

(19)



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(11) Publication number:

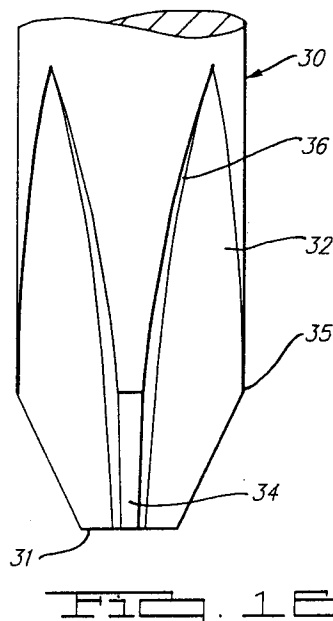
0 551 930 A3

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **93104130.5**(51) Int. Cl.⁵: **B25B 15/00**(22) Date of filing: **03.11.89**(30) Priority: **14.11.88 US 270000**(43) Date of publication of application:
21.07.93 Bulletin 93/29(60) Publication number of the earlier application in
accordance with Art.76 EPC: **0 369 655**(84) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE(88) Date of deferred publication of the search report:
18.08.93 Bulletin 93/33(71) Applicant: **Black & Decker Inc.**
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Oadby, Leicester LE2 5BB (GB)(54) **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 the use of a driver having a cross-shaped recess formed in the head thereof, and having associated therewith an axis and including a bit portion symmetrical about any plane containing the axis of the driver and adapted for insertion into said recess which comprises radially symmetrical wing means having generated side surfaces and defining roots therebetween for rotationally driving said fastener on said side surfaces in the same manner in both rotational directions. Preferably said wing means comprise four equally radially spaced bit wings defined by generated side surfaces that in turn define an included angle between adjoining bit wings that progressively increases from a first predetermined angle at the base of said bit wings to a second greater predetermined angle at an axially spaced distance therefrom. The radially outwardly facing surfaces of said bit wings may be tapered toward a common point at an angle relative to the axis of said bit portion substantially equal to the

Phillips-standard wing angle. The roots of said bit portion are preferably oriented relative to said bit axis at an angle substantially equal to the Phillips-standard root angle.

**EP 0 551 930 A3**



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EUROPEAN SEARCH REPORT

Application Number

EP 93 10 4130

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)
X	FR-A-2 469 250 (P.DEFOUGERES)	1-4, 10, 11, 17	B25B15/00
Y	* page 3, line 11 - line 14; figures *	7-9, 12, 13, 16	

Y	US-A-3 658 105 (J.BURT ET AL.)	8, 9, 12, 13	
	* the whole document *		

Y	US-A-2 389 129 (J.H.BISHOP)	7, 16	
	* page 3, left column, line 10 - line 22; figure 7 *		

X	GB-A-446 714 (PHILLIPS SCREW COMPANY)	1, 10	
	* page 3, line 51 - line 57; figure 3 *		

X	GB-A-1 065 348 (J.STEAD & COMPANY LIMITED)	1, 10	
	* page 3, line 49 - line 53; figure 3 *		

A	US-A-4 625 598 (F.WOLFRAM)	1	
	* abstract; claim 1; figures 8-11 *		
	* column 2, line 64 - column 3, line 13 *		

A	US-A-2 764 197 (C.T.TORRESEN)	5, 6, 14, 15	B25B
	* figure 3 *		

The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 JUNE 1993	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	