

## Title (en)

Bath vaporiser-condensor and corresponding air distillation device

## Title (de)

Bad Verdampfer-Kondensor und Luftzerlegungsvorrichtung

## Title (fr)

Vaporiseur-condenseur à bain et appareil de distillation d'air correspondant

## Publication

**EP 1087194 A1 20010328 (FR)**

## Application

**EP 00402606 A 20000920**

## Priority

FR 9911777 A 19990921

## Abstract (en)

The vaporization passages are subdivided by separation bars (15, 16) into at least two superimposed vaporization regions (13A-13C) where each is entirely open at top and bottom. Each vaporization region includes a liquid recirculation corridor (14A-14C) and, at its top end, means (16B, 16C) of allowing liquid to overflow to the next region down. Vaporizer-condenser bath with at least one exchanger body (5) made of a stack of parallel plates (8), closing bars (9) and corrugated bracings (10) which define a series of vaporization passages (11) open at the bottom and the top and a series of condensation passages (12). Each region has a separate bath and the top of each lower and intermediate region is spaced vertically by the separation bars which support the next bath up. The exchanger body contains means of feeding liquid to the top region and means of extracting vapor from each intermediate level between two regions. The means of extracting vapour comprise openings (27) defined in the side closing bars (9). The lower separation bar (15) of each region is connected at one end to a side closing bar and the overflow operates that the other end. The recirculating corridor is placed inside the vaporization passage, in particular between the vaporization region and the side closing bar. Each lower separation bar only extends over part of the vaporization passage and the overflow is made possible using a retention bar inside the vaporization passage. The vaporization passages are not interconnected and the liquid is fed equally to each vaporization passage, or the vaporization passages are connected using a lateral channel extending the width of the vaporizer-condenser. The lateral channel acts as the overflow and provides means of recirculating the liquid. Air distillation unit containing such a vaporizer-condenser to vaporize liquid oxygen by condensing nitrogen.

## Abstract (fr)

Ce vaporiseur-condenseur à bain (4), du type à plaques brasées, comporte des passages de vaporisation (11) subdivisés en plusieurs régions de vaporisation superposées (13A à 13C) dont chacune est immergée dans un bain (28A à 28C) de hauteur partielle, et des moyens d'alimentation en liquide de la région de vaporisation supérieure (13C). Les régions de vaporisation (13A à 13C) sont espacées verticalement les unes des autres, et chaque région est entièrement ouverte à ses extrémités supérieure et inférieure. Application aux vaporiseurs-condenseurs principaux des doubles colonnes de distillation d'air. <IMAGE>

## IPC 1-7

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## IPC 8 full level

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## Citation (search report)

- [X] FR 2064065 A7 19710716 - LINDE AG
- [X] US 5775129 A 19980707 - SACHELL JR DONALD PRENTICE [US], et al
- [A] FR 2237158 A1 19750207 - TEAL PROCEDES AIR LIQUIDE TECH [FR]

## Cited by

EP2645038A1; EP2645037A1; FR3010779A1; US10605536B2; US9335102B2; WO2018087472A1

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