Title (en)
GROUND REINFORCING METHOD

Title (de)
VERFAHREN ZUR BEWEHRUNG EINER BODENSCHICHT

Title (fr)
PROCEDE DE RENFORCEMENT DES SOLS

Publication
EP 1223306 B1 20050727 (EN)

Application
EP 99944870 A 19990928

Priority
JP 9905293 W 19990928

Abstract (en)
[origin: EP1223306A1] A natural ground reinforcing construction method applied in excavation of for example a tunnel or cavern, characterized in that a ring bit (20) having a drilling function is provided at a tip end of a pipe (11) made of fiber reinforced resin, a drill rod (22) having a base end portion mounted to a rock drill (10) and having a drill bit (22a) mounted at its tip end is stored in the pipe, the bit is detachably mounted directly or indirectly to the pipe, drilling is performed into natural ground in a prescribed position at the outer periphery of the stall and/or the face in excavation of a tunnel or the like while sequentially supplying and connecting the pipes (11) and the drill rods (22), as the drill bit advances, the pipe engaged with the bit is drawn, propelled and placed into the natural ground to be laid as a reinforcing pipe in a prescribed position in the natural ground, upon or after placing the pipe, the drill rod is pulled out and retracted and then a solidifying material is injected into the surrounding natural ground through the pipe to reinforce the natural ground. In this way, the natural ground can be reinforced well without expanding the width of the tunnel cross section. <IMAGE>

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E21D 9/04; E21D 9/00; E21D 20/02; E21B 7/20

IPC 8 full level
E21B 7/20 (2006.01); **E21D 9/00** (2006.01); **E21D 9/04** (2006.01); **E21D 20/02** (2006.01)

CPC (source: EP)
E21B 7/20 (2013.01); **E21D 9/001** (2013.01); **E21D 9/04** (2013.01); **E21D 20/02** (2013.01)

Cited by
CN106194174A; CN106194175A; ITRM20130034A1; CN107842384A; CN112065463A; US9840913B1; WO2016183645A1; WO2019119901A1

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