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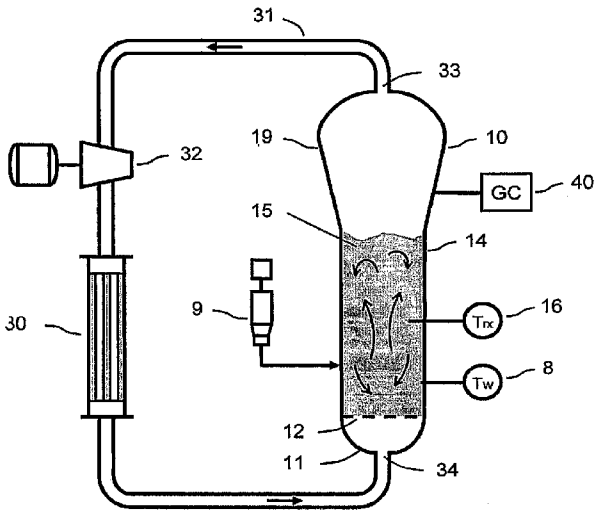
Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

[Continued on next page]

(54) **Title:** METHODS FOR DETERMINING TEMPERATURE VALUE INDICATIVE OF RESIN STICKINESS FROM DATA GENERATED BY POLYMERIZATION REACTION MONITORING



(57) **Abstract:** In some embodiments, a method including the steps of monitoring a polymerization reaction which produces a polymer resin in a fluid bed reactor, where a dry melt reference temperature is characteristic of melting behavior of a dry version of the resin, and in response to data indicative of at least one monitored parameter of the reaction, determining in on-line fashion a reduced melt reference temperature that is at least substantially equal to the difference between the dry melt reference temperature and a temperature by which the dry melt reference temperature is depressed by the presence of condensable diluent gas with the resin in the reactor. Optionally, the method also includes the step of controlling the reaction in response to the reduced melt reference temperature or a stickiness parameter determined from the reduced melt reference temperature.

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