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(54) Title: **CROSSLINKABLE THERMOPLASTIC POLYURETHANE**

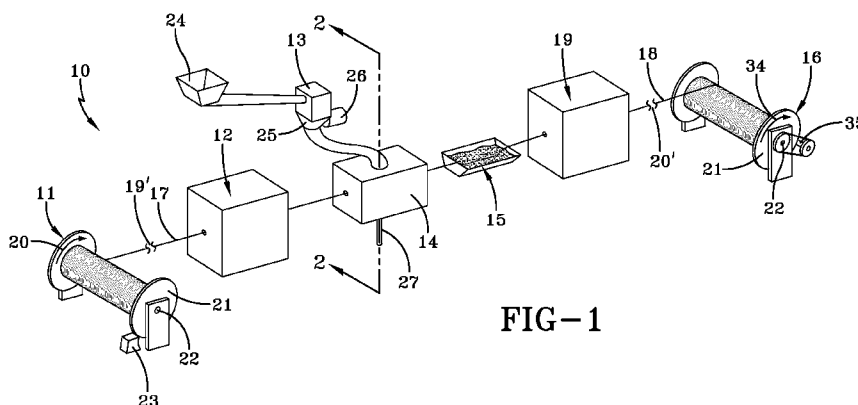


FIG-1

(57) Abstract: The TPU of this invention contains unsaturation in its polymeric backbone. The unsaturation can be present in the soft segment or in the hard segment or in both the soft and hard segments of the TPU. The TPU can be molded like a thermoplastic, and can be subsequently crosslinked. In one embodiment, the TPUs of this invention are the reaction product of (1) a hydroxyl terminated intermediate, (2) a polyisocyanate, (3) a saturated glycol chain extender, and (4) a glycol chain extender containing carbon-carbon double bonds. In another embodiment of this invention, the thermoplastic polyurethane which is crosslinkable by e-beam irradiation is comprised of the reaction product of (1) a saturated hydroxyl terminated intermediate, (2) an unsaturated hydroxyl terminated intermediate, wherein the unsaturated hydroxyl terminated intermediate contains carbon-carbon double bonds, (3) a polyisocyanate, and (4) a saturated glycol chain extender.