

9703473-0

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: B24B 3/33, 45/00, B23B 31/117		(11) International Publication Number: WO 96/23627
A1		(43) International Publication Date: 8 August 1996 (08.08.96)
(21) International Application Number: PCT/CA96/00078		(81) Designated States: AM, AU, AZ, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TR, UA, UG, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
(22) International Filing Date: 5 February 1996 (05.02.96)		
(30) Priority Data: 08/383,222 3 February 1995 (03.02.95) US 34274/95 16 October 1995 (16.10.95) AU		
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* Discarded w/ TEL - Use applicant's add. in the PCT gazette. Enl 11/11/2K		

(54) Title: GRINDING CUP AND HOLDER DEVICE

(57) Abstract

The present invention relates to improvements in devices for use as grinding cups (30) for grinding the hard metal pins or working tips of drill bits and more specifically, but not exclusively, for grinding the tungsten carbide cutting teeth or buttons of a drill head and the means for detachably connecting the grinding cups (30) to the grinding machine (10). The grinding cups (30) have top and bottom surfaces (33, 35) and consist of a lower grinding section (31) and an upper body section (32). The grinding section (31) is formed from a material capable of grinding the tungsten carbide button bits such as a metal and diamond matrix. The peripheral edge (35) in the bottom surface (34) may be beveled to facilitate the removal of steel from the face of the bit around the base of the button during grinding. A centrally disposed convex recess (36) is formed in the bottom surface (34) of the lower grinding section (31) having the desired profile for the button to be ground. The upper body section (32) has a centrally disposed cavity (37) formed in the top surface (35) of the grinding cups (30). This cavity is sized and shaped to permit the grinding cup (30) to be detachably connected to the drive member (21) of a grinding machine (10) and rotated during the grinding operation. One or more passageways (40) connect the floor (43) of the cavity (37) in the top surface (35) of the grinding cup (30) with the convex recess (36) in the grinding section (31) to permit a coolant, preferably water, optionally mixed with cutting oil, to be provided to the surface of the button during grinding, through one or more outlets (44).

