



US007175184B1

(12) **United States Patent**
Rinner et al.

(10) **Patent No.:** **US 7,175,184 B1**

(45) **Date of Patent:** **Feb. 13, 2007**

(54) **COLLECT TOOL HOLDER AND METHOD OF MAKING SAME**

(75) Inventors: **James A. Rinner**, Racine, WI (US);
Hva Gao, Fox Point, WI (US)

(73) Assignee: **Pilling Weck Incorporated**, Horsham, PA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 455 days.

(21) Appl. No.: **10/692,076**

(22) Filed: **Oct. 24, 2003**

(51) **Int. Cl.**
B23B 31/107 (2006.01)

(52) **U.S. Cl.** **279/43; 279/50; 279/75**

(58) **Field of Classification Search** **279/22, 279/30, 43, 50, 57, 74, 75, 82, 137; 29/428, 29/505, 453, 506, 512**

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,174,997 A	3/1916	Lackner	
1,636,421 A	7/1927	Knott	
1,740,645 A	12/1929	Currier	
2,172,070 A	9/1939	Palmgren	279/65
2,370,487 A	2/1945	Poutie	279/42
2,472,392 A	6/1949	Alexander	279/75
2,731,273 A *	1/1956	Edens	279/81
2,835,497 A	5/1958	Suhner	279/42
2,926,020 A	2/1960	Dayton	279/75
2,931,660 A	4/1960	Barwinkel	279/48
3,240,520 A	3/1966	Dailey	
3,583,715 A	6/1971	Jahri	279/75
3,633,931 A	1/1972	Bitz	279/75
3,674,281 A *	7/1972	Hedsrick	279/30
3,708,178 A	1/1973	Lauricella	279/81
3,724,563 A	4/1973	Wickham	173/163
3,747,946 A *	7/1973	Edens	279/81
3,790,182 A *	2/1974	Schuman	279/43

3,947,047 A	3/1976	Hultman	279/1 B
4,014,558 A *	3/1977	Brinkman	279/50
4,032,163 A	6/1977	Holt	279/37
4,199,160 A	4/1980	Bent	279/30
4,347,753 A *	9/1982	Claussen et al.	74/110
4,441,563 A	4/1984	Walton	173/163
4,463,960 A	8/1984	Walton	279/60
4,525,111 A	6/1985	Gutsche	408/239 A
4,614,469 A	9/1986	Beere	409/219
4,692,073 A	9/1987	Martindell	408/239 A
4,877,020 A	10/1989	Vich	128/92 V
4,900,202 A	2/1990	Wienhold	408/240
4,991,859 A	2/1991	Rohm	279/60
5,013,194 A	5/1991	Wienhold	408/240

(Continued)

FOREIGN PATENT DOCUMENTS

JP 01011701 A * 1/1989

Primary Examiner—Monica Carter
Assistant Examiner—J Williams
(74) *Attorney, Agent, or Firm*—Baker & Hostetler LLP

(57) **ABSTRACT**

A tool holder for a tool with a recess having detent disposed therein for holding the tool axially, and having a sleeve telescoped over a collet which has flexible fingers and with the sleeve and the fingers having camming surfaces for effecting clamping onto the tool. The axial locations of the recess and the detent and the camming surfaces are such that they are all in an engaged position when the sleeve is in one position along the axis. The sleeve and the collet have chamfers interengagable upon telescopic movement between the sleeve and the collet for flexing the fingers to thereby have the collet slide into the sleeve.

7 Claims, 2 Drawing Sheets

