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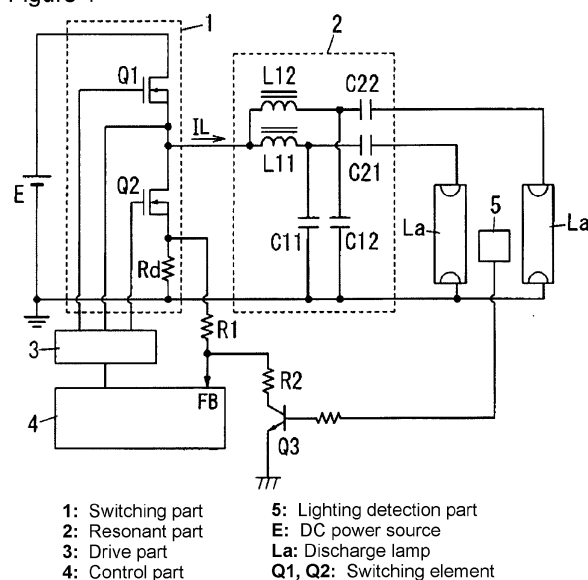
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(54) **Discharge lamp lighting device and illumination fixture using the same**

(57) [Object] To provide a discharge lamp lighting device capable of reducing electric stress that is placed on each discharge lamp at the start time, and an illumination fixture using the same.

[Means for Settlement] A plurality of discharge lamps La are lit by AC power to which DC power of a DC power source E is converted by an inverter circuit including a switching part 1 and a resonant part 2. The discharge lamp lighting device is provided with: a drive part 3 that drives respective switching elements Q1 and Q2 constituting the switching part 1; a control part 4 that controls the drive part 3; and a lighting detection part 5 that detects the start of a semi-lighting state where a part of the plurality of discharge lamps La is lit. When the lighting detection part 5 detects the start of the semi-lighting state, the control part 4 controls the drive part 3 so as to sufficiently increase a frequency of the AC power supplied to each of the discharge lamps La to decrease an inter-terminal voltage of each of the discharge lamps La, and thereby electric stress placed on each of the discharge lamps La is reduced.

Figure 1





## EUROPEAN SEARCH REPORT

Application Number  
EP 11 16 2647

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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)
Y	JP 2010 067562 A (PANASONIC ELEC WORKS CO LTD) 25 March 2010 (2010-03-25) * the whole document *	1-10	INV. H05B41/282 H05B41/298
Y,D	JP 2008 218333 A (MATSUSHITA ELECTRIC WORKS LTD) 18 September 2008 (2008-09-18) * page 1 - page 4; figure 1 *	1-10	
Y	GB 2 292 843 A (KOITO MFG CO LTD [JP]) 6 March 1996 (1996-03-06) * page 5, paragraph 4th - page 8, paragraph 4th; figure 2 *	9	
Y	JP 2000 012269 A (MATSUSHITA ELECTRIC WORKS LTD) 14 January 2000 (2000-01-14) * column 1 - column 4; figure 4 *	1-10	
A	EP 1 624 730 A1 (MINEBEA CO LTD [JP]) 8 February 2006 (2006-02-08) * figures 1-4 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			H05B
The present search report has been drawn up for all claims			
Place of search <b>Munich</b>		Date of completion of the search <b>22 August 2016</b>	Examiner <b>Henderson, Richard</b>
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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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 16 2647

5 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  
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22-08-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2010067562 A	25-03-2010	NONE	
JP 2008218333 A	18-09-2008	JP 5122838 B2 JP 2008218333 A	16-01-2013 18-09-2008
GB 2292843 A	06-03-1996	DE 19532165 A1 GB 2292843 A JP 3197166 B2 JP H0878175 A US 5572094 A	14-03-1996 06-03-1996 13-08-2001 22-03-1996 05-11-1996
JP 2000012269 A	14-01-2000	NONE	
EP 1624730 A1	08-02-2006	CN 1735305 A DE 602005002987 T2 EP 1624730 A1 JP 2006049028 A KR 20060053986 A US 2006028147 A1	15-02-2006 28-02-2008 08-02-2006 16-02-2006 22-05-2006 09-02-2006