

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局

(43) 国际公布日
2015 年 11 月 19 日 (19.11.2015)



(10) 国际公布号
WO 2015/172552 A1

- (51) 国际专利分类号:
B29C 45/17 (2006.01) *B29C 43/32* (2006.01)
B29C 49/42 (2006.01) *F16H 1/22* (2006.01)
- (21) 国际申请号: PCT/CN2014/092956
- (22) 国际申请日: 2014 年 12 月 3 日 (03.12.2014)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
201410206689.3 2014 年 5 月 15 日 (15.05.2014) CN
- (71) 申请人: 华南理工大学 (SOUTH CHINA UNIVERSITY OF TECHNOLOGY) [CN/CN]; 中国广东省广州市天河区五山路 381 号, Guangdong 510640 (CN)。广州华新科实业有限公司 (GUANGZHOU HUAXINKE ENTERPRISE CO., LTD.) [CN/CN]; 中国广东省广州市萝岗区广州高新技术产业开发区科学城揽月路 80 号服务楼第 6 层 612 单元, Guangdong 510663 (CN)。

- (72) 发明人: 瞿金平 (QU, Jinping); 中国广东省广州市天河区五山路 381 号, Guangdong 510640 (CN)。张桂珍 (ZHANG, Guizhen); 中国广东省广州市天河区五山路 381 号, Guangdong 510640 (CN)。晋刚 (JIN, Gang); 中国广东省广州市天河区五山路 381 号, Guangdong 510640 (CN)。杨智韬 (YANG, Zhitao); 中国广东省广州市天河区五山路 381 号, Guangdong 510640 (CN)。
- (74) 代理人: 广州市华学知识产权代理有限公司 (GUANGZHOU HUAXUE INTELLECTUAL PROPERTY AGENCY CO., LTD.); 中国广东省广州市天河区五山路 381 号华南理工大学教学二区 8 号物资大楼首层, Guangdong 510640 (CN)。
- (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, BN, BR, BW, BY, BZ, CA, CH, CL, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ,

[见续页]

(54) Title: POWER TIME SEQUENCE CONVERSION METHOD AND DEVICE FOR MANUFACTURING PRODUCTS IN BATCHES

(54) 发明名称: 一种产品批次制造用的动力时序变换方法与装置

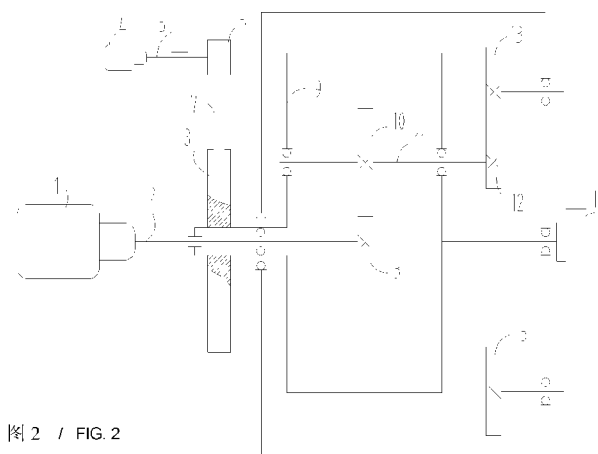


图 2 / FIG. 2

(57) Abstract: Disclosed are a power time sequence conversion method and device for manufacturing products in batches. A common power is sequentially coupled with power input ends of a plurality of execution mechanisms in different time periods, so as to provide in time order a plurality of power drives required during a batch manufacturing process of products, or provide power drives in different forms such as movements and forces to the same execution mechanism in a relaying manner in two adjacent time periods. A change gear capable of rotation and revolution is sequentially meshed with a plurality of tail end driving gears in different time periods, wherein the tail end driving gears are uniformly distributed in the circumferential direction and serve as power outputs, the revolution of the change gear is braked after each meshing to achieve the power drive of a certain execution mechanism in batch manufacturing of the products, and meanwhile, power drives in different forms such as movements and forces are provided to the same execution mechanism in a relaying manner through a torque converter. Compared with the conventional batch manufacturing of products where a plurality of independent power drives is required, the present invention has remarkable characteristics in low cost, low energy consumption, high reliability, good stability and the like.

(57) 摘要:

[见续页]



WO 2015/172552 A1



NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。

BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

- (84) **指定国** (除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT,

本国际公布:

- 包括国际检索报告(条约第 21 条(3))。

本发明公开一种产品批次制造用的动力时序变换方法与装置, 通过一个公共动力分时段依次与多个执行机构的动力输入端耦合, 实现按照时间顺序提供产品批次制造过程所需的多个动力驱动, 或者在两相邻时段向同一执行机构接力提供运动、力等不同形式的动力驱动。通过既能自转又能公转的变换齿轮与沿圆周方向均匀分布的若干个作为动力输出的末端驱动齿轮分时段依次啮合, 且在每次啮合后变换齿轮公转被制动, 实现产品批次制造某一执行机构的动力驱动, 同时通过变矩器为同一执行机构接力提供运动、力等不同形式的动力驱动。与传统的产品批次制造需要多个独立动力驱动相比, 具有成本低、能耗低、可靠性高、稳定性好等显著特点。