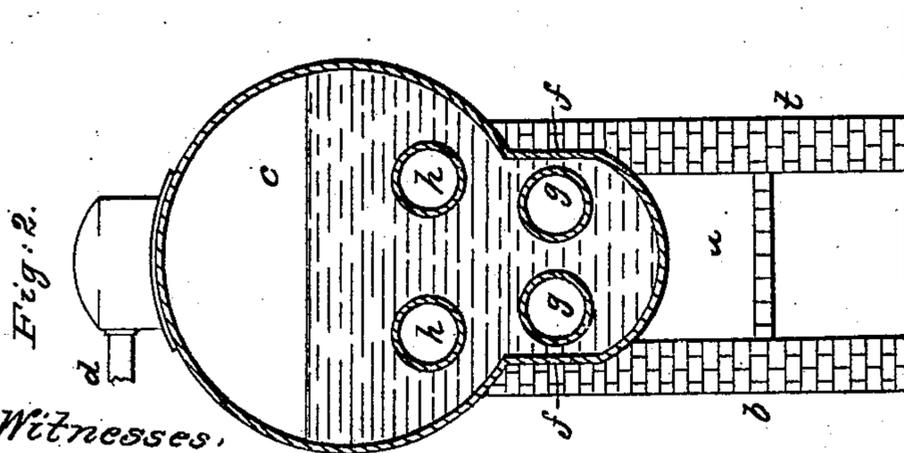
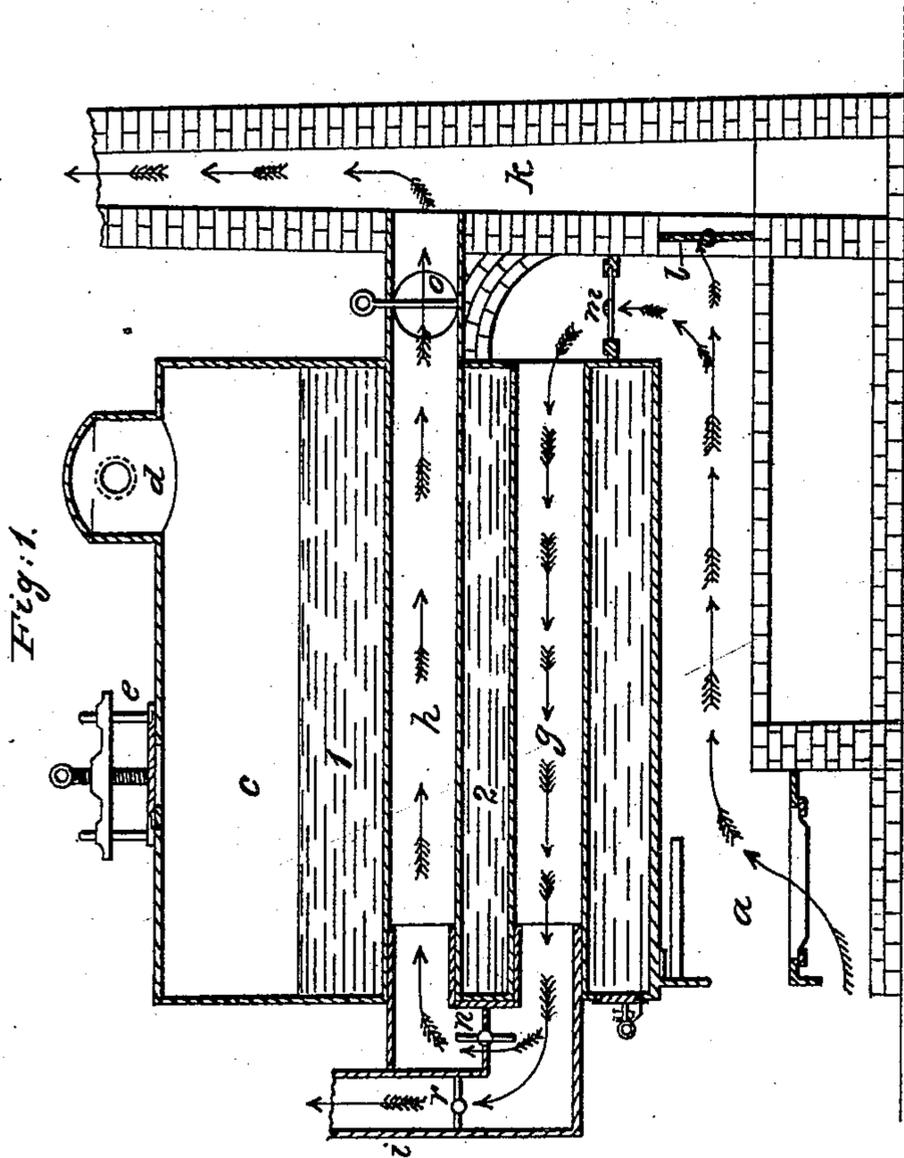


A. LAPHAM.
Oil Still.

No. 59,317.

Patented Oct. 30, 1866.



Witnesses,
Geo. D. Walker
Thos Geo Harold

Inventor:
Allen Lapham.

UNITED STATES PATENT OFFICE.

ALLEN LAPHAM, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND
JOB JOHNSON.

IMPROVEMENT IN STILLS FOR PETROLEUM.

Specification forming part of Letters Patent No. 59,317, dated October 30, 1866.

To all whom it may concern:

Be it known that I, ALLEN LAPHAM, of the city of Brooklyn, in the county of Kings and State of New York, have invented and made a certain new and useful Improvement in Stills for Petroleum, &c.; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a vertical longitudinal section of my improved still, and Fig. 2 is a transverse section of the same.

Similar letters of reference denote the same parts.

In the distillation of petroleum the crude oil becomes less and less as the charge is worked off, which allows the vapors to come in contact with the heated sides of the still, and tends to char and discolor the vapors and the distilled oil. Besides this, the still is liable to become injured by too great heat acting above the surface of the petroleum.

The nature of my said invention consists in an arrangement of flues, dampers, and tubes whereby heat is applied only to those portions of the still that are below the level of the petroleum therein, so that neither the still nor the products of distillation are injuriously affected, and the heat from the fire is turned off from the upper flues as the level of the liquid descends.

In the drawings, *a* represents a furnace formed of brick-work *b*, sustaining a still, *c*. *d* is a pipe to the condenser, as usual, and *e* is a man-hole plate.

The still *c* is made narrow at the bottom, with vertical sides at *f*, set in the brick-work *b*, the upper cylindrical portion of said still setting upon the brick-work, as seen in Fig. 2. Through the still the pipes or flues *g g* and *h h* pass.

i is an ascending flue, and *k* is the main

chimney. *l, m, n, o,* and *r* are dampers between the respective flues and chimney.

When a charge of crude oil is put in, the dampers *l* and *r* are to be closed and all the other dampers left open. Hence the fire and heat pass below the boiler through the flues *g g* and *h h* to the chimney *k*. When the liquid descends to about the line 1, the dampers *n* and *o* are to be closed, and the products of combustion pass off by the flue *i*, the damper *r* being opened; and when the liquid is evaporated so that it stands at about the level 2, the damper *m* is to be closed and the damper *l* opened, which allows the heat to pass only under the bottom of the still and pass off by the flue or chimney *k*.

By this arrangement I am enabled to prevent the vapors coming into contact with heated metal, because the heat is kept below the level of the oil, and as the petroleum or other oil is evaporated it is brought into a smaller compass in the lower part of the still.

The pipes *g* and *h* may be increased or decreased in number according to the capacity of the still.

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

1. The arrangement of the flues *g* and *h* and dampers, applied to the still *c*, substantially as set forth, for preventing the still becoming heated above the liquid therein, for the purposes set forth.

2. Forming the lower portion of the still over the fire narrower than the upper portion, as shown, and combining therewith the flues *g*, as and for the purposes set forth.

In witness whereof I have hereunto set my signature this 25th day of July, 1866.

ALLEN LAPHAM.

Witnesses:

GEO. D. WALKER,
THOS. GEO. HAROLD.