

Title (en)
Tunnel reinforcement tubular device of non-polluting material

Title (de)
Rohrförmige Vorrichtung zur Tunnelverstärkung aus nichtverschmutzendem Material

Title (fr)
Dispositif tubulaire de renfort de tunnels en matériau non-polluant

Publication
EP 2199542 A1 20100623 (EN)

Application
EP 09425508 A 20091214

Priority
IT RM20080682 A 20081219

Abstract (en)
The invention concerns a tubular device made of fiberglass-reinforced plastic provided with internal longitudinal channels used both for inserting the hardenable fluid (cement mortar, grout or other) under pressure and for the exit of the same at the end of the reinforcement hole filling operation (8).

IPC 8 full level
E21D 20/02 (2006.01); **E21D 21/00** (2006.01)

CPC (source: EP)
E21D 20/02 (2013.01); **E21D 21/0033** (2013.01)

Citation (search report)
• [X] DE 29900432 U1 19990422 - SCHRAN BERGBAU BAUMASCHINEN BO [DE]
• [XP] EP 2065559 A2 20090603 - HILTI AG [LI]
• [A] EP 1939394 A2 20080702 - MINOVA INT LTD [GB]
• [A] US 2002034424 A1 20020321 - LUDWIG WOLFGANG [DE], et al

Designated contracting state (EPC)
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 SE SI SK SM TR

Designated extension state (EPC)
AL BA RS

DOCDB simple family (publication)
EP 2199542 A1 20100623; IT 1392355 B1 20120228; IT RM20080682 A1 20100620

DOCDB simple family (application)
EP 09425508 A 20091214; IT RM20080682 A 20081219