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(54) Title: PRESSURE SWING ADSORPTION DEVICE AND ROTARY VALVE THEREOF

(54) 发明名称: 变压吸附装置及其旋转阀

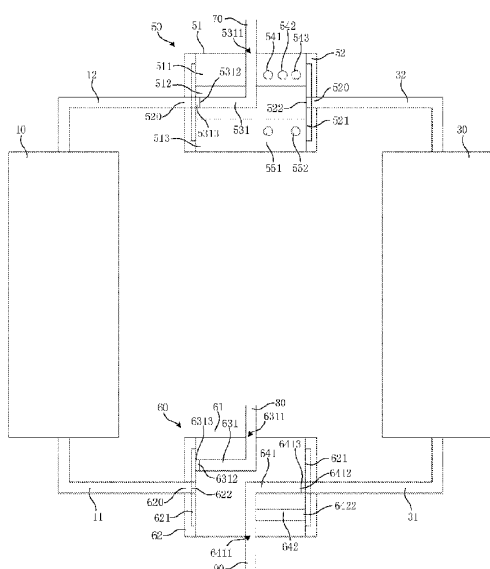


图 1

(57) Abstract: A rotary valve, a pressure swing adsorption device comprising same, and a method for recovering a component having weaker adsorbability from a gas mixture. The rotary valve comprises a valve body (51), wherein a first set of flow channels, a second set of flow channels and a third set of flow channels are arranged in the valve body (51), and ports of the first set of flow channels, the second set of flow channels and the third set of flow channels are provided in a surface of the valve body (51); and a valve sleeve (52) coaxially sleeved outside the valve body (51) in a sealing manner, wherein a plurality of through holes (520) are evenly provided in the valve sleeve (52), a vertical groove (521) extending vertically along an inner wall of the valve sleeve (52) is provided in an inner end of each through hole (520), each vertical groove (521) is divided into three sections in a vertical direction to be in communication with the ports of the first set of flow channels, the second set of flow channels and the third set of flow channels respectively, the first set of flow channels is in a working state, a switching valve (522) is arranged at each through hole (520), and the switching valves (522) are used for switching one of the second set of flow channels and the third set of flow channels into a working state. According to the structure, on-line switching of different time sequence processes can be achieved, so as to solve the integration problem of the device and improve the production flexibility and efficiency.

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BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。

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本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 一种旋转阀和包括其的变压吸附装置及从气体混合物回收吸附性较弱的组分的方法。旋转阀包括阀体(51), 阀体(51)内设有第一组流道、第二组流道和第三组流道, 第一组流道、第二组流道和第三组流道的端口设置在阀体(51)的表面; 以及阀套(52), 被同轴地密封套地设在阀体(51)外, 阀套(52)均匀开设多个通孔(520), 每个通孔(520)的内端设置有沿阀套(52)的内壁上下延伸的竖直槽(521), 竖直槽(521)沿竖直方向分为三段分别连通第一组流道、第二组流道和第三组流道的端口, 第一组流道处于工作状态, 通孔(520)处设有切换阀(522), 切换阀(522)将第二组流道和第三组流道中的一组切换为工作状态。该结构可以实现不同时序工艺的在线切换, 解决了装置的集成问题, 提升了生产灵活性和效率。