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(54) **Title:** HEAT EXCHANGE REACTOR FOR CO<sub>2</sub> SHIFT

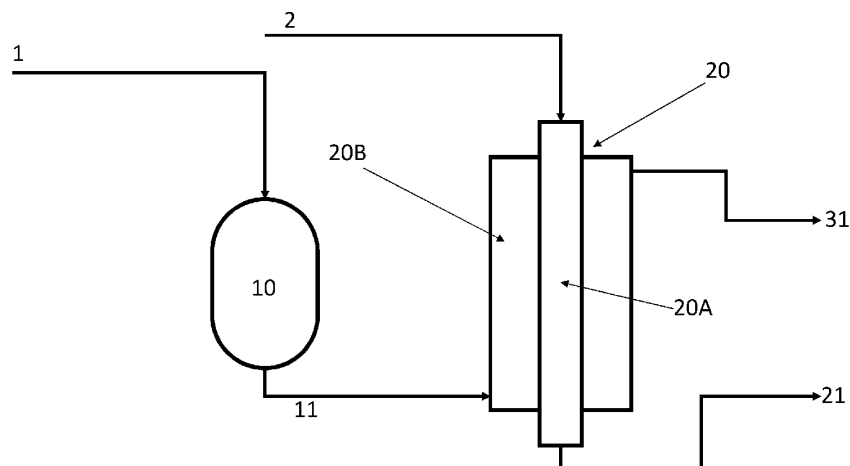


FIG. 1

(57) **Abstract:** A system and a process for CO<sub>2</sub> shift is provided. The system comprises a Reverse Water Gas Shift (RWGS) reactor, and a heat exchange reactor, HER. A first feed is converted in the RWGS reactor into a first product stream comprising CO. A second feed is arranged to be fed to a process side of the HER. At least a portion of the first product stream is arranged to be fed to a heating side of the HER such that heat from the first product stream is transferred to the process side of the HER, thereby allowing the conversion of the second feed to a second product stream comprising CO in the process side of the HER.

[Continued on next page]

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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
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