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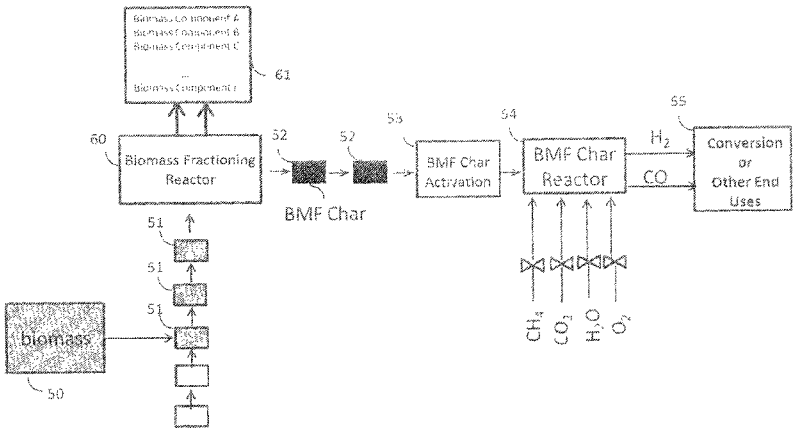


Fig. 1

(57) Abstract: Biomass is processed through a biomass fractioning system that creates, through the application of selective temperature ramps and pressure shocks, a series of useful volatile components and BMF char, wherein the BMP char is reacted sacriflcially with any one stream of methane, carbon dioxide, steam or oxygen to create highly pure synthesis gas with a controllable range of compositions. The resulting synthesis gas may be used in any desired manner, including conversion to oxygenates such as methanol and dimethyl ether, and to hydrocarbons.

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