

Title (en)  
COOLING TOWER AXIAL FAN IN A HOLLOWED DISC/RING CONFIGURATION

Title (de)  
AXIALLÜFTER MIT KÜHLTURM IN HOHLSCHEIBEN/RING-KONFIGURATION

Title (fr)  
VENTILATEUR AXIAL DE TOUR DE REFROIDISSEMENT DANS UNE CONFIGURATION CREUSÉE DE DISQUE/ANNEAU

Publication  
**EP 3612731 A4 20201230 (EN)**

Application  
**EP 18787749 A 20180423**

Priority  
• US 201762488303 P 20170421  
• US 2018028884 W 20180423

Abstract (en)  
[origin: CN110892159A] A cooling tower fan hub having a ring and a disc in which in which hollows and recesses are opened in the ring and/or in the disc in order to decrease fan natural frequencies and avoid excitation by the several kind of loads that affect a fan during operation. The number, size and shape of the hollows can be adjusted to tune the fan natural frequencies around the original value.

IPC 8 full level  
**F04D 19/00** (2006.01); **B63H 1/20** (2006.01); **F04D 29/10** (2006.01); **F04D 29/16** (2006.01); **F04D 29/32** (2006.01); **F04D 29/34** (2006.01); **F04D 29/64** (2006.01); **F04D 29/66** (2006.01)

CPC (source: EP)  
**F04D 19/002** (2013.01); **F04D 29/102** (2013.01); **F04D 29/164** (2013.01); **F04D 29/329** (2013.01); **F04D 29/34** (2013.01); **F04D 29/668** (2013.01); **F05D 2250/291** (2013.01); **F05D 2260/31** (2013.01)

Citation (search report)  
• [Y] WO 2014210583 A1 20141231 - PRIME DATUM INC [US]  
• [YA] US 2013189104 A1 20130725 - HOLLAN C JASON [US], et al  
• [YA] US 2015211532 A1 20150730 - WHITLEY L BLAKE [US]  
• See also references of WO 2018195539A1

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

DOCDB simple family (publication)  
CN 110892159 A 20200317; CN 110892159 B 20220503; EP 3612731 A1 20200226; EP 3612731 A4 20201230

DOCDB simple family (application)  
CN 201880030912 A 20180423; EP 18787749 A 20180423