

Title (en)  
Motor, fan and filter arrangement for a vacuum cleaner

Title (de)  
Motor, Ventilator und Filteranordnung für einen Staubsauger

Title (fr)  
Moteur, ventilateur et agencement de filtre pour un aspirateur

Publication  
**EP 2220986 A3 20130320 (EN)**

Application  
**EP 10163809 A 20070418**

Priority  
• EP 07106392 A 20070418  
• EP 07102186 A 20070212  
• EP 10163809 A 20070418

Abstract (en)  
[origin: EP1955630A2] In a first aspect, the present invention provides a motor, fan and filter arrangement for a vacuum cleaner, comprising: a motor (10); a fan (20) connected to an output shaft (12) of the motor and having an axial intake; and a filter (30, 230, 330); wherein the fan (20) is arranged with its axial intake facing the motor (10); and the motor (10) is housed within the filter (30, 230, 330). Such an arrangement makes much more efficient use of space than a conventional arrangement and allows the motor to be positioned within the filter in a reversed direction in comparison to conventional arrangements, so that clear air from the filter can be drawn over the motor before encountering the fan. This also has the beneficial side-effect of cooling the motor with the filtered air. In a second aspect, the present invention also provides vacuum cleaners (100, 200, 300) comprising such a motor, fan and filter arrangement. Preferred embodiments of such vacuum cleaners are described, including a pivotable stick vac and different hand-holdable vacuum cleaners.

IPC 8 full level  
**A47L 5/24** (2006.01); **A47L 5/26** (2006.01); **A47L 7/00** (2006.01); **A47L 9/00** (2006.01); **A47L 9/12** (2006.01); **A47L 9/20** (2006.01); **A47L 9/22** (2006.01); **A47L 9/32** (2006.01)

CPC (source: EP US)  
**A47L 5/22** (2013.01 - EP US); **A47L 5/24** (2013.01 - EP US); **A47L 5/26** (2013.01 - EP US); **A47L 5/28** (2013.01 - EP US); **A47L 7/0038** (2013.01 - EP US); **A47L 7/0042** (2013.01 - EP US); **A47L 9/0009** (2013.01 - EP US); **A47L 9/127** (2013.01 - EP US); **A47L 9/20** (2013.01 - EP US); **A47L 9/22** (2013.01 - EP US); **A47L 9/322** (2013.01 - EP US)

Citation (search report)  
• [Y] DE 2627560 A1 19771229 - LICENTIA GMBH  
• [Y] US 2002189048 A1 20021219 - MARUYAMA KANAME [JP], et al  
• [A] EP 1523916 A2 20050420 - BLACK & DECKER INC [US]  
• [A] FR 705466 A 19310608 - SIEMENS AG  
• [A] CA 2553412 A1 20070211 - BLACK & DECKER INC [US]  
• [A] DE 20003759 U1 20000504 - HO JEN HSIN [TW]

Cited by  
CN103784081A; DE102021126629A1; US11241129B2; DE102020127225A1; US10165914B2; US10674884B2; US10729294B2; US10016105B2; US10702113B2; US9986880B2; DE102020127224A1; US10842330B2; US10568477B2; US9962048B2; US10750913B2; US10016104B2; US10631693B2; DE102020119234A1; US11950745B2; US10791889B2; US11229334B2; US11826007B2; US10537216B2; US10722086B2; US10765278B2; US11445875B2; US11737621B2; US9962047B2; US9980616B2; US10085604B2; US10159391B2; US10165915B2; US10165913B2; US10238249B2; US10244906B2; US10258208B2; US10327610B2; US10426302B2; US10506904B2; US10624512B2; US10813510B2; US11160425B2; US11202539B2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL BA HR MK RS

DOCDB simple family (publication)  
**EP 1955630 A2 20080813**; **EP 1955630 A3 20091007**; AU 2008201597 A1 20081106; AU 2008201597 B2 20111006; AU 2008201597 B8 20120202; CA 2628573 A1 20081018; CA 2628573 C 20130813; CA 2731525 A1 20081018; CA 2731525 C 20140128; CN 101288572 A 20081022; CN 101288572 B 20120704; CN 101897558 A 20101201; CN 101897558 B 20140917; EP 2220986 A2 20100825; EP 2220986 A3 20130320; EP 2220986 B1 20140326; EP 2223644 A2 20100901; EP 2223644 A3 20130320; EP 2223644 B1 20140326; NZ 567297 A 20090731; US 2008256744 A1 20081023

DOCDB simple family (application)  
**EP 07106392 A 20070418**; AU 2008201597 A 20080410; CA 2628573 A 20080407; CA 2731525 A 20080407; CN 200810092965 A 20080418; CN 201010234345 A 20080418; EP 10163808 A 20070418; EP 10163809 A 20070418; NZ 56729708 A 20080410; US 8289208 A 20080415