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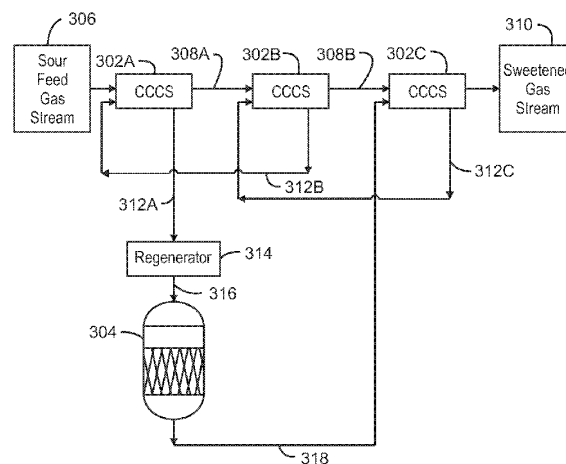
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(54) Title: CO-CURRENT GAS ABSORPTION METHOD AND SYSTEM WITH AN ENHANCED ABSORBENT



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FIG. 3

(57) Abstract: A gas processing system is described herein. The gas processing system includes a number of co-current contacting systems configured to contact a sour feed gas stream including an acid gas with a solvent stream to produce a partially-sweetened gas stream and a rich solvent stream including an absorbed acid gas. At least one of the co-current contacting systems is configured to send the rich solvent stream to a regenerator. The regenerator is configured to remove the absorbed acid gas from the rich solvent stream to produce a lean solvent stream. The gas processing system also includes a solvent treater configured to treat at least a portion of the lean solvent stream to produce an enhanced solvent stream, and a final co-current contacting system configured to contact the partially-sweetened gas stream with the enhanced solvent stream to produce a partially-loaded solvent stream and a final gas stream.

[Continued on next page]

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**Declarations under Rule 4.17:**

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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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