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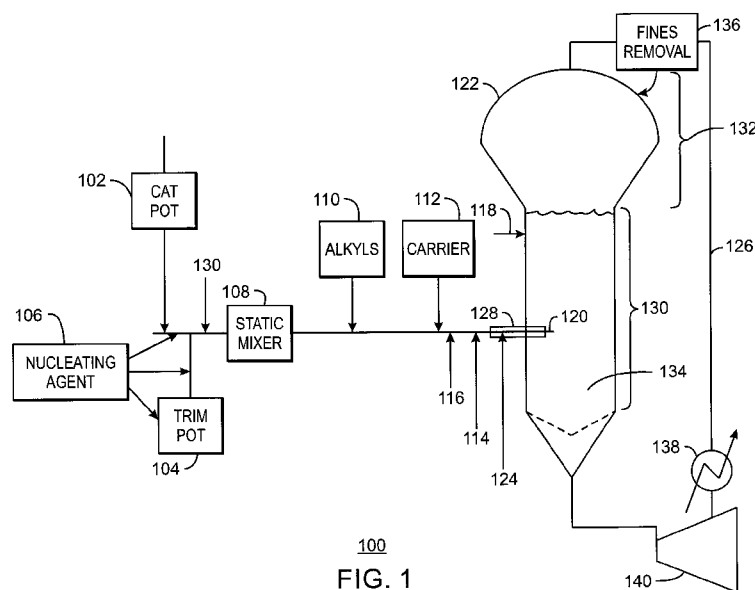
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[Continued on next page]

(54) Title: PRODUCING POLYETHYLENE PRODUCTS WITH IMPROVED STIFFNESS, TOUGHNESS, AND PROCESSABILITY



100  
FIG. 1

(57) Abstract: Polymers, and systems and methods for making and using the same are described herein. A polymer includes ethylene and at least one alpha olefin having from 4 to 20 carbon atoms. The polymer has a melt index ratio (MIR) greater than about 40. The polymer also has a value for Mw1/Mw2 of at least about 2.0, wherein Mw1/Mw2 is a ratio of a weight average molecular weight (Mw) for a first half of a temperature rising elution (TREF) curve from a cross-fractionation (CFC) analysis to an Mw for a second half of the TREF curve. The polymer also has a value for Tw1 - Tw2 of less than about -15 °C, wherein Tw1 - Tw2 is a difference of a weight average elution temperature (Tw) for the first half of the TREF curve to a Tw for the second half of the TREF curve.



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