

(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
2021 年 5 月 27 日 (27.05.2021)



(10) 国际公布号
WO 2021/098285 A1

(51) 国际专利分类号:
E02D 9/00 (2006.01)

(ZHANG, Qiming); 中国上海市杨浦区河间路
2号7号楼, Shanghai 200090 (CN)。

(21) 国际申请号: PCT/CN2020/107257

(22) 国际申请日: 2020 年 8 月 6 日 (06.08.2020)

(25) 申请语言: 中文

(26) 公布语言: 中文

(30) 优先权:
201911130367.4 2019年11月19日 (19.11.2019) CN

(71) 申请人: 上海建工二建集团有限公司 (SHANGHAI CONSTRUCTION ENGINEERING
SECOND CONSTRUCTION GROUP CO., LTD) [CN/
CN]; 中国上海市中国 (上海) 自由贸易
试验区福山路 33 号 5 楼 D 座李惠蓉,
Shanghai 200120 (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, 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,
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。

(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, 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,

(72) 发明人: 陈荣 (CHEN, Rong); 中国上海市杨浦区
河间路 2 号 7 号楼, Shanghai 200090 (CN)。 赵
文凯 (ZHAO, Wenkai); 中国上海市杨浦区河间
路 2 号 7 号楼, Shanghai 200090 (CN)。 张启铭

(54) Title: METHOD AND APPARATUS FOR SEGMENTED OBSTACLE REMOVAL OF EXISTING IN-SITU TUBE WELL

(54) 发明名称: 一种既有原位管井分段清障方法及装置

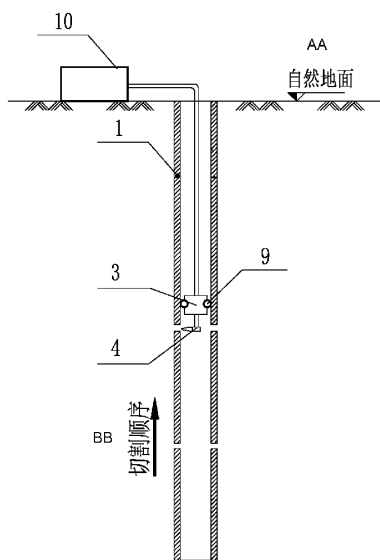


图 1

AA NATURAL GROUND
BB CUTTING SEQUENCE

(57) Abstract: The present invention relates to the field of underground obstacle removal, and provides a method and apparatus for segmented obstacle removal of an existing in-situ tube well. The apparatus can move up and down along with a flexible high-pressure pipe in an in-situ tube well by using a housing, a water jet cutter bit, a motor drive device, a rotary disc, a rotating pipeline and a connection device, and therefore the water jet cutter bit can move to positions different in depth in the in-situ tube well, and after a booster pump is opened and water in a water storage tank is boosted by the booster pump, water sequentially passes through the flexible high-pressure pipe, the connection device and the rotating pipeline, and then is jetted out by means of the water jet cutter bit so as to implement high-pressure water cutting on the in-situ tube well, and therefore the in-situ tube well can be cut into pieces, parts of a tube segment can be dug out by using the device, and obstacle removal for the in-situ tube well is realized, and furthermore use of corresponding devices of a large vibration pile driver extractor, a full rotary drill and the like is avoided, and therefore the apparatus reduces influence to environment, is convenient, quick and safe to operate, and solves the problems that large influence is caused to the surrounding environment, high production cost is consumed and the like in the underground obstacle removal process.

WO 2021/098285 A1

[见续页]

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)。

本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本发明属于地下清障领域, 本发明公开了一种既有原位管井分段清障方法及装置, 其通过采用壳体、水刀刀头、电机传动装置、转动盘、旋转管道、以及连接装置能够跟随所述柔性高压管在原位管井内上下移动, 因此, 水刀刀头可以移动到原位管井的不同深度位置, 打开增压泵, 储水罐中的水经增压泵增压后, 依次经柔性高压管、连接装置、旋转管道后经水刀刀头喷射而出, 对原位管井实施高压水切割, 从而能够原位管井切割成一根根可以用机器挖出的局部管段, 实现原位管井的清障, 其可以避免使用大型振动沉拔桩机和全回转钻机等相应设备, 减少了对环境的影响, 操作方便、快捷、安全, 解决了清除地下障碍物过程产生较大周边环境影响及较大生产费用等难题。