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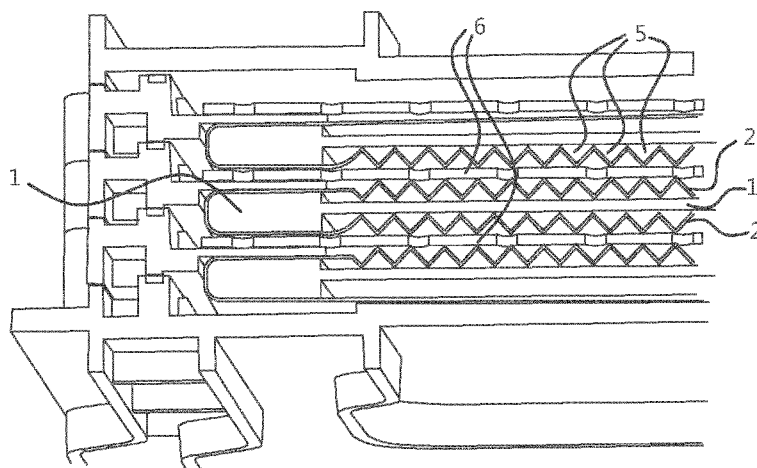
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(54) Title: CELL FOR FORMING AN ELECTROLYSER, ELECTROLYSER COMPRISING SUCH CELL, METHOD FOR MANUFACTURING AND OPERATING AN ELECTROLYSER

Fig. 2



(57) Abstract: Cell for forming an electrolyser comprising at least one diaphragm or membrane having a first side and a second side opposite the first side, a first cell plate, arranged on the first side of the diaphragm, provided with a first electrode, provided with an inlet channel for supplying or draining electrolyte to or from the electrode, provided with a first discharge channel for discharging oxygen from the electrode, at least one second cell plate, arranged on the second side of the diaphragm, provided with a second electrode and provided with a second discharge channel for discharging hydrogen from the electrode wherein the at least one first and second cell plate are made of a polymer material.





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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP H01 119688 A (JAPAN CARLIT CO LTD) 11 May 1989 (1989-05-11) abstract -----	1-14
A	JP H01 132789 A (JAPAN CARLIT CO LTD) 25 May 1989 (1989-05-25) abstract -----	1-14
A	JP S59 126782 A (KOGYO GIJUTSUIN; MITSUI SHIPBUILDING ENG) 21 July 1984 (1984-07-21) abstract; claim 1; figures 1-3 -----	1, 6
A	KR 2015 0046975 A (YOUNG TECH CO LTD [KR]) 4 May 2015 (2015-05-04) abstract; claims 1, 2, 4, 5 ----- --/--	1
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 1 406 087 A (UHDE GMBH FRIEDRICH) 10 September 1975 (1975-09-10) claims 1-13; figures 4-6 -----	2-10, 12-14
X	US 2022/029175 A1 (SEITZ RAINER [DE] ET AL) 27 January 2022 (2022-01-27) paragraphs [0001] - [0004] paragraphs [0038] - [0044]; figure 2 -----	1-14

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/EP2023/080787

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP H01119688 A	11-05-1989	JP H036995 B2 JP H01119688 A	31-01-1991 11-05-1989
JP H01132789 A	25-05-1989	JP H036231 B2 JP H01132789 A	29-01-1991 25-05-1989
JP S59126782 A	21-07-1984	JP S6151636 B2 JP S59126782 A	10-11-1986 21-07-1984
KR 20150046975 A	04-05-2015	NONE	
GB 1406087 A	10-09-1975	AU 4692772 A DE 2148337 A1 FR 2154690 A1 GB 1406087 A IT 967942 B JP S4875496 A NL 7213157 A	28-03-1974 05-04-1973 11-05-1973 10-09-1975 11-03-1974 11-10-1973 30-03-1973
US 2022029175 A1	27-01-2022	CN 113169349 A DE 102018220464 A1 JP 7197697 B2 JP 2022520516 A US 2022029175 A1 WO 2020109436 A1	23-07-2021 28-05-2020 27-12-2022 31-03-2022 27-01-2022 04-06-2020