

Title (en)
DRILL HEAD FOR ELECTRO-PULSE-BORING

Title (de)
BOHRKOPF FÜR ELEKTROPULSBOHREN

Title (fr)
TÊTE DE FORAGE POUR PERÇAGE PAR ÉLECTRO-IMPULSION

Publication
EP 3739163 A1 20201118 (EN)

Application
EP 19175222 A 20190517

Priority
EP 19175222 A 20190517

Abstract (en)
The invention relates to a drill head (1) for electro-pulse-boring. The drill head comprises a high-voltage pulse generator enclosed in a hermetically sealed container (10) and a drill bit (20) mechanically coupled to the container. The drill bit (20) comprises an electrode assembly (40) being electrically coupled to the high-voltage pulse generator. The drill head comprises a supply pipe (31) for supplying drill liquid to the drill bit such that when in operation a borehole bottom portion is filled with drill liquid so as to immerse the drill bit with drill liquid. The drill head is characterized in that it comprises an circumferential seal (50) for separating drill liquid in the borehole bottom portion from a stabilisation liquid (80) that is filling up the borehole up to a surface. At least a portion of the circumferential seal is surrounding a circumferential wall (11) of the container. The drill head further comprises one or more return pipes (32a, 32b) for evacuation of excavated matter mixed with drill liquid from the borehole bottom portion, and wherein the one or more return pipes are mechanically coupled to the container.

IPC 8 full level
E21B 7/14 (2006.01); **E21B 7/15** (2006.01); **E21B 10/00** (2006.01)

CPC (source: EP)
E21B 7/14 (2013.01); **E21B 7/15** (2013.01); **E21B 10/00** (2013.01)

Citation (applicant)
• US 164388 A 18750615
• EP 1711679 A1 20061018 - UNODRILL AS [NO]
• RU 2477370 C1 20130310 - FEDERAL NOE G BJUDZHETNOE OBRAZOVATEL NOE UCHREZHDENIE VYSSHEGO PROFESSIONAL NOGO OBRAZOVANIJA NATSI [RU]

Citation (search report)
• [Y] US 2018313158 A1 20181101 - GILBRECH JOSHUA A [US]
• [Y] US 2018163478 A1 20180614 - DIRKSEN RON [US], et al
• [A] US 2016017663 A1 20160121 - MOENY WILLIAM M [US]

Cited by
WO202327751A1; WO2023086844A1; WO2023086845A1; WO2023086846A1

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 3739163 A1 20201118; EP 3739163 B1 20210630; CN 114174630 A 20220311; WO 2020234202 A1 20201126

DOCDB simple family (application)
EP 19175222 A 20190517; CN 202080036556 A 20200516; EP 2020063742 W 20200516