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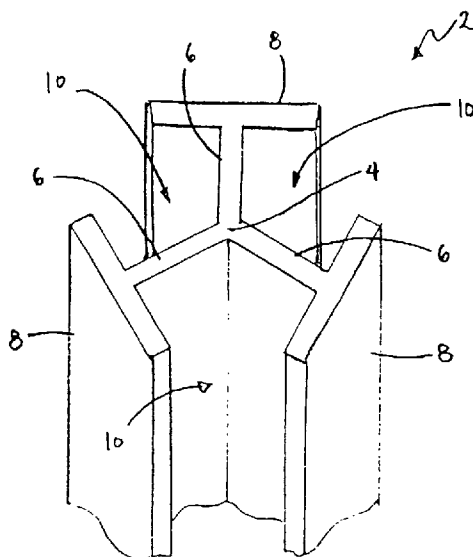
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(54) Title: DEVICES AND METHODS FOR CHEMICAL REACTIVE FILTRATION



(57) **Abstract:** A gas contaminant is filtered using fibers having internal cavities containing a chemically reactive oxidizing agent, an acid or base, a coordinating agent, a complexing agent, or a deliquescent agent. Where the contaminant is basic, the reagent is preferably an oxidizing agent. Where the contaminant is acidic, the reagent is preferably basic, and more preferably comprises a group 1 or group 2 metal cation. The reagent may also advantageously comprise a phosphate, chitosan, hypochlorite, borate, carbonate, hydroxide, or oxide. Where the contaminant is neutral, the reagent is preferably an oxidizing agent, complexing agent, coordinating agent, or deliquescent agent. The reagent is preferably impregnated into an adsorptive solid, including, for example, carbon powder, zeolite, aluminum oxide, or silica. The fibers are preferably multilobal, and most preferably either trilobal or quadrilobal. It is also preferred that the fibers contain a plurality of T shaped lobes.



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