

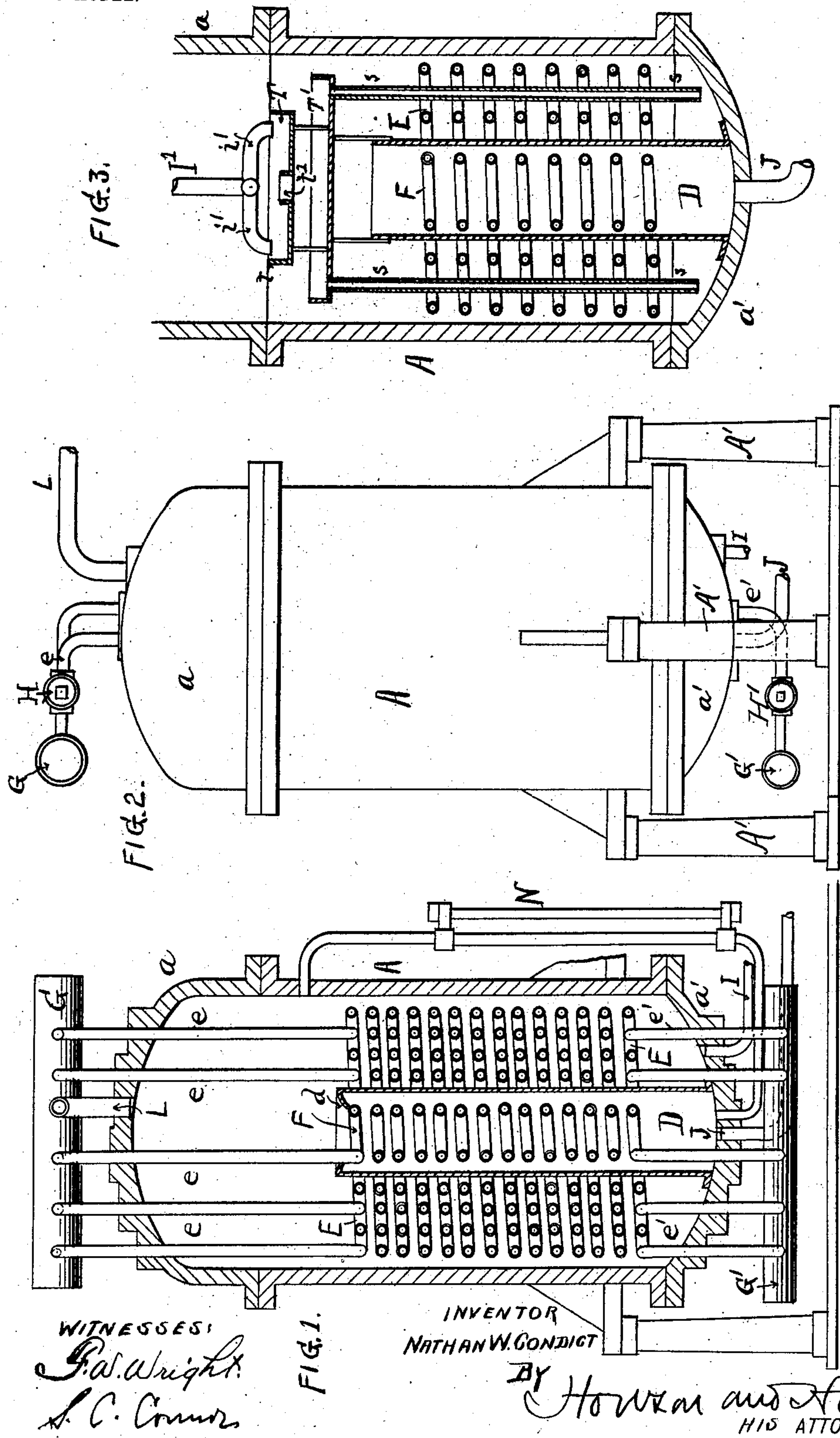
No. 747,943.

PATENTED DEC. 29, 1903.

N. W. CONDUCT.
GENERATOR FOR REFRIGERATING APPARATUS.

APPLICATION FILED DEC. 27, 1901.

NO MODEL.



UNITED STATES PATENT OFFICE.

NATHAN W. CONDUCT, OF JERSEY CITY, NEW JERSEY.

GENERATOR FOR REFRIGERATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 747,943, dated December 29, 1903.

Application filed December 27, 1901. Serial No. 87,466. (No model.)

To all whom it may concern:

Be it known that I, NATHAN W. CONDUCT, a citizen of the United States, residing in Jersey City, in the county of Hudson, State of New Jersey, have invented Improved Generators for Refrigerating Apparatus, of which the following is a specification.

In the operation of refrigerating apparatus working on the ammonia or other absorption system the most troublesome part of the apparatus is the generator or still in which the gas is generated from the ammoniacal liquor. The trouble is due in large part to the changing conditions of the quantity of liquor in the still in relation to the heating-surface, which is usually formed of steam pipes or coils. Thus a common difficulty in either the vertical or horizontal style of still is that in the working of the apparatus the level of the liquor will drop below the upper steam-coils or upper parts of the coils. Such changing conditions of the quantity of liquor in relation to the heating-surface produce irregular action in the working of the complete plant and varying and uncertain results at the point where the refrigeration is needed.

The principal feature of my present invention is the construction of the still or generator so that a practically constant quantity of ammoniacal liquor will be maintained in such generator or still at all times to cover the whole of the heating-surface, and so maintain uniform action of the refrigerating plant at all times.

In the accompanying drawings, Figure 1 is a vertical section of a form of still embodying my invention. Fig. 2 is an external view of the same at right angles to Fig. 1. Fig. 3 is a vertical sectional view of a modification.

In the figures I have represented the generator as of the upright or vertical cylinder type mounted upon pillars A'; but it will be understood that my invention may be applied to other forms or types of still.

In Fig. 1 I have shown the upright cylindrical casing A provided with a sufficient number of annular heating-coils E to permit exhaust-steam to be used as the heating medium. I prefer to take the steam in at the upper end, as by means of a pipe G, having branches e e, provided with valves H and pass-

ing through the head a of the cylinder in any usual way to the several coils E. Similarly, the coils have outlet ends e' e' at the bottom, passing through the lower head a' of the cylinder and leading to the discharge-pipe G', valves H' being provided in the pipes e' between the head and the pipe G'.

I provide in the still an overflow for the weak-liquor outlet. This overflow I prefer to make in the form of a cylinder D, arranged in the center of the still within the annular coils E and secured at its lower end to the inner face of the head a' with a tight joint, but open at its top. The open top of this overflow D is a little higher than the top-most steam-pipes in the still. The outlet-pipe J for the weak liquor leads from within this overflow D at the bottom, while the strong liquor is fed into the heating-space between the walls of the still and this overflow, as by means of a pipe I. Thus the weak liquor can be drawn off from the still only as fast as it overflows from the heating-space or main body of the still into the overflow-pipe D, and consequently in that heating-space the quantity of liquor will remain constant. If desired, an additional heating-coil F may be arranged within the overflow D, the top of the latter being provided with an internal flange d to direct the overflowing liquor onto the coils F, so that the latter may drive off any gas remaining in the overflowing liquor. It will be understood that the heating-coils E and F are imperforate and do not admit steam into the contents of the still. The gas passes off from the top of the still through a pipe L. A gage N may be provided, communicating at the bottom with the bottom of the overflow D and at the top with the upper part of the still, to show the level of weak liquor within the overflow.

Instead of bringing in the strong liquor into the heating-space through the bottom header, as indicated in Fig. 1, I prefer to bring it in in the way which I have for the sake of simplicity shown separately in Fig. 3. As there shown, the strong-liquor supply-pipe I' comes in at the top of the still and has lateral branches i' i' discharging onto an upper tray T. This tray has a marginal flange t and central flanged outlet t', whence

the liquor drips onto a larger flanged tray T', also with a marginal flange and an outlet pipe or pipes s discharging near the bottom of the heating-space of the still. By the use
5 of a heater or heat-exchanger the incoming strong liquor can be considerably heated by the time it reaches the still, so that as it passes over the trays in the gas-space in the still generation may begin at once.

10 I claim as my invention—

1. A still for an absorption refrigerating apparatus, the said still having an overflow for the weak liquor, a strong-liquor inlet near the bottom of said still on one side of the
15 overflow, imperforate heating-coils on the same side of the overflow, and a weak-liquor outlet near the bottom of the still on the other side of the overflow and a gas-outlet at the top, as and for the purpose described.

20 2. A still for an absorption refrigerating apparatus, said still having a gas-outlet at the top, a central overflow-pipe, at the bottom of which is the weak-liquor outlet, and imperforate heating-coils about the central
25 overflow-pipe, the strong-liquor inlet being

in the heating-space about the central overflow.

3. A still for an absorption refrigerating apparatus, said still having imperforate heating-coils, with an overflow-pipe at the weak-liquor outlet and a supplementary heating-coil within said overflow-pipe, as and for the
30 purpose described.

4. A still for an absorption refrigerating apparatus, said still having heating-coils with
35 a strong-liquor supply, drip-trays to which said supply discharges in the gas-space in the upper part of the still, and a pipe to carry the liquor from the lower tray to near the bottom of the still, the coils and drip-trays
40 being within the distilling-chamber, substantially as described.

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

NATHAN W. CONDUCT.

Witnesses:

F. WARREN WRIGHT,
HUBERT HOWSON.