

Title (en)  
Nozzle means for rotary drill bits.

Title (de)  
Düse für Drehbohrmeissel.

Title (fr)  
Duse pour tréfans de forage rotatifs.

Publication  
**EP 0452584 A1 19911023 (EN)**

Application  
**EP 90308487 A 19900801**

Priority  
US 50204690 A 19900330

Abstract (en)  
A rotary drill bit (10) has fluid discharge nozzles (36A, 36B, 36C) positioned between adjacent pairs of roller cutters (20A, 20B, 20C). A fluid discharge nozzle (36A) provides a stream of drilling fluid (44) toward an adjacent roller cutter (20A) inclined radially outwardly toward the side wall (34) of the bore hole (30) and slanted toward the roller cutter (20A) for first striking the side wall (34), and then sweeping inwardly across the bore hole bottom (32) in a flat high velocity stream tangential to bit rotation and beneath the cutting elements (26) during cutting engagement of the gage row (28D) with the formation. <IMAGE>

IPC 1-7  
**E21B 10/18**

IPC 8 full level  
**E21B 10/18** (2006.01)

CPC (source: EP)  
**E21B 10/18** (2013.01)

Citation (search report)  
• [YD] US 4741406 A 19880503 - DEANE JOHN D [US], et al  
• [Y] US 4369849 A 19830125 - PARRISH JOHN D  
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• [AP] WO 9005830 A1 19900531 - MINI GAZOVOI PROMY SSSR [SU]

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GB2315509A; GB2315509B; US6142247A; US9033066B2; US6290006B1; WO0019055A1

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