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(54) Title: NASAL DELIVERY DEVICES

(57) Abstract: A nasal delivery device for and a method of delivering a substance to a nasal cavity of a subject, the delivery device comprising: a delivery unit (1) for delivering a flow entraining a substance to one nostril of a subject, the delivery unit including a nosepiece (6) for fitting to a nostril of the subject; and a flow resistor (2) unit for fitting to the other nostril of the subject, the flow resistor unit including a progressive resistor (28) for progressively providing an increasing flow resistance to the delivered flow.



A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61M15/08

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) IPC 7-461M

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Х	WO 00 51672 A (DJUPESLAND PER GISLE) 8 September 2000 (2000-09-08)	21,23-37		
Υ	cited in the application page 17, line 2 -page 18, line 2	1-3, 6-20,22		
Α	the whole document	4,5		
Y	WO 98 53869 A (KELDMANN ERIK ;KELDMANN TROELS (DK); DIRECT HALER A S (DK); PELAEZ) 3 December 1998 (1998-12-03) page 13, line 25 -page 15, line 23 abstract; figures	1,3, 6-20,22		
Υ	DE 298 14 024 U (HEYDE REGINE) 8 October 1998 (1998-10-08) page 1, paragraph 2; figures	2		
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Further documents are listed in the continuation of box C.	Patent family members are listed in 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 filling 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 filling 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 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
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PCT/IB 02/01522

C.(Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	FC1/1B 02/01522	
Category °	Relevant to claim No.		
A	US 5 727 546 A (SHEPHERD MICHAEL TREVOR ET AL) 17 March 1998 (1998-03-17) abstract; figures	3,4,22	

ternational application No. PCT/IB 02/01522

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. X Claims Nos.: 38-46 because they relate to subject matter not required to be searched by this Authority, namely: Method of treatment of the human body by therapy (Art.17.2.a.i) and Rule 39.1.iv) PCT)
Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

information on patent family members

In ational Application No
PCT/IB 02/01522

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 0051672 A	08-09-2000	AU BR CN EP EP GB WO NO	2822700 A 0008650 A 1342093 T 1161274 A1 1180378 A2 2349092 A ,B 0051672 A1 20014182 A 200102563 T2	21-09-2000 26-12-2001 27-03-2002 12-12-2001 20-02-2002 25-10-2000 08-09-2000 01-11-2001 22-04-2002
WO 9853869 A	03-12-1998	AU BR CN WO EP HU JP NO NZ PL SK TR	730843 B2 7639298 A 9809499 A 1258223 T 9853869 A1 0986413 A1 0002538 A2 2001526577 T 995798 A 501157 A 336975 A1 160499 A3 9902899 T2	15-03-2001 30-12-1998 20-06-2000 28-06-2000 03-12-1998 22-03-2000 28-12-2000 18-12-2001 26-11-1999 27-04-2001 31-07-2000 11-07-2000 22-05-2000
DE 29814024 U	08-10-1998	DE	29814024 U1	08-10-1998
US 5727546 A	17-03-1998	AT CA DE DE DK EP ES FI WO JP NO SG US	172124 T 2169760 A1 69413989 D1 69413989 T2 714314 T3 0714314 A1 2122319 T3 960704 A 9505208 A1 9501581 T 960610 A 82544 A1 6109261 A	15-10-1998 23-02-1995 19-11-1998 08-04-1999 23-06-1999 05-06-1996 16-12-1998 16-02-1996 23-02-1995 18-02-1997 28-03-1996 21-08-2001 29-08-2000