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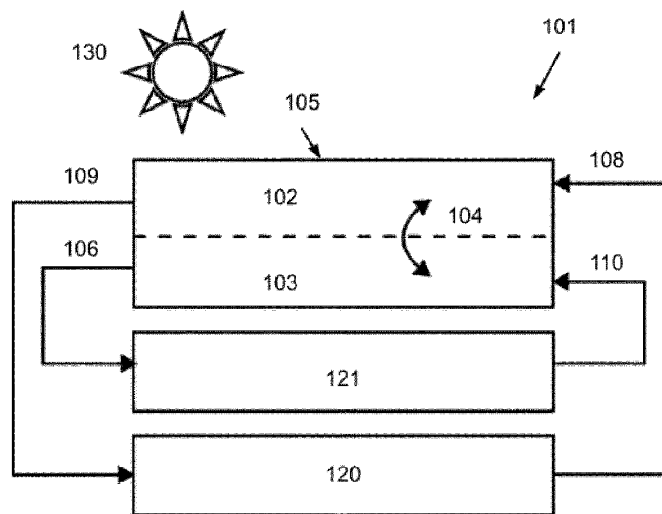
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(54) Title: BIOREACTOR SYSTEM AND METHODS

Figure 1a:



(57) Abstract: A bioreactor systems and processes for the production of biomass are provided. The systems comprise: at least one bioreactor unit which comprises at least one liquid-containable compartment. The liquid- containable compartment comprises, (i) a first wall, wherein the first wall comprises a composite membrane that is permissible to transfer of gases therethrough, wherein the composite membrane comprises at least one barrier layer and at least one reinforcement layer; and (ii) a second wall, wherein the second wall comprises material that is optically transmissible to visible light and that is substantially less gas permeable than the first wall, wherein the first and second walls cooperate to define the liquid-containable compartment within the bioreactor unit.

[Continued on next page]

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