

Title (en)  
HYGIENIC CLEANING DEVICE

Title (de)  
HYGIENISCHE REINIGUNGSVORRICHTUNG

Title (fr)  
DISPOSITIF DE NETTOYAGE HYGIÉNIQUE

Publication  
**EP 3299526 A4 20180627 (EN)**

Application  
**EP 16799529 A 20160512**

Priority  
• JP 2015104082 A 20150522  
• JP 2016002325 W 20160512

Abstract (en)  
[origin: EP3299526A1] A hygienic cleaning device includes heat exchanger (700) for heating cleaning water, cleaning water nozzle (831), foam generation unit (560) for generating cleaning foam, spray nozzle (550) for discharging cleaning foam to an inner surface of a toilet bowl, spray nozzle drive unit (550a) for driving spray nozzle (550), opening and closing valve (530a) for opening and closing branch passage (530), and control unit (130). Control unit (130) causes spray nozzle (550) to spray cleaning foam by at least one reciprocal rotation operation of a direction of a discharge opening of spray nozzle (550) over an inner circumference of the toilet bowl by rotating spray nozzle drive unit (550a) forward and backward while changing an output of discharge water amount variable unit (516). This makes it possible to provide a hygienic cleaning device that can prevent adhesion of dirt by forming a foam film on the inner surface of the toilet bowl, ranging from its front part to its rear part.

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

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

Citation (search report)  
• [Y] EP 2848745 A1 20150318 - PANASONIC IP MAN CO LTD [JP]  
• [Y] US 2007245472 A1 20071025 - KAO WEN-HSIEN [TW]  
• [Y] DE 202012002839 U1 20130625 - VIEGA GMBH & CO KG [DE]  
• [Y] JP 2004293115 A 20041021 - MATSUSHITA ELECTRIC WORKS LTD  
• See references of WO 2016189814A1

Cited by  
EP3699370A1

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 3299526 A1 20180328; EP 3299526 A4 20180627; EP 3299526 B1 20200701**; CN 107614808 A 20180119; CN 107614808 B 20191101; ES 2816048 T3 20210331; JP 2020079558 A 20200528; JP 6754951 B2 20200916; JP 7022903 B2 20220221; JP WO2016189814 A1 20180315; TW 201704599 A 20170201; TW 202018156 A 20200516; TW 202018157 A 20200516; TW 202018158 A 20200516; TW I682088 B 20200111; TW I727569 B 20210511; TW I727570 B 20210511; TW I731530 B 20210621; WO 2016189814 A1 20161201

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**EP 16799529 A 20160512**; CN 201680028614 A 20160512; ES 16799529 T 20160512; JP 2016002325 W 20160512; JP 2017520218 A 20160512; JP 2020036694 A 20200304; TW 105115560 A 20160519; TW 108147896 A 20160519; TW 108147897 A 20160519; TW 108147898 A 20160519