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(54) Recovery system of the heat dissipated by luminaires, lamps and led devices

(57) Recovery system of the heat dissipated by luminaires, comprising at least one lighting appliance (1), or luminaire, which has a LED lamp (2), or a lamp or bulb, or other light generating means, featuring a thermal transmission means near the source of light, such a thermal transmission means being associated to a heat exchanger through which circulates a fluid (8), where in the case of using LEDs, the thermal transmission means is a transmitter or radiator (4) in contact with the base or supporting plate of the LEDs, and arranged at the bottom of a heat exchanger (5), while if the luminaire has lamps or bulbs, the thermal transmission means is a reflector, upon which in a surrounding manner a casing leaving an interior space defining a heat exchanger is provided.

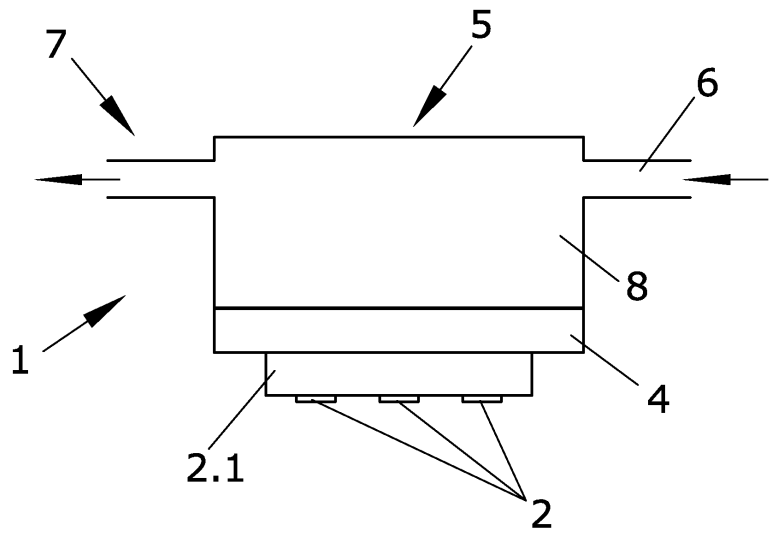


FIG.1

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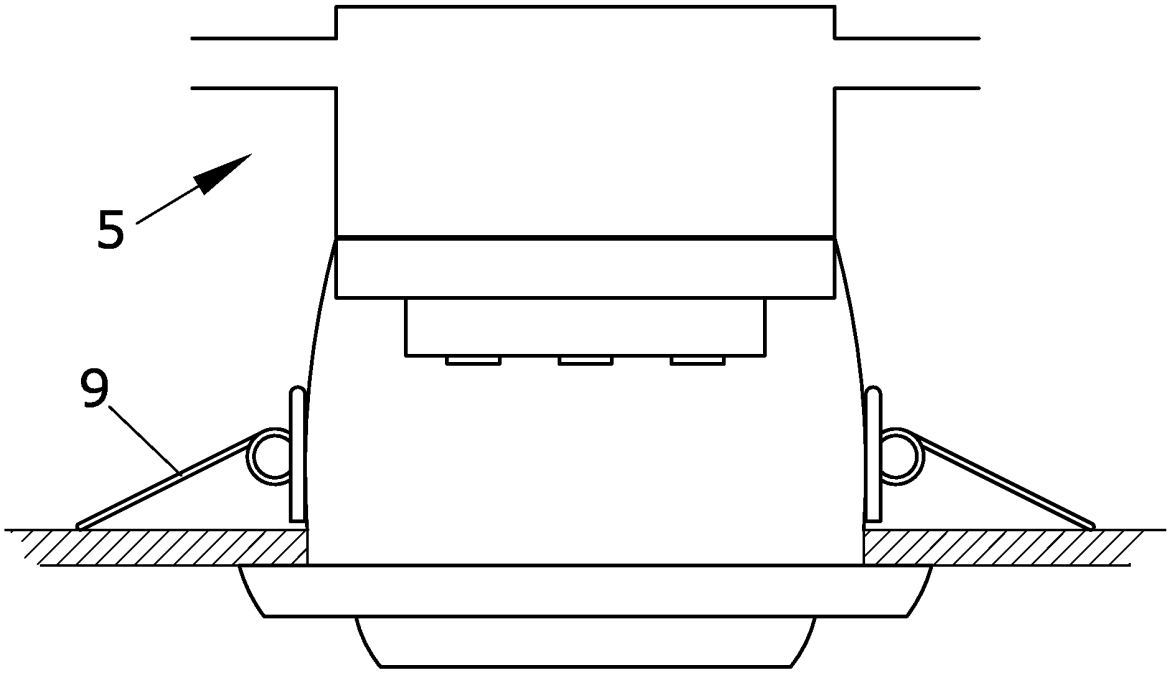


FIG.2

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EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2294

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	US 2007/090737 A1 (HU TSENG-HSIANG [TW] ET AL) 26 April 2007 (2007-04-26) * paragraph [0030]; figure 6 *	1,2,4,6, 8,9	INV. F21V29/00 ADD.
X	WO 2005/059436 A1 (AIMLEDS CORP [CA]; SEABROOK BILL [CA]) 30 June 2005 (2005-06-30) * page 12, line 16 - page 13, line 13; figures 12-15 * * page 5, line 19 - page 6, line 24; figures 1-3 *	1,2,4,6, 9	F21S8/02 F21Y101/00 F21Y101/02 F24D11/002
X	DE 20 2009 007426 U1 (ZUMTOBEL LIGHTING GMBH [AT]) 14 October 2010 (2010-10-14) * the whole document *	1-3,6	
X	CN 201 209 838 Y (YANGHUAI CHEN [CN]) 18 March 2009 (2009-03-18) Automatic Translation by the Intellectual Property Publishing House of SIPO; * abstract; figure 1 *	1-3,6,9	
			TECHNICAL FIELDS SEARCHED (IPC)
X	WO 2006/038791 A1 (VAN TILBORGH JOHANNES [NL]) 13 April 2006 (2006-04-13) * page 4, line 20 - page 6, line 7; figures 1-3 *	1,5-7,9	F21S F21V F21Y F24F F24D
X A	US 3 193 001 A (GERSHON MECKLER) 6 July 1965 (1965-07-06) * column 3, lines 23-45; figure 3 * * column 4, lines 27-37; figure 4 *	1,5,6,8, 9 3	
X A	US 3 372 740 A (KASTOVICH JOHN C ET AL) 12 March 1968 (1968-03-12) * the whole document *	1,5,6,9 3	

1 The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	18 March 2014	von der Hardt, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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18-03-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007090737 A1	26-04-2007	CN 1953164 A	25-04-2007
		US 2007090737 A1	26-04-2007
WO 2005059436 A1	30-06-2005	CA 2591569 A1	30-06-2005
		EP 1706666 A1	04-10-2006
		US 2007285920 A1	13-12-2007
		WO 2005059436 A1	30-06-2005
DE 202009007426 U1	14-10-2010	DE 202009007426 U1	14-10-2010
		EP 2256404 A1	01-12-2010
CN 201209838 Y	18-03-2009	NONE	
WO 2006038791 A1	13-04-2006	NL 1027017 C2	13-03-2006
		WO 2006038791 A1	13-04-2006
US 3193001 A	06-07-1965	NONE	
US 3372740 A	12-03-1968	NONE	

EPO FORM P0459

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