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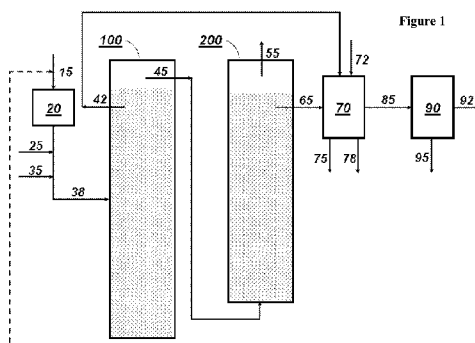
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(54) **Title:** REDUCTION OF CARBON DIOXIDE IN A FERMENTATION PROCESS



(57) **Abstract:** The embodiments disclosed herein present a system and a method of reducing carbon dioxide emitted by a carbon dioxide producing process, for example, by converting carbon dioxide to bicarbonate and/or to carbon monoxide and oxygen. One embodiment of the invention discloses a fermentation system, comprising a fermentation bioreactor; a carbon dioxide absorption chamber configured to receive gaseous products from said fermentation bioreactor, wherein said gaseous products contain carbon dioxide; and a separation system in fluid communication with said bioreactor and said absorption chamber. In some cases, the fermentation bioreactor is a deep shaft reactor. In some cases, the carbon dioxide absorption chamber is a deep shaft reactor. A further embodiment of the invention discloses a fermentation system, comprising a pressurizable fermentation bioreactor; and a separation system in fluid communication with said pressurizable fermentation bioreactor. In some cases, the pressurizable fermentation bioreactor is a deep shaft reactor.

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
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<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC B01D C01B C01D C02F C12P		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean Utility models and applications for Utility models since 1975 Japanese Utility models and applications for Utility models since 1975		
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<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US4354936A (ISHIDA, MASAHICO et al.) 19 October 1982 abstract, figure 1, column 2, lines 31-47 and column 3, lines 35-68, claim 1	1-4, 6-7, 9-10 5, 8, 11-28
A	KR100595792B1 (KIST) 23 June 2006 abstract, page 3, lines 32-42 and page 4, lines 10-27 and page 5, lines 27-39	1-28
A	US4722741A (HAYES, THOMAS D. et al.) 2 February 1988 See the whole document	1-28
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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Information on patent family members

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