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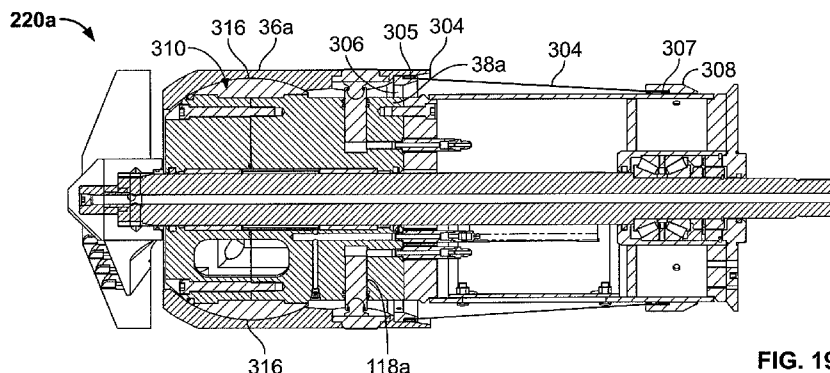
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(54) **Title:** TUNNELING APPARATUS



(57) **Abstract:** A tunneling apparatus includes a drill head and a steering shell. The drill head includes a main body having a distal end and an oppositely disposed proximal end. The steering shell is disposed at the distal end of the drill head and is moveable relative to the main body of the drill head. The drill head includes structure that assists in maintaining a precise line even in soft drilling conditions.

A. CLASSIFICATION OF SUBJECT MATTER*E21D 9/06(2006.01)i, E21D 9/08(2006.01)i, E21D 9/04(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E21D 9/06; E21B 7/00; E21B 17/20; E21B 4/16; E21B 7/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: tunneling, drill head, steering, pivotally, stabilization wings

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 2010-0230171 A1 (HARRISON STUART et al.) 16 September 2010 See paragraphs [0078],[0079], and figures 14,20.	50 1-49,51
Y A	US 05484029 A (EDDISON, ALAN M.) 16 January 1996 See column 4,lines 30-55, claim 1, and figure 2.	50 1-49,51
A	EP 1589187 B1 (CHUAN HOME MACHINERY CO., LTD.) 14 March 2007 See paragraph [0017], claims 1,8, and figure 4A.	1-51
A	US 06158529 A (DOREL, ALAIN P.) 12 December 2000 See column 11,lines 3-13, claims 10,16, and figures 3,4.	1-51
A	US 04818026 A (YAMAZAKI, TOSHIHIRO et al.) 04 April 1989 See abstract, claim 1, and figure 1.	1-51

 Further documents are listed in the continuation of Box C. See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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