

Title (en)  
SANITARY CLEANING DEVICE

Title (de)  
SANITÄRREINIGUNGSVORRICHTUNG

Title (fr)  
DISPOSITIF DE NETTOYAGE SANITAIRE

Publication  
**EP 3315677 A4 20180627 (EN)**

Application  
**EP 16813947 A 20160620**

Priority  
• JP 2015127162 A 20150625  
• JP 2016002944 W 20160620

Abstract (en)  
[origin: EP3315677A1] A sanitary cleaning device includes heat exchanger (700), cleaning water nozzle (831), foam generation unit (560) for generating cleaning foam, spray nozzle (550) for discharging cleaning water or cleaning foam, spray nozzle drive unit (550a) for driving and rotating the spray nozzle (550), opening and closing valve (530a) for opening and closing a branch passage to spray nozzle (550), and control unit (130). Spray nozzle (550) is mounted on a body such that rotation axis Ax of spray nozzle (550) is inclined in a front-back direction and right-left direction. In the front-back direction, the rotation axis is inclined such that a lower side of the rotation axis is inclined to the front side of the toilet bowl. In the right-left direction, the rotation axis is inclined such that the lower side of the rotation axis is inclined to cleaning water nozzle (831). As a result, a foam film is formed on the inner surface of the toilet bowl, ranging from its front part to its rear part, to prevent adhesion of dirt.

IPC 8 full level  
**E03D 9/08** (2006.01); **E03D 9/00** (2006.01)

CPC (source: CN EP)  
**E03D 9/00** (2013.01 - CN); **E03D 9/002** (2013.01 - CN EP); **E03D 9/005** (2013.01 - CN EP); **E03D 9/08** (2013.01 - CN EP)

Citation (search report)  
• [Y] EP 2848745 A1 20150318 - PANASONIC IP MAN CO LTD [JP]  
• [Y] US 2007245472 A1 20071025 - KAO WEN-HSIEN [TW]  
• [Y] WO 03102315 A1 20031211 - GEBERIT TECHNIK AG [CH], et al  
• [Y] JP 2004293115 A 20041021 - MATSUSHITA ELECTRIC WORKS LTD  
• See references of WO 2016208175A1

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3315677 A1 20180502; EP 3315677 A4 20180627**; CN 107683360 A 20180209; CN 111519726 A 20200811; CN 111519726 B 20210713; EP 3699370 A1 20200826; JP 6650569 B2 20200219; JP WO2016208175 A1 20180412; TW 201704600 A 20170201; TW 202041757 A 20201116; TW I771701 B 20220721; WO 2016208175 A1 20161229

DOCDB simple family (application)  
**EP 16813947 A 20160620**; CN 201680035134 A 20160620; CN 202010439830 A 20160620; EP 20170393 A 20160620; JP 2016002944 W 20160620; JP 2017524634 A 20160620; TW 105118796 A 20160615; TW 109121624 A 20160615