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(71) Applicant: C.M.E. BLASTING & MINING EQUIPMENT LTD. (CA/CA): 36 Cameo Street, Oakville, Ontario L6J 5Y1 (CA).		Published With international search report.	
(72) Inventors: SIJLANDER, Kurt, Robert; 36 Cameo Street, Oakville, Ontario L6J 5Y1 (CA). SIJLANDER, Bo, Thomas; 120 Bath Street, Oakville, Ontario L6K 1A8 (CA).			
(74) Agent: CARSON, James, W.; Carson Law Office, 1011 Upper Middle Road East, Unit C-3, Box 1230, Oakville, Ontario L6H 5Z9 (CA).			

(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).

