

Title (en)  
AUTO-INDEXING LANCE POSITIONER APPARATUS AND SYSTEM

Title (de)  
VORRICHTUNG UND SYSTEM ZUR AUTOMATISCHEN INDEXIERUNG EINES LANZENPOSITIONIERERS

Title (fr)  
SYSTÈME ET APPAREIL DE POSITIONNEMENT DE LANCES À INDEXAGE AUTOMATIQUE

Publication  
**EP 4031297 A4 20230531 (EN)**

Application  
**EP 20879660 A 20201020**

Priority  

- US 201916662762 A 20191024
- US 202017004934 A 20200827
- US 2020056519 W 20201020

Abstract (en)  
[origin: WO2021080996A1] A system and an apparatus for positioning a plurality of flexible cleaning lances through tubes penetrating a tube sheet of a heat exchanger tube sheet, includes a smart lance tractor drive, a controller, and a tumble box connected to the controller operable to generate and/or distribute electrical power to the AC induction sensor from an air pressure source, supply electrical power to the controller and distribute pneumatic power to pneumatic motors for positioning the tractor drive on the positioner frame. The smart tractor drive includes sensors for detection of mismatch between expected and actual lance positions, sense lance insertion distance and lance removal and provide automated drive reversal operation to remove blockages within tubes being cleaned.

IPC 8 full level  
**B08B 9/043** (2006.01); **B08B 9/032** (2006.01)

CPC (source: EP)  
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Citation (search report)  

- [A] US 9896299 B2 20180220 - BARNES JEFFERY R [US]
- [A] US 2018281030 A1 20181004 - EISERMANN REINHARD [DE], et al
- [A] US 2018292151 A1 20181011 - MATHIS TODD [US]
- [A] US 2015034128 A1 20150205 - BRUMFIELD MICHAEL KENNETH [US]
- See references of WO 2021080996A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
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DOCDB simple family (application)  
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