

Title (en)
BORING RAM

Publication
EP 0301287 A3 19901122 (DE)

Application
EP 88110828 A 19880707

Priority
• DE 3724619 A 19870725
• DE 3735018 A 19871016

Abstract (en)
[origin: JPS6443694A] PURPOSE: To perform a given direction change through arbitrary regulation of a deviation of an impact tip and to prevent the occurrence of a deviation in a direction by a method wherein an impact tip is radially adjusted in a housing through two eccentric rings. CONSTITUTION: A ram boring machine 1 comprises an impact tip 4 formed as a stepped front head part 3 protruding from a housing 2, and a rod 5 supported through a spherical disc 13 by eccentric rings 11 and 12 rotatable in directions opposite to each other. When a deviation in a direction occurs to the tip 4, inflow of hydraulic fluid is effected by operating a pressure pipe system with a coupling joint for a feed coupled to the eccentric rings 11 and 12 through a hydraulic pipe system, the eccentric rings 11 and 12 are regulatable. Further, many pistons, preferably three regulation pistons, are rotatably disposed in a radial plane at the periphery of the nod 5.

IPC 1-7
E21B 7/06; E21B 7/26; E21B 4/14

IPC 8 full level
E21B 1/38 (2006.01); **E21B 4/14** (2006.01); **E21B 7/06** (2006.01); **E21B 7/26** (2006.01)

CPC (source: EP US)
E21B 4/145 (2013.01 - EP US); **E21B 7/068** (2013.01 - EP US)

Citation (search report)
• [X] GB 1303547 A 19730117
• [X] BE 865954 A 19780731 - FORAKY
• [X] BE 865955 A 19780731 - FORAKY
• [Y] US 4655299 A 19870407 - SCHOEFFLER WILLIAM N [US]
• [A] US 4319649 A 19820316 - JETER JOHN D
• [A] DE 1175161 B 19640730 - WIKTOR ZINKIEWICZ
• [A] US 4635736 A 19870113 - SHIRLEY KIRK R [US]

Cited by
EP0462821A3; DE19859367C2; EP0657006A4; EP0955443A1; US6352128B1; EP2474703A1; WO2012095625A1; US9546519B2

Designated contracting state (EPC)
BE CH FR GB IT LI NL

DOCDB simple family (publication)
EP 0301287 A2 19890201; **EP 0301287 A3 19901122**; **EP 0301287 B1 19940119**; DE 3735018 A1 19890427; DE 3735018 C2 19950216; EP 0558097 A1 19930901; EP 0558097 B1 19960605; JP 2871697 B2 19990317; JP S6443694 A 19890215; US 4938297 A 19900703

DOCDB simple family (application)
EP 88110828 A 19880707; DE 3735018 A 19871016; EP 93106712 A 19880707; JP 16864288 A 19880706; US 22328788 A 19880722