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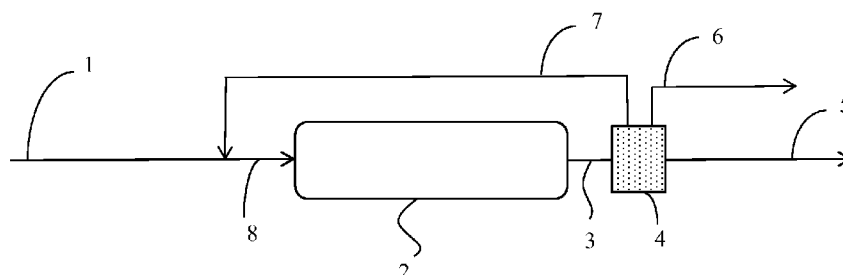
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(54) Title: FIXED BED HYDROVISBREAKING OF HEAVY HYDROCARBON OILS

Figure 1



(57) Abstract: The disclosure relates to processes for upgrading heavy hydrocarbon oils such as heavy crude oils, atmospheric residuum, vacuum residuum, heavy oils from catalytic treatment, heavy cycle oils from fluid catalytic cracking, thermal tars, as oils from visbreaking, oils from oil sands, bitumen, deasphalter rock, and heavy oils derived from coal. The process utilizes a utility fluid including recycled liquid hydroprocessed product containing a significant amount of single or multi-ring aromatics. Unlike conventional fixed bed resid hydroprocessing, the process can be operated at temperatures pressures and reactor conditions that favor the desired hydrocracking reactions over aromatics hydrogenation reduce the coking tendencies of heavy hydrocarbon oils.

