

Title (en)
METHOD AND APPARATUS FOR DOWN-THE-HOLE DRILLING

Title (de)
VERFAHREN UND VORRICHTUNG FÜR BOHREN IM BOHRLOCH

Title (fr)
PROCÉDÉ ET APPAREIL DE FORAGE EN FOND DE TROU

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Application
EP 09832986 A 20091013

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Abstract (en)
[origin: WO2010070190A1] The invention relates to a method for down-the-hole drilling, the drilling being carried out by an apparatus, having a drilling device (1) that comprises a casing part (2) and at least during a drilling situation an essentially inside thereof existing drilling unit (3), at the drilling head of which there are at least first drilling means (4) for drilling a center hole, second drilling means (5) for reaming the center hole for the casing part (2) and a pneumatic flushing flow arrangement (6) for leading of drilling waste by influence of pressurized air at least partly upward, whereby the first drilling means (4) are coupled with the second drilling means (5) first of all power-transmittedly in order to carry out cooperation thereof at least during a drilling situation with the second drilling means (5) for a rotational motion (w4), a feeding motion (z4) and/or a hammering motion (t4), and on the other hand removably in order to enable removal thereof from the hole. Furthermore the casing part (2) is arranged to be drawn into a hole to be drilled by the drilling unit (3). Particularly direct aiming of a flushing air flow (HV) at the soil is being prevented by directing the flushing air at an end of the drilling unit (3) into a counterpart surface arrangement (X) on the drilling surface (P1 and/or P2) existing of the first and/or second drilling means in order to decrease kinetic energy of the flushing air flow (HV) by changing its flow direction on the drilling surface prior to drifting thereof into the ground. The invention relates also to an apparatus applying the method.

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Citation (search report)
• [X] WO 9615351 A1 19960523 - ILOMAEKI VALTO [FI]
• [X] WO 2006131339 A1 20061214 - GEOMECHANIK WASSER UND UMWELTT [DE], et al
• [X] FI 98650 B 19970415 - ILOMAEKI VALTO [FI]
• [I] FR 2889556 A1 20070209 - ARSONNET GERARD [FR]
• See references of WO 2010070190A1

Cited by
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