

Title (en)  
DOWNHOLE TOOL WITH DIRECTIONAL NOZZLE AND A DRILL STRING THEREOF

Title (de)  
BOHRLOCHWERKZEUG MIT RICHTUNGSDÜSE UND BOHRSTRANG DAFÜR

Title (fr)  
OUTIL DE FOND DE TROU AVEC EMBOUT DIRECTIONNEL ET SON TRAIN DE TIGES DE FORAGE

Publication  
**EP 3475520 A4 20200311 (EN)**

Application  
**EP 17814791 A 20170622**

Priority  
• DK PA201670452 A 20160622  
• DK 2017050206 W 20170622

Abstract (en)  
[origin: WO2017220098A1] A downhole tool and a drill string (18") comprising such a downhole tool is disclosed. The downhole tool comprises a housing having a first end and a second end, wherein a first fluid conduit (5) extends from an opening in the first end to an opening in the second end. A second (8") and a third fluid conduit is further arranged in the housing, wherein the second (8) and third fluid conduits extend from an inner opening connected to the first fluid conduit (5) to an outer opening arranged in the outer side surface of the housing. The second and third fluid conduits (8, 24) are placed in acute angles relative to a longitudinal direction of the downhole tool. The second fluid conduit (8) is orientated so that it faces towards the first end. The third fluid conduit (24) is orientated so that it faces towards the first or second end. This provides an improved cleaning effect and transport effect without generating a Vortex around the outer opening of the second and third fluid conduits (8, 24).

IPC 8 full level  
**E21B 21/10** (2006.01); **E21B 37/04** (2006.01); **E21B 41/00** (2006.01)

CPC (source: EP US)  
**E21B 21/103** (2013.01 - EP US); **E21B 34/066** (2013.01 - US); **E21B 34/16** (2013.01 - US); **E21B 37/00** (2013.01 - US);  
**E21B 37/04** (2013.01 - EP); **E21B 41/0078** (2013.01 - EP US)

Citation (search report)  
• [A] US 2010252281 A1 20101007 - TELFER GEORGE [GB]  
• [AD] US 4479558 A 19841030 - GILL ELBERT R [US], et al  
• [A] WO 2012037645 A1 20120329 - PACKERS PLUS ENERGY SERV INC [CA], et al  
• See references of WO 2017220098A1

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)  
**WO 2017220098 A1 20171228**; EP 3475520 A1 20190501; EP 3475520 A4 20200311; EP 3475520 B1 20210804; US 2020308919 A1 20201001

DOCDB simple family (application)  
**DK 2017050206 W 20170622**; EP 17814791 A 20170622; US 201716311779 A 20170622