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(54) Title: FLEXIBLE FERMENTATION PLATFORM FOR IMPROVED CONVERSION OF CARBON DIOXIDE INTO PRODUCTS

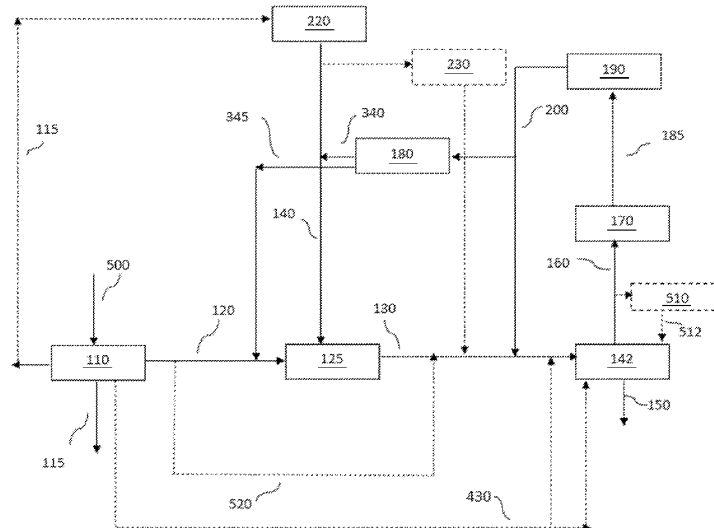


Fig. 1

(57) Abstract: An integrated process and system for the production of at least one gas fermentation product from a gaseous stream has been developed. The disclosure provides improved carbon utilization through both the recycle of a bioreactor tail gas via various different flow schemes and the employment of a CO₂ to CO conversion system such as a reverse water gas shift unit. Recycling of the bioreactor tail gas and employment of a CO₂ to CO conversion process provides for favourable H₂:CO molar ratios of the feed to the gas fermentation bioreactor(s) for enhanced production of fermentation products. Bypass embodiments provide for optimal sizing of the reverse water gas shift unit to minimize cost.

[Continued on next page]

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