Abstract : The method of the invention includes cooling an inlet stream (72) within an upstream heat exchanger (28). The method includes feeding the cooled inlet stream (76) into a fractioning column (50) and collecting the denitrogenated hydrocarbon stream at the bottom of the column (50). The method includes feeding a nitrogen-rich stream (106) from the head of the column (50) into a disengager (60) and collecting the gaseous head stream from the disengager (60) in order to form the helium-rich stream (20). The liquid stream (110) from the base of the first disengager (60) is separated into a liquid nitrogen stream (18) and into a first reflux stream (114) that is fed as a reflux into the head of the fractioning column (50).

Abrégé :
Ce procédé comprend le refroidissement d'un courant d'introduction (72) au sein d'un échangeur thermique amont (28). Il comprend l'introduction du courant d'introduction refroidi (76) dans une colonne de fractionnement (50) et le prélèvement au fond de la colonne (50) du courant d'hydrocarbures déazoté. Il comprend l'introduction d'un courant riche en azote (106) provenant de la tête de la colonne (50) dans un ballon séparateur (60) et la récupération du courant de tête gazeux issu du ballon séparateur (60) pour former le courant riche en hélium (20). Le courant liquide (110) issu du pied du premier ballon séparateur (60) et est séparé en un courant d'azote liquide (18) et en un premier courant de reflux (114) introduit en reflux dans la tête de la colonne de fractionnement (50).
A. CLASSIFICATION OF SUBJECT MATTER

INV. F25J3/02 F25J1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F25J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<td>US 5 339 641 A (MATHIS MARY J [US] ET AL) 23 August 1994 (1994-08-23) figures 1,2</td>
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X Further documents are listed in the continuation of Box C. X See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the international search: 4 April 2011

Date of mailing of the international search report: 08/04/2011

Name and mailing address of the ISA/Authorized officer:
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2040, Fax: (+31-70) 340-3016
Göritz, Dirk
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Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

B. DOMAINE SUR LESQUELS LA RECHERCHE A PORTE

Documentation minimale consultée (système de classification suivi des symboles de classement)

F25J

Documentation consultée autre que la documentation minimale dans la mesure où ces documents relèvent des domaines sur lesquels a porté la recherche

Base de données électronique consultée au cours de la recherche internationale (nom de la base de données, et si cela est réalisable, termes de recherche utilisés)

EPO-Internal

C. DOCUMENTS CONSIDERES COMME PERTINENTS

<table>
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<th>Catégorie*</th>
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figures 3,5
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alinéas [0082], [0088], [0091], [0096], [0097] | 1-8, 11-13 |
figure 2 | 1-8, 11-13 |
figures 1,2 | 1,3,4, 11,13 |
figure 2 | 1,6,7,11 |

X Voir la suite du cadre C pour la fin de la liste des documents

X Les documents de familles de brevets sont indiqués en annexe

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**"S"** document qui fait partie de la même famille de brevets

Date à laquelle la recherche internationale a été effectuée

4 avril 2011

Date d'expédition du présent rapport de recherche internationale

08/04/2011

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NL-2280 HV Rijswijk
Tel: (+31-70) 340-2040
Fax: (+31-70) 340-3016

Göritz, Dirk
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