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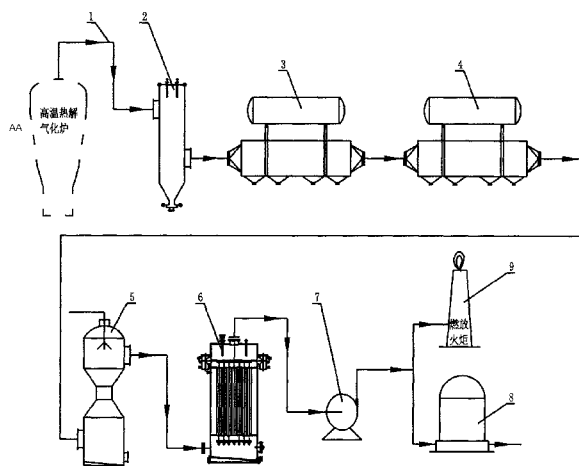
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(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP,

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(54) Title: BIOMASS SYNGAS PURIFICATION PROCESS UNDER NEGATIVE PRESSURE FOR PRODUCING OIL AND SYSTEM CONFIGURATION THEREOF

(54) 发明名称: 用于制油的生物质合成气负压净化工艺方法和系统配置



AA HIGH-TEMPERATURE PYROLYSIS GASIFIER
9 LIGHTING THE TORCH

图 1 / Fig. 1

(57) Abstract: Provided is a biomass syngas purification process under negative pressure for producing oil and the system thereof. In the process, a high temperature syngas extracted from a gasifier enters a water-cooled chilling tower via a water-cooled flue, and the gas is partly chilled to solidify slag by spraying water; the waste heat is recovered by a waste heat boiler of a water-tube type and a waste heat boiler of a heat-tube type in two stages with double pressure; the by-products, middle pressure steam and low pressure steam, are ejected externally; after the heavy tar is condensed and recovered by the waste heat boiler of the heat-tube type, scrubbing and dust extraction by a Venturi scrubber without padding, deep dust extraction by a wet electrostatic precipitator, and purification by removing tar fog are performed; then the resulting product is extracted by a gas fan and sent to a wet gas-holder for storage or supplied for use down-stream. The purification aims of cooling of the syngas in stages, gradient recycling use of waste heat, dust extraction in steps and tar removal are achieved and the technical problems of a complex system, long flow, high energy consumption, low efficiency, and poor stability and economy are resolved by optimizing the process and controlling the appropriate process parameters.

(57) 摘要:

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本国际公布:

— 包括国际检索报告(条约第 21 条(3))。

提供了一种用于制油的生物质合成气负压净化工艺方法和系统。该工艺方法将自气化炉引出的高温合成气, 经高温水冷烟道, 进入水冷式激冷塔加喷水部分激冷凝渣, 水管式余热炉和热管式余热炉两段、双压余热回收, 副产中压、低压蒸汽对外供出, 热管式余热炉凝结回收重质焦油后, 进行无填料文丘里洗涤塔洗气除尘, 湿式电除尘器深度除尘、除焦油雾净化, 然后经煤气风机抽出, 送入湿式气柜储存或供下游工段使用。通过优化工艺, 控制适当的工艺参数, 实现了合成气的分段冷却, 余热梯级回用, 逐级除尘、除焦油的净化目标, 解决了系统复杂、流程长、能耗高、效率低、稳定性和经济性差的技术问题。