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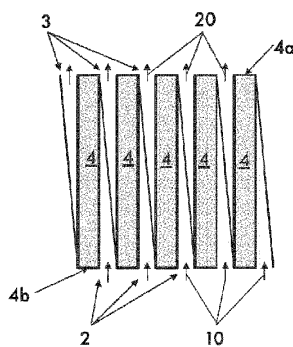


Fig. 1

(57) Abstract: The present invention provides a system (1) for capture of carbon dioxide (CO₂) from a gaseous CO₂-containing stream, the system at least comprising: - a plurality of first inlets (2) for a gaseous CO₂-containing stream (10); - a plurality of first outlets (3) for a treated stream (20) having a reduced CO₂-concentration compared to the gaseous CO₂-containing stream (10); - a plurality of supported sorbent materials (4) placed between the plurality of first inlets (2) and the plurality of first outlets (3) allowing a first flow path (A) therethrough for the gaseous CO₂-containing stream during a CO₂-adsorption phase, wherein each supported sorbent material (4) possesses a first side that during the CO₂-adsorption phase can receive the gaseous CO₂-containing stream (10) and a second side from which a treated gaseous stream (20) having a reduced CO₂-concentration can exit the supported sorbent material (4); - optionally, a second inlet (5) for a desorption fluid (30); a second outlet (6) for a CO₂-enriched stream; a sealer (7) which can close the plurality of first inlets (2) and the plurality of first outlets (3) during a CO₂-desorption phase thereby creating a second flow path (B) for a fluid comprising desorbed CO₂ through a plurality of adjacent supported sorbent materials (4) to the second outlet (6) from which a CO₂-enriched stream can exit.

WO 2023/222441 A1