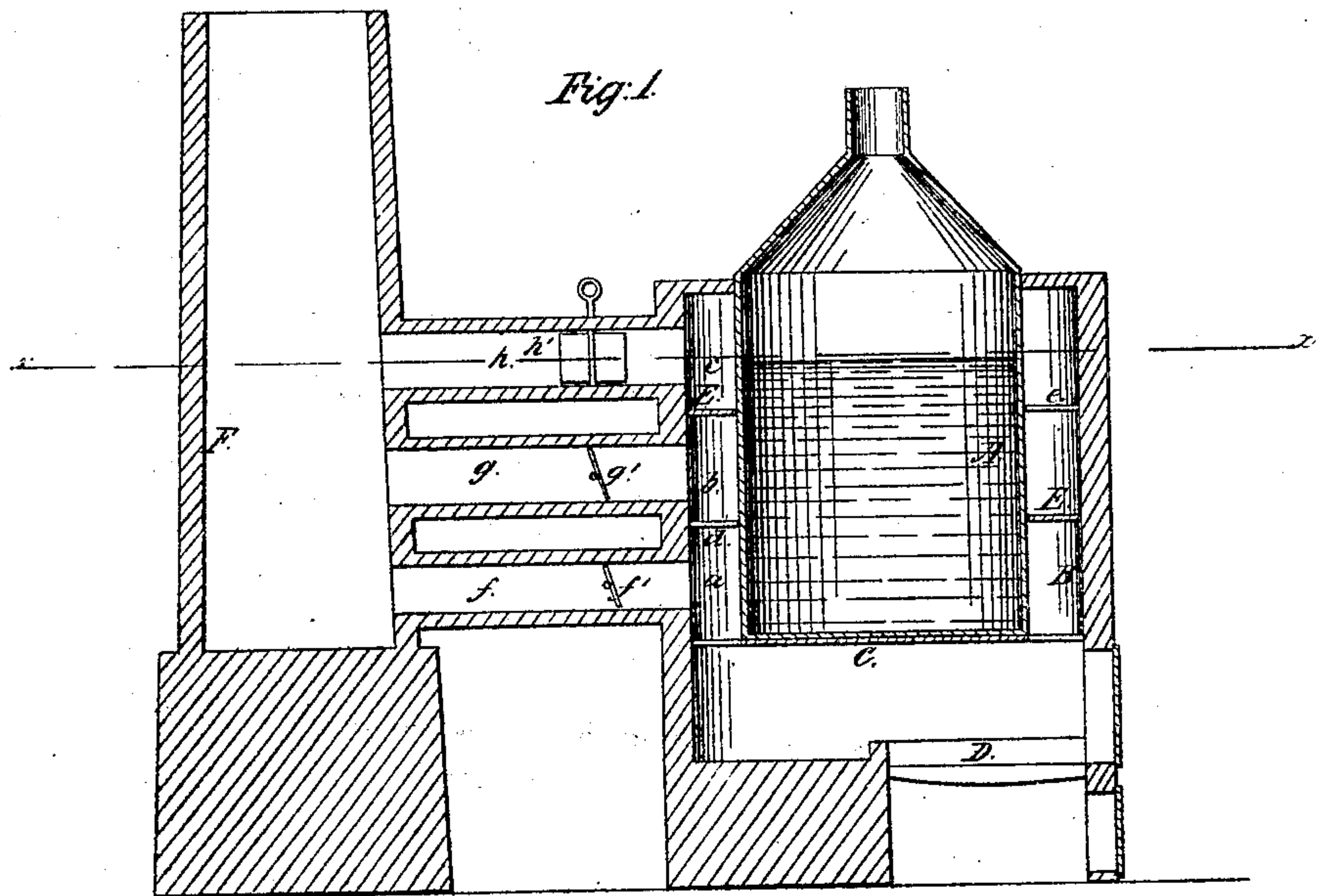


L. PRAY.  
DISTILLING APPARATUS.

No. 61,098.

Patented Jan. 8, 1867.



Witnesses:  
Thos. Twiss  
J. A. Service.

Inventors:  
Lyman Pray.  
Per [Signature]  
Attorneys

# United States Patent Office.

LYMAN PRAY, OF CHARLESTOWN, MASSACHUSETTS.

*Letters Patent No. 61,098, dated January 8, 1867.*

## IMPROVED DISTILLING APPARATUS.

*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, LYMAN PRAY, of Charlestown, in the county of Middlesex, and State of Massachusetts, 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 vertical section of this invention.

Figure 2 is a horizontal 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 a still, the fire-chamber or arch of which is provided with two or more shelves, forming separate heating-chambers, one above the other, each of which connects by a suitable flue with a smoke stack, said flues being provided with dampers in such a manner that by means of said dampers and shelves the heat can be confined to the level of the liquid in the still, or nearly so, and the scorching of the vapors can be avoided without difficulty.

A represents a still, either upright or horizontal, and of any convenient size and form. In the drawing, an upright cylindrical still is shown, which is placed into the fire-chamber B, being supported by a perforated plate, C, through the apertures of which the heat from the fire-place, D, passes up. Said fire-chamber is provided with one or more shelves, E, which are arranged at suitable distances apart, and provided with central openings just large enough to admit the still. By these shelves the fire-chamber is divided in two or more heating-chambers, *a b c*, which communicate with each other through apertures, *d e*, which are situated diametrically opposite each other, so that heated gases, after having passed up through one aperture, have to travel round the still in order to reach the opposite aperture. From each of the heating-chambers *a b c* extends a flue, *f g h*, to the smoke stack F, and these flues are provided with dampers, *f' g' h'*, the position of which can be controlled by suitable handles. If the still is full, the dampers *f'* and *g'* are closed, and the damper *h'* is opened. The heated gases are thus compelled to pass up through the several heating-chambers *a b c* before they are permitted to escape through the flue *h* to the smoke stack. As the liquid in the still evaporates, and its level becomes gradually lower and lower, the damper *h'* is closed, and the damper *g'* is opened, and by these means the heat is confined, as near as possible, to the level of the liquid in the still, and the scorching of the vapors is avoided. In ordinary stills, the heated gases surround the still from the bottom to the top of the fire-chamber, and as the level of the liquid sinks down, the vapors contained in the upper part of the still are superheated, and liable to be scorched; and if the still is used for distilling petroleum, the oil resulting from the distillation assumes a dark color. This difficulty is avoided in my still, in which the heat can easily be confined to a level with the liquid. It is obvious that this invention is applicable to horizontal as well as to upright stills, and no further explanation is required to make the arrangement, as applied to a horizontal still, intelligible.

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

The arrangement of one or more shelves, *d e*, in the fire-chamber B, of a still, to operate in combination with the still A, flues *f g h*, and dampers *f' g' h'*, substantially as and for the purpose set forth.

The above specification of my invention signed by me this 5th day of October, 1866.

LYMAN PRAY.

Witnesses:

WM. F. McNAMARA,

W. HAUFF.