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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

(54) **Title:** PROCESS AND APPARATUS FOR PRODUCING BIOETHANOL WITHOUT CO₂ EMISSIONS BY CONVERSION OF SYNGAS OBTAINED FROM THE THERMAL CONVERSION OF WASTE AT HIGH TEMPERATURE

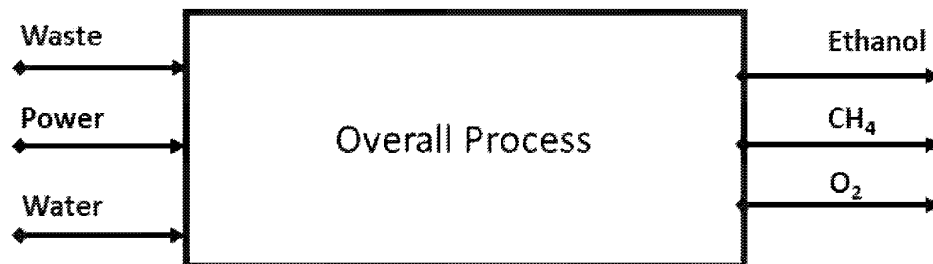


FIG. 1

(57) **Abstract:** The invention is a process and apparatus for producing bioethanol without CO₂ emissions by anaerobic fermentation of a synthesis gas, produced by the thermal conversion at high temperature of a feed consisting of municipal solid waste (MSW), agricultural waste or derivatives thereof such as refuse derived fuel (RFD) or even industrial waste such as non-recyclable plastic waste or a combination thereof, to which extra hydrogen is added through electrolysis so as to balance the H₂/CO ratio, thus maximizing the conversion of the organic components in the fermentation step so as to prevent any emission of CO₂ into the atmosphere.

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