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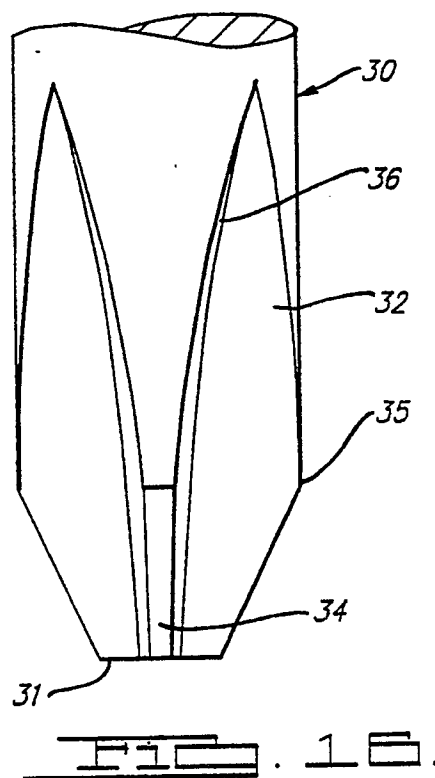
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11.07.90 Bulletin 90/28(71) Applicant: **Black & Decker Inc.**
Drummond Plaza Office Park 1423 Kirkwood
Highway
Newark Delaware 19711(US)(72) Inventor: **Chaconas, Peter Constantine**
4340 Butler Road
Glyndon Maryland 21071(US)(74) Representative: **Wetters, Basil David Peter et**
al
Emhart Patents Department Lyn House 39
The Parade
Oadby, Leicester LE2 5BB(GB)(54) **Improved screwdriver bit for Phillips-head fasteners.**

(57) A modified Phillips-type screwdriver bit is disclosed that is fully compatible with a standard Phillips-head fastener, and is designed to significantly increase the level of torque that can be applied to the fastener while at the same time substantially reducing the cam-out forces normally produced by a standard Phillips screwdriver bit. These results are accomplished by forming generated surfaces along the side walls of the bit wings so that the included angle defined by the converging side walls of adjoining bit wings gradually increases from the Phillips standard 92 degrees at the base of the bit wings to approximately 105 degrees at the wing tips.

EP 0 369 655 A3 This configuration serves to confine the application of torque to the side surfaces of the bit wings initially along contact lines adjacent and parallel to the roots of the bit wings with the contact area gradually progressing radially outwardly as torque levels increase and the opposing side surfaces of the recess wings in the head of the fastener begin to deform.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	US-A-3 658 105 (J. BURT et al.) * Whole document *	1-3, 10-13, 17-22, 26-30, 34-37, 41, 42	B 25 B 15/00
X	FR-A-2 469 250 (P. DEFOUGERES) * Figures 1-3; page 3, lines 11-14 *	7-9	
Y		1-3, 10-13, 17-22, 26-30, 34-37, 41, 41	
X	US-A-2 046 838 (H.F. PHILLIPS) * Figures 1-4 *	7, 8, 9	TECHNICAL FIELDS SEARCHED (Int. Cl.5) B 25 B
A		1, 17, 20, 28, 35	
A	US-A-4 625 598 (F. WOLFRAM) * Abstract; figure 11 *	1, 2, 10, 12, 21, 22, 27, 41, 42	
A	US-A-2 389 129 (J.H. BISHOP) * Page 3, left-hand column, lines 10-22; figure 7 *	6, 16, 25, 33, 40	
A	EP-A-0 046 010 (GKN SKREWS & FASTENERS LTD) * Page 10, lines 1-10; figure 2a *	1-3, 12, 13, 21, 22, 27, 41, 42	
		-/-	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19-04-1990	Examiner MAJERUS H.M.P.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-2 474 994 (J.J. TOMALIS) * Figure 6 * ---	4, 14, 23 , 31, 38	
A	US-A-2 764 197 (C.T. TORRESEN) * Figures 3, 6 * ---	5, 15, 24 , 32, 39	
A	US-A-3 654 974 (B.O. BARNES) * Abstract; figures 1, 2 * ---	4, 14, 23 , 31, 38	
A	FR-A-2 383 350 (TEXTRON INC.) * Page 7, line 39 - page 8, line 6; figure 4 * ---	1, 2, 10, 12, 21, 22, 27, 41, 42	
A	FR-A-1 330 358 (GUEST, KEEN & NETTLEFOLDS LTD) ---		
A	US-A-2 646 829 (H.F. PHIPARD, Jr.) ---		
A	US-A-2 601 453 (H.F. PHIPARD, Jr.) ---		
A	US-A-3 913 647 (E.T. ARNN) -----		TECHNICAL FIELDS SEARCHED (Int. Cl.5)
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