

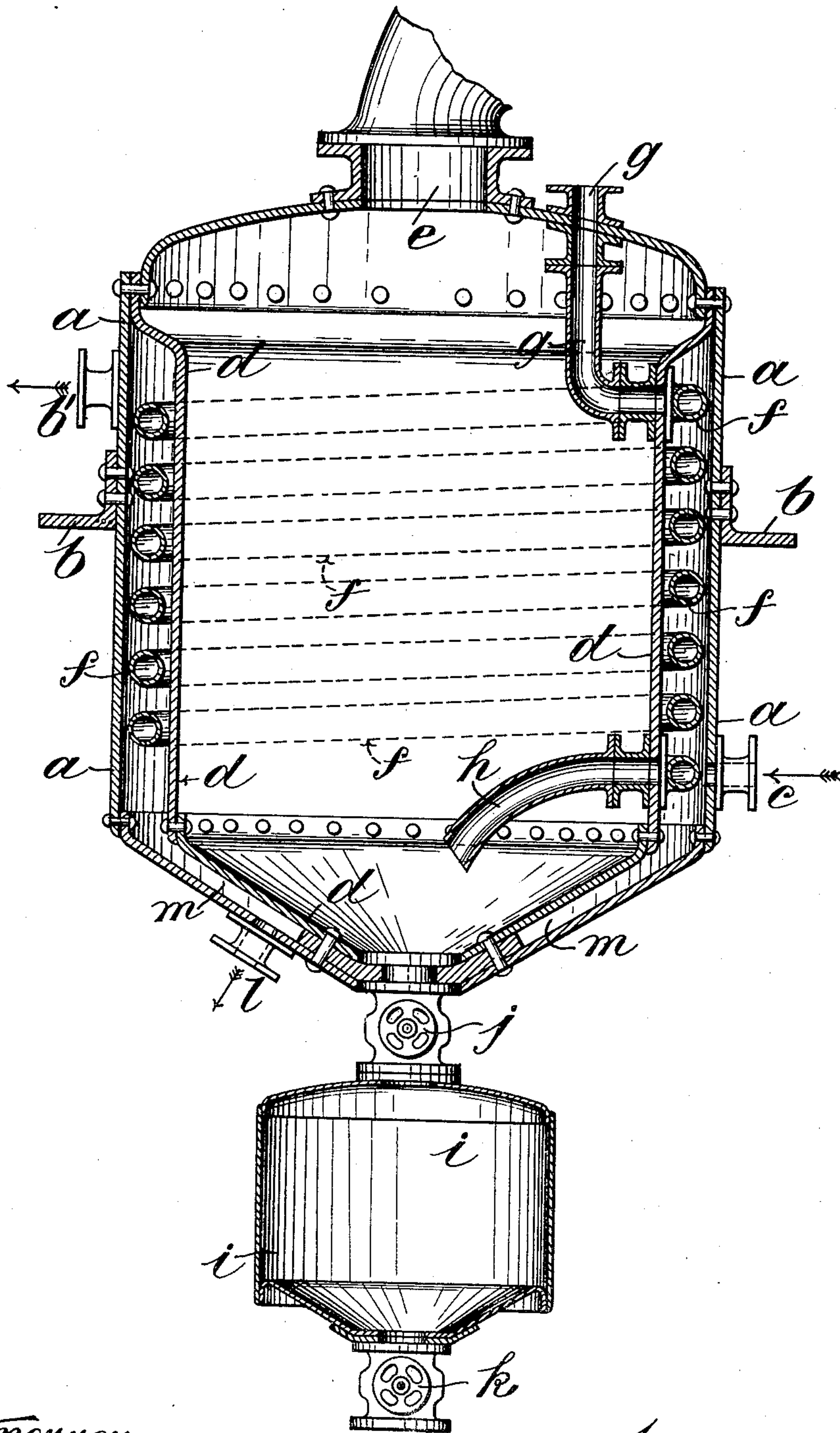
No. 859,352.

PATENTED JULY 9, 1907.

O. UNGLAUB.

MEANS OR APPARATUS FOR DISTILLING AND EVAPORATING.

APPLICATION FILED SEPT. 6, 1906.



Witnesses.

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UNITED STATES PATENT OFFICE.

OSCAR UNGLAUB, OF SALFORD, ENGLAND.

MEANS OR APPARATUS FOR DISTILLING AND EVAPORATING.

No. 859,352.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed September 6, 1906. Serial No. 333,564.

To all whom it may concern:

Be it known that I, OSCAR UNGLAUB, a subject of the Emperor of Germany, and a resident of Salford, in the county of Lancaster, England, chemical and technical engineer, and whose post office address is 25 Seedley road, Pendleton, Salford, have invented a certain new and useful Improved Means or Apparatus for Distilling and Evaporating Liquids in Vacuum, of which the following is a specification.

10 This invention relates to an improved means or apparatus for distilling and evaporating both light and heavy liquids under vacuum, such, for instance as glycerin or the like or any other liquid capable of being dealt with by the method and means hereinafter described, the principal object of the invention being to effect the distillation, or distillation and evaporation of said liquids, without having a body of the liquid in the interior of the still, a special feature of the apparatus being the locating of the coil through which the liquid to be distilled or evaporated is passed, in a jacket or chamber formed between the exterior of the still body and the interior of the external or surrounding case.

My invention will be fully described with reference to the accompanying drawing which shows a vertical sectional elevation of an apparatus designed to carry out my invention.

In this apparatus *a* represents an outer casing which may be supported in any suitable manner such as by plates or the like *b* which may suspend the apparatus either above or below the ground level.

c indicates an inlet for steam in the outer case and *b'* an outlet therefor.

In the interior of the outer case I arrange a second casing *d* somewhat concentric with the other, at any rate so far as the vertical portion and the base portion is concerned. The interior of the second casing communicates by means of an outlet *e* with any suitable form of condensing apparatus in which the vapors due to evaporation may be properly condensed. Between the inner and outer casings I locate a coil of suitably constructed piping *f* through which the liquid to be distilled or evaporated or both, may pass, the entrance to such coil being through a pipe *g* while the exit from the coil to the interior of the still chamber is by means of the pipe *h*. At the bottom end of the still I locate a second vessel or chamber *i* adapted to receive the

heavier portion of the liquid or the residue of the liquid being distilled or evaporated, this second vessel being provided with a valve *j* between it and the still and with an outlet valve *k* at its lower end for the passage of the residue or heavier liquid. *l* also represents a further outlet for steam if desired and which may also act as an outlet for any water of condensation which may result in the chamber *m* between the inner and outer casings of the still.

In an apparatus of the character described the chamber *m* and likewise the coil located in it may be heated by steam circulating round said chamber. The liquid to be distilled and evaporated passing through the coil. As the liquid issues from the pipe *h* the lighter portion is expanded and rises in the vacuum chamber and passes off to the condenser while the heavier liquid falls down into the receiving chamber *i*, the valve *j* being open during the conduct of the process. When it is desired to remove the heavier liquid or residue from the receiver *i* the valve *j* is closed and the outlet valve *k* opened. In dealing with heavy liquids such, for instance, as glycerin steam may also be passed along with it through the coil *f*.

It will be seen that in an apparatus of the character described the liquid or liquids is or are distilled or separated or evaporated as it or they issue from the exit of the coil, no body of liquid remaining in the interior of the still. No liquid can, therefore, boil over and this being so it is not necessary to employ any means for receiving such and for returning it to the still as in some apparatus in use prior to the date of my invention. Further I obtain a purer distilled liquid.

What I claim as my invention and desire to secure by Letters Patent is:—

In combination, an outer receptacle, an inner receptacle secured thereto and formed in conjunction with the outer receptacle, a chamber, an outlet for the inner receptacle, a coil embracing the inner receptacle, said coil being in communication with the exterior of the outer receptacle and passing through the inner receptacle, said coil terminating within the inner receptacle at the base thereof, a steam inlet for the chamber and a receiving chamber beneath the receptacles and in communication with the inner receptacle.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

OSCAR UNGLAUB.

Witnesses:

WILLIAM W. TAYLOR,
MABEL LEE.