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**Mahoney et al.**

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- [54] **APPARATUS FOR INJECTION MOLDING HIGH-VISCOSITY MATERIALS**
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- [52] **U.S. Cl.** ..... 425/145; 425/150; 425/572; 425/576
- [58] **Field of Search** ..... 425/145, 150, 557, 558, 425/572, 574, 575, 576

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[57] **ABSTRACT**

Apparatus for injection molding highly viscous materials in which incoming high-viscosity material flows through a supply conduit (24) and is divided into strands by splitter plates (58) as it flows into an evacuated chamber (52) and is degassed. When the chamber is full, the supply of high-viscosity material is interrupted and the chamber (52) is rotated to an injecting station while another chamber (54) swings to the degassing station for filling. At the injecting station, a piston (100) is lowered to engage the high-viscosity material in the first chamber (52), and a mold table is rotated to register a mold with a vacuum shroud (128') and the mold is lifted into the shroud. The piston (100) is further lowered in controlled increments to inject a quantity of high-viscosity material sufficient to fill a mold, then stop in place while the filled mold is removed and empty molds are sequentially inserted for filling. When the chamber has insufficient high-viscosity material remaining to fill another mold, the piston is retracted and the chamber (52) is rotated back to the degassing station while the filled chamber (54) swings to the injecting station for another cycle of loading additional molds. Flow passages for the high-viscosity material, which has a viscosity of at least about 8 kilopoise, have a minimum orifice diameter of at least about 0.5 inch. Flow stagnation and clogging of the high-viscosity material are avoided. Operations such as degassing and injecting can be separately controlled. High driving forces are avoided. Rapid, effective degassing, and enhanced production, are achieved.

**11 Claims, 8 Drawing Sheets**

