

Title (en)  
FLUID INJECTION DEVICE

Title (de)  
FLUIDEINSPRITZVORRICHTUNG

Title (fr)  
DISPOSITIF D'INJECTION DE FLUIDE

Publication  
**EP 2150695 A2 20100210 (FR)**

Application  
**EP 08805893 A 20080529**

Priority  
• FR 2008050950 W 20080529  
• FR 0703887 A 20070531

Abstract (en)  
[origin: WO2008152314A2] The invention relates to an injector comprising a nozzle that includes an opening and a seat, a needle movably mounted in the nozzle and having an end defining a valve in a contact area with the seat, a means for vibrating the valve, a first acoustic-impedance breaking area at a first distance from the valve along the nozzle, and another first acoustic-impedance breaking area at a second distance from the valve along the needle. According to the invention, each of the first and second distances is such that the respective propagation time of acoustic waves along said distance is:  $T_i = n_i \cdot [\pi/2]$ , where  $n_i$  is a positive integer coefficient different from zero with  $i = 3$  for the first distance and  $i = 4$  for the second distance,  $\pi$  being a period of the vibrations.

IPC 8 full level  
**F02M 45/10** (2006.01); **F02M 61/08** (2006.01)

CPC (source: EP KR US)  
**F02M 45/10** (2013.01 - EP KR US); **F02M 61/08** (2013.01 - EP KR US); **F02M 69/041** (2013.01 - EP US); **F02M 2200/21** (2013.01 - EP US)

Citation (search report)  
See references of WO 2008152314A2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL BA MK RS

DOCDB simple family (publication)  
**FR 2916810 A1 20081205**; **FR 2916810 B1 20090828**; CN 101765712 A 20100630; CN 101765712 B 20120208; EP 2150695 A2 20100210; JP 2010528224 A 20100819; KR 20100029224 A 20100316; RU 2009149203 A 20110710; RU 2457354 C2 20120727; US 2011023827 A1 20110203; US 8746213 B2 20140610; WO 2008152314 A2 20081218; WO 2008152314 A3 20090212

DOCDB simple family (application)  
**FR 0703887 A 20070531**; CN 200880100972 A 20080529; EP 08805893 A 20080529; FR 2008050950 W 20080529; JP 2010509876 A 20080529; KR 20097027552 A 20080529; RU 2009149203 A 20080529; US 60226808 A 20080529