



⑫

## EUROPEAN PATENT APPLICATION

⑬ Application number: 88109772.9

⑮ Int. Cl. 4: C10L 3/00 , C07C 1/20

⑭ Date of filing: 20.06.88

⑬ Priority: 19.06.87 JP 153030/87

⑭ Date of publication of application:  
21.12.88 Bulletin 88/51

⑮ Designated Contracting States:  
DE FR GB

⑯ Date of deferred publication of the search report:  
12.07.89 Bulletin 89/28

⑰ Applicant: SAIBU GAS CO.,LTD.  
13-20, Kego 2-chome Chuo-ku  
Fukuoka-shi Fukuoka-ken(JP)

Applicant: MITSUBISHI PETROCHEMICAL  
ENGINEERING CO., LTD.  
5-4, Nihonbashi Bakuro-cho 1-chome  
Chuo-ku Tokyo(JP)

⑰ Inventor: Kanamura, Toshihisa  
51-6, Sunny town Kashii Higashi-ku  
Fukuoka-shi Fukuoka-ken(JP)  
Inventor: Urano, Shoji  
26-15, Miyake 1-chome Minami-ku  
Fukuoka-shi Fukuoka-ken(JP)  
Inventor: Inoue, Masayuki  
10-25, Hakozaki 3-chome Higashi-ku  
Fukuoka-shi Fukuoka-ken(JP)  
Inventor: Nishino, Chikashi  
4098-21, Yatabe Hasaki-machi  
Kashima-gun Ibaraki-ken(JP)

⑰ Representative: Hansen, Bernd, Dr.rer.nat. et  
al  
Hoffmann, Eitle & Partner Patentanwälte  
Arabellastrasse 4 Postfach 81 04 20  
D-8000 München 81(DE)

⑯ Process for forming city gas with high heat value from methanol as a crude material.

EP 0 295 715 A3

⑰ A process for producing a city gas having a high caloric content wherein a methanol-water mixture is reacted in a one-step reaction to produce a methane-rich gas mixture containing methane, hydrogen, carbon monoxide, carbon dioxide and water. The water is separated from the methane-rich gas mixture and recycled as a water feed. The carbon dioxide is then removed from the methane-rich gas mixture and butane is added to the remaining methane-rich gas to produce a resultant city gas having a heat value of at least about 11,000 Kcal/Nm<sup>3</sup>. The total amount of heat required to heat

the reactants and sustain the process at steady state conditions is provided by heat that is recovered and recycled from the heat of reaction. A nickel catalyst is used to promote the one-step reaction.



EP 88 10 9772

## DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	EP-A-0 003 737 (METALLGESELLSCHAFT AG) * Claims 1,2; page 2, line 9 - page 7, line 8 *	1,2,4, 10,11, 12,20, 25,32- 35,49- 52	C 10 L 3/00 C 07 C 1/20
A	FR-A-2 219 218 (ENTREPRISE GENERALE DE CONSTRUCTION D'USINES MALLET) * Claims 1,5,7 *	1	

**The present search report has been drawn up for all claims**

Place of search	Date of completion of the search	Examiner
THE HAGUE	21-04-1989	DE HERDT O.C.E.
<b>CATEGORY OF CITED DOCUMENTS</b>		
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document		

EXPO FORM 1503 03.82 (P0401)