

Title (en)  
Tool with ultrasound adaptor

Title (de)  
Werkzeuggerät mit Ultraschalladapter

Title (fr)  
Outil avec adapteur ultrason

Publication  
**EP 1157752 A3 20040526 (DE)**

Application  
**EP 01810469 A 20010514**

Priority  
DE 10025352 A 20000523

Abstract (en)  
[origin: EP1157752A2] The device has an ultrasonic adapter with a capacitive electroacoustic converter (4) connected to an ultrasonic frequency generator (8) for generating ultrasonic waves for a tool (2). The capacitive electroacoustic converter is connected to the secondary winding (5) of a transformer (6) and the ultrasonic frequency converter is connected to the primary winding (7).

IPC 1-7  
**B06B 1/06**; B06B 3/00; B28D 1/04; B23B 37/00; H01L 41/04; H01L 41/09

IPC 8 full level  
**B23B 37/00** (2006.01); **B06B 1/06** (2006.01); **B06B 3/00** (2006.01); **B24B 1/04** (2006.01); **B28D 1/04** (2006.01); **G10K 11/02** (2006.01); **H02N 2/00** (2006.01); **H02N 2/16** (2006.01); **H10N 30/20** (2023.01); **H10N 30/80** (2023.01)

CPC (source: EP US)  
**B06B 3/00** (2013.01 - EP US); **B28D 1/041** (2013.01 - EP US); **G10K 11/02** (2013.01 - EP US)

Citation (search report)

- [X] US 4705980 A 19871110 - MISHIRO SHOJI [JP]
- [X] US 5021700 A 19910604 - TAKAHASHI KENICHIROH [JP], et al
- [X] US 3441875 A 19690429 - SHOH ANDREW
- [X] US 3443130 A 19690506 - SHOH ANDREW
- [X] US 3152295 A 19641006 - SCHEBLER BERNARD J
- [X] US 5140231 A 19920818 - KASHIYAMA RITSUO [JP]
- [AD] EP 0680060 A1 19951102 - EATON CORP [US]
- [X] PATENT ABSTRACTS OF JAPAN vol. 010, no. 016 (E - 375) 22 January 1986 (1986-01-22)

Cited by  
DE102009008227C5; EP1422034A1; DE102012106382A1; US9344053B2; US8955574B2; WO2010091821A1; WO2012163919A3

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)  
**EP 1157752 A2 20011128**; **EP 1157752 A3 20040526**; **EP 1157752 B1 20080319**; CN 1219602 C 20050921; CN 1324713 A 20011205; DE 10025352 A1 20011206; DE 10025352 B4 20070920; DE 50113742 D1 20080430; JP 2002028808 A 20020129; JP 4917215 B2 20120418; US 2003001456 A1 20030102; US 6731047 B2 20040504

DOCDB simple family (application)  
**EP 01810469 A 20010514**; CN 01119003 A 20010515; DE 10025352 A 20000523; DE 50113742 T 20010514; JP 2001153739 A 20010523; US 85987201 A 20010517