

Title (en)
ROBOT-SUPPORTED FLEXIBLE-ARM BORING MACHINE CAPABLE OF EXCAVATING TUNNEL WITH ARBITRARY CROSS SECTION

Title (de)
ROBOTERUNTERSTÜTZTE BIEGEARMBOHRMASCHINE ZUM AUSHEBEN EINES TUNNELS MIT BELIEBIGEM QUERSCHNITT

Title (fr)
MACHINE DE FORAGE À BRAS FLEXIBLE SUPPORTÉE PAR UN ROBOT POUVANT EXCAVER UN TUNNEL AVEC UNE SECTION TRANSVERSALE ARBITRAIRE

Publication
EP 3872299 A4 20220105 (EN)

Application
EP 19875605 A 20190610

Priority
• CN 201811259349 A 20181026
• CN 2019090461 W 20190610

Abstract (en)
[origin: EP3872299A1] Disclosed is a robot (4)-supported flexible-arm boring machine capable of excavating a tunnel with any cross-section, comprising a cutterhead and cutter system (1) and a main beam (6). A rear portion of the main beam (6) is connected to a front portion of a rear gripper (8) by means of a thrust cylinder (7); a rear portion of the rear gripper (8) is connected to a rear support (9); and a front portion of the main beam (6) is flexibly connected to the cutterhead and cutter system (1) by means of a robot (4).

IPC 8 full level
E21D 9/087 (2006.01); **E21D 9/08** (2006.01); **E21D 9/093** (2006.01); **E21D 9/11** (2006.01)

CPC (source: CN EP)
E21D 9/087 (2013.01 - EP); **E21D 9/0874** (2016.01 - EP); **E21D 9/0875** (2016.01 - CN); **E21D 9/093** (2016.01 - EP); **E21D 9/11** (2013.01 - EP); **E21D 9/117** (2013.01 - EP)

Citation (search report)
• [X] US 5890771 A 19990406 - CASS DAVID T [US]
• [X] US 5915790 A 19990629 - SAKAI TAKASHI [JP], et al
• [X] JP H06173575 A 19940621 - SENTAN KENSETSU GIJUTSU CENTER, et al
• See also references of WO 2020082746A1

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3872299 A1 20210901; **EP 3872299 A4 20220105**; **EP 3872299 B1 20231025**; CN 109209413 A 20190115; CN 109209413 B 20240409; WO 2020082746 A1 20200430

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