

No. 863,031.

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F. H. LEHNERT.
APPARATUS FOR TREATING FOAMING LIQUIDS.
APPLICATION FILED FEB. 23, 1907.

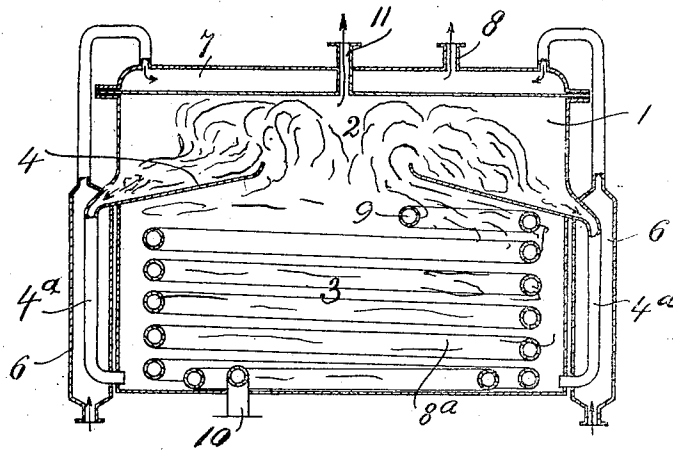


Fig. 1.

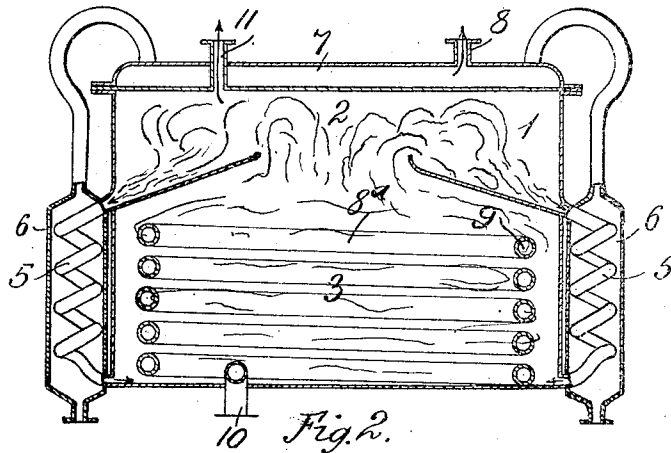


Fig. 2.

Witnesses:—
Charles H. Schilling
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Inventor
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by Paul B. Schilling
his attorney

UNITED STATES PATENT OFFICE.

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APPARATUS FOR TREATING FOAMING LIQUIDS.

No. 863,031.

Specification of Letters Patent.

Patented Aug. 18, 1907.

Original application filed June 23, 1906, Serial No. 323,011. Divided and this application filed February 23, 1907. Serial No. 359,021.

To all whom it may concern:

Be it known that I, FRANZ HEINRICH LEHNERT, a subject of the Emperor of Austria, residing at Dresden, Plauen, Germany, have invented new and useful Improvements in Apparatus for Treating Foaming Liquids, of which the following is a specification.

This application is a division of an application filed in the United States Patent Office, June 23, 1906, Serial Number 323,011.

The present invention has reference to an apparatus for treating foaming liquids, and relates more especially to an apparatus for quickly condensing the foam, in boiling certain liquids, for instance in the manufacture of soap, and it essentially consists of special means for cooling the ducts leading back the froth or foam into the boiling mass.

In order to make the invention more readily understood, I will now describe it with reference to the accompanying sheet of drawing.

Figure 1 is a vertical sectional elevation of a boiler embodying my invention and Fig. 2 is a similar view illustrating a slightly modified form thereof.

The boiler is indicated at 1, and is of any suitable shape usually cylindrical or elliptic in horizontal section, and it is substantially divided into an upper chamber 2 and a lower chamber 3 by means of an inverted conical plate or diaphragm 4. The chamber 2 is connected with the chamber 3 by means of outside ducts or tubes, which cool the liquid contents passing through them. In Fig. 1 these tubes are straight as at 4^a while in Fig. 2, they are coiled, as at 5. These ducts or tubes of either form may be jacketed as at 6 in Fig. 1 or exposed to the atmosphere as in Fig. 2. When they are jacketed, the jacket 6 forms the inlet tube to introduce a cooling medium into a hollow cooling cover or jacket

7, from which leads an exit 8 which may be suitably connected with a drain or other discharge pipe (not shown). Within the chamber is a steam or other heating coil 8^a which has circulation by means of an entrance or supply opening 9 and exit 10.

Such apparatus may be used for instance in the manufacture of certain soaps, and the operation is then as follows:—The mixture of the substances and water is filled into the lower chamber and boiled. The carbonic acid generated during the boiling period, escapes, as shown by the foaming of the mixture. The froth and the water vapors rising during the boiling process are condensed more or less on the cooled boiler cover and drop back and pass through the cooled ducts leading back to the lower boiler chamber and are thereby still further condensed. The free carbonic acid escapes through the vent pipe 11.

I am aware that apparatus have been constructed for condensing the foam and water vapor, but have found that the condensation by means of such known apparatus can be accelerated to a considerable degree by providing special means for cooling the ducts which lead back the partly condensed products to the boiling mass.

I claim as new

An apparatus for treating foaming liquids provided with upper and lower communicating chambers and a hollow condensing cover superposed above the entire upper chamber, in combination with supply pipes for said condensing cover located outside the boiler, and cooling ducts passing through said supply pipes and connecting the upper and lower chambers of the boiler.

In testimony whereof I affix my signature, in presence of two subscribing witnesses.

FRANZ HEINRICH LEHNERT.

Witnesses:

PAUL ARRAS,
CLARE SIMON.