



(11) **EP 2 916 070 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
02.12.2015 Bulletin 2015/49

(51) Int Cl.:
F23C 7/00 (2006.01) F23D 14/28 (2006.01)

(43) Date of publication A2:
09.09.2015 Bulletin 2015/37

(21) Application number: **14181342.8**

(22) Date of filing: **19.08.2014**

(84) Designated Contracting States:
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 States:
BA ME

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(30) Priority: **06.03.2014 TW 103107728**

(54) **Adjustable vortex flame device**

(57) An adjustable vortex flame device includes a control head (10) delimiting a through hole with an opening and including a flow guiding mechanism (20) including a plurality of vanes and a flow control head inserting in the through hole. The flow control head includes a first member and a second member detachably engaging with each other and delimiting a first chamber and a second chamber connecting to each other. The two channels extend in the first member and to an outer periphery of the flow control head and connect to the first chamber. The flow control head has two flow outlets defined at distal ends of the two channels and a flow inlet defined at a distal end of the second chamber. A hollow and transparent shield (40) is disposed above the control head and delimits a space fluidly connecting to the through hole.

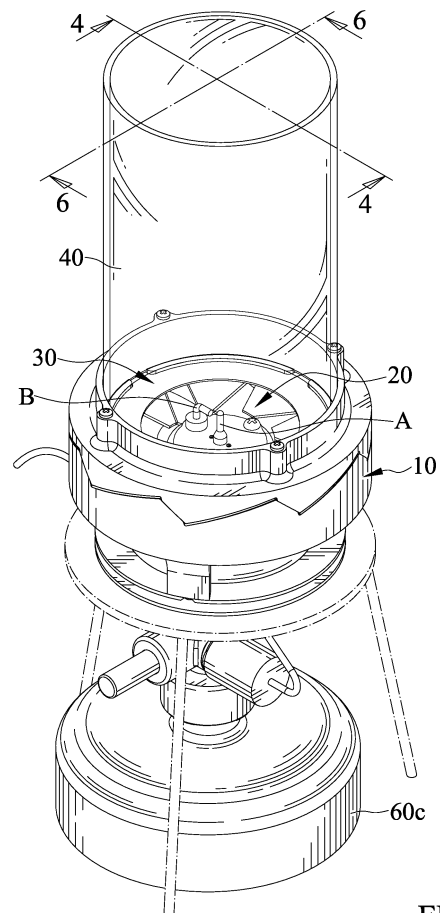


FIG. 1

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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 642 201 A1 (PRO IRODA IND INC [TW]) 25 September 2013 (2013-09-25) * paragraph [0012]; figures 2, 5, 6 *	1-6	INV. F23C7/00 F23D14/28
A	US 2004/202978 A1 (WONG MING KING [HK]) 14 October 2004 (2004-10-14) * paragraphs [0002], [0011], [0027], [0036], [0043], [0044], [0045]; figures 3a,6 *	1-5	
A	US 2009/016048 A1 (MCBRIEN RUSS [US] ET AL) 15 January 2009 (2009-01-15) * paragraphs [0028], [0029], [0030]; figures 2-4 *	1	
A	US 3 493 180 A (WALSH BRUCE R) 3 February 1970 (1970-02-03) * column 1, line 60 - line 68 * * column 3, line 25 - line 34; figures 1-3 *	6	
A	US 2 515 845 A (BUSSCHE HENDRIK K J VAN DEN) 18 July 1950 (1950-07-18) * column 1, line 6 - line 12 * * page 1, line 39 - line 45 * * column 3, line 3 - column 4, line 18; figures 1-3 *	1	TECHNICAL FIELDS SEARCHED (IPC) F23C F23D F21V

The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 June 2015	Examiner Harder, Sebastian
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-6

The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



LACK OF UNITY OF INVENTION
SHEET B

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

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1. claims: 1-6

An adjustable vortex flame device comprising a flow control head including a first and a second member detachably engaged with the first member, wherein the first member comprises two channels.

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2. claims: 7-15

An adjustable vortex flame device comprising a control mechanism delimiting a hole, wherein the hole has a diametrical size and which varies with respect to a size of a vortex flame of the adjustable vortex flame device.

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-06-2015

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82