



US005649798A

# United States Patent [19]

[11] Patent Number: **5,649,798**

Ito

[45] Date of Patent: **Jul. 22, 1997**

[54] **INSERT FOR DECK PLATE** 4,883,396 11/1989 Shamah et al. .... 441/387 X  
 5,205,690 4/1993 Roth ..... 52/704 X  
 [76] Inventor: **Katsuo Ito, Minamiku Makomanai,**  
**Kashiwaoka 2-7-15, Sapporo, Japan** 5,428,936 7/1995 Roth ..... 52/704

### FOREIGN PATENT DOCUMENTS

[21] Appl. No.: **334,921**  
 [22] Filed: **Nov. 7, 1994** 2611395 7/1977 Germany ..... 411/387

### [30] Foreign Application Priority Data

Dec. 13, 1993 [JP] Japan ..... 5-342365

*Primary Examiner*—Neill R. Wilson

[51] **Int. Cl.<sup>6</sup>** ..... **F16B 25/00; F16B 33/00**

### [57] ABSTRACT

[52] **U.S. Cl.** ..... **411/369; 411/387; 411/533;**  
411/542; 52/704

A screw insert for deck plates which is configured to both drill the pilot hole and thereafter be screwed into the deck plates in a simple step. The insert also has means to fill the gap between the pilot hole and the insert structure to be completely filled.

[58] **Field of Search** ..... 411/368, 369,  
411/386, 387, 150, 544, 533, 542; 52/699,  
700, 704, 707

### [56] References Cited

#### U.S. PATENT DOCUMENTS

4,720,223 1/1988 Neights et al. .... 411/544 X

**4 Claims, 5 Drawing Sheets**

