

Title (en)  
Drill hammer

Title (de)  
Bohrhammer

Title (fr)  
Marteau à forage

Publication  
**EP 0658681 B1 20000322 (DE)**

Application  
**EP 94119216 A 19941206**

Priority  
DE 9319223 U 19931215

Abstract (en)  
[origin: EP0658681A2] In the bottom part, a pneumatic deep-hole hammer (10) has an outer tube (55), a control-housing shell (60) together with non-return valve (59), and a central tube (80) which has radial passages (81, 83) and on which a percussion piston (75) slides. The head of an axially displaceable drill bit (90) can be slipped onto the bottom end (84) of the central tube. A cylinder liner (70) guiding the piston (75) and the control-housing shell (60) are circumferentially welded to the outer tube (55) over an axial area (welding zone S, length l). Sitting above them is an adapter (40) which has top air passages (42), carries a blast ring (50) with nozzles (53) directed upwards, and is connected in a drive-transmitting manner to a sleeve (15) either directly or via a sliding piece (30) with guided shaft (20), which sleeve (15) sits under the connection cap (11). The bottom end (23) of the shaft (20) forms a control slide relative to the adapter top part (41), from which passages (42, 47) lead to a control-housing chamber (62) with passages (63). An annular chamber (68) follows below a tubular body (61) between outer tube (55) and cylinder liner (70). The free cross-section of the annular chamber (68) corresponds to the narrowest central bore (12, 22, 32, 42/47, 62, 82, 92) in the through components (11, 20, 30, 40, 61, 80, 87/90). Bores, passages and grooves (71, 72; 81, 83) in cylinder liner (70) and central tube (80) interact in a motion-controlling manner with recesses (76, 76') and bores (78, 78') of the piston (75). <IMAGE>

IPC 1-7  
**E21B 4/14**

IPC 8 full level  
**E21B 1/30** (2006.01); **E21B 4/14** (2006.01)

CPC (source: EP US)  
**E21B 4/14** (2013.01 - EP US)

Cited by  
EP0933169A3; CN102482917A; DE102005015886A1; DE102005015886B4; CN104278948A; US9016404B2

Designated contracting state (EPC)  
AT BE CH DE ES FR GB GR IE IT LI SE

DOCDB simple family (publication)  
**US 5564510 A 19961015**; AT E191055 T1 20000415; AU 677874 B2 19970508; AU 8046794 A 19950622; CA 2138086 A1 19950616; CZ 285685 B6 19991013; CZ 316194 A3 19950712; DE 59409229 D1 20000427; DE 9319223 U1 19940224; EP 0658681 A2 19950621; EP 0658681 A3 19970102; EP 0658681 B1 20000322; ES 2147212 T3 20000901; ZA 949802 B 19951002

DOCDB simple family (application)  
**US 35600394 A 19941214**; AT 94119216 T 19941206; AU 8046794 A 19941214; CA 2138086 A 19941214; CZ 316194 A 19941214; DE 59409229 T 19941206; DE 9319223 U 19931215; EP 94119216 A 19941206; ES 94119216 T 19941206; ZA 949802 A 19941208