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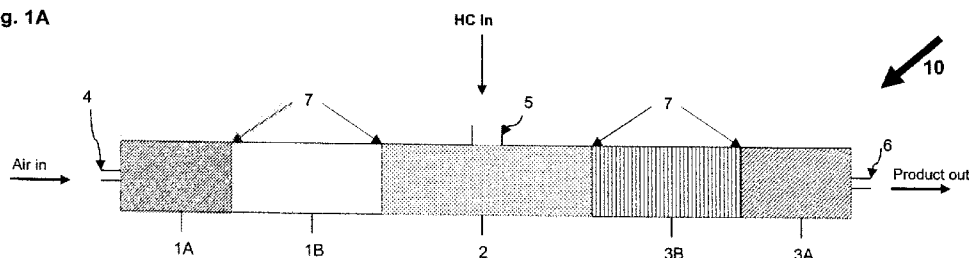
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(54) Title: ZONE REACTOR INCORPORATING REVERSIBLE HYDROGEN HALIDE CAPTURE AND RELEASE

Fig. 1A



(57) Abstract: An improved process and a zone reactor for converting a hydrocarbon feedstock into higher hydrocarbons is provided. A first zone in the reactor contains both a material capable of releasing hydrogen halide (HX) and a carbon-carbon coupling catalyst; a second zone is initially empty or contains a halogenation and/or oxyhalogenation catalyst; and a third zone contains both a carbon-carbon coupling catalyst and a material capable of capturing HX. Air or oxygen is introduced into the first zone, a feedstock is introduced into the second zone, and products are produced in the third zone. HX produced during the reaction is reversibly captured and released in zones 1 and 3.

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