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(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ,

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(54) Title: A METHOD AND A DEVICE FOR PLASTICIZING AND TRANSPORTING POLYMER MATERIAL BASED ON ELONGATION RHEOLOGY

(54) 发明名称: 基于拉伸流变的高分子材料塑化输运方法及设备

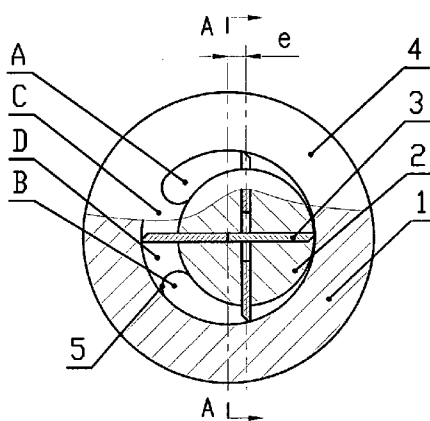


图 1/Fig.1

(57) Abstract: Disclosed herein are a method and a device for plasticizing and transporting polymer material based on elongation rheology. The device comprises one or more vane plasticizing and transporting units, which includes a stator (1) with cylindrical inner cavity, a rotator (2) arranged eccentrically in the inner cavity of the stator (1), several vanes (3) arranged in the direction of the diameter of the rotator (2) and uniformly distributed around the circumferential direction, and two stock-stopping pans (4, 5) arranged at both sides of the stator (1). A space having certain geometry is enclosed by the internal surface of the stator (1), the external surface of the rotator (2), two vanes (3) and two stock-stopping pans (4, 5). The volume of the space may change periodically from small to large, then from large to small in turn. The material is fed when volume of the space becomes large, and the material is compacted, plasticized and exhausted when volume of the space becomes small. The plasticization and transportation of material is accomplished mostly under the action of normal stress.

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根据细则4.17的声明:

— 发明人资格 (细则4.17(iv))

本国际公布:

— 包括国际检索报告。

(57) 摘要:

本发明涉及一种基于拉伸流变的高分子材料塑化输运方法及设备。通过一组具有确定几何形状的空间, 它们的容积可以依次由小到大再由大到小周期性变化, 容积变大时纳入物料, 容积变小时压实、塑化并排出物料, 实现正应力起主要作用的物料塑化输运。由具有圆柱内腔的定子、置于定子内腔中并与定子偏心的转子、布置在转子的直径方向并沿圆周方向均匀分布的若干叶片和布置在定子两侧的挡料盘组成叶片塑化输运单元。定子内表面、转子外表面、两叶片及两挡料盘围成上述具有确定几何形状的空间。叶片塑化输运单元可与各种螺杆挤压单元或各种柱塞注射单元组合成挤出机或注射机的叶片塑化注射装置, 具有物料热机械历程短、能耗低、适应性广以及体积小等特点。