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Sutherland et al.

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- (54) **HEAT DISSIPATING ASSEMBLY**
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D303,437 S	9/1989	Mason
4,910,654 A	3/1990	Forge
D339,651 S	9/1993	Vieyra
D365,159 S	12/1995	Tinen
5,604,411 A	2/1997	Venkitasubrahmanian et al.
5,652,504 A	7/1997	Bangerter
D385,897 S	11/1997	Lin
5,738,436 A	4/1998	Cummings et al.
D397,482 S	8/1998	Binsukor
D405,216 S	2/1999	Porter et al.
D413,137 S	8/1999	Lin
5,953,221 A	9/1999	Kuhn et al.
6,013,988 A	1/2000	Bucks et al.
6,016,038 A	1/2000	Mueller et al.
6,094,014 A	7/2000	Bucks et al.
6,147,458 A	11/2000	Bucks et al.

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(58) **Field of Classification Search**
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D60,004 S	12/1921	Adam
D78,750 S	6/1929	Gunnison
D129,357 S	9/1941	Greppin
D132,276 S	5/1942	Greppin
D143,336 S	12/1945	Morrison
D150,357 S	7/1948	Herbster
D155,680 S	10/1949	Baker
D164,606 S	9/1951	Schlage
D234,797 S	4/1975	De John et al.
4,369,490 A	1/1983	Blum
4,396,882 A	8/1983	Kellenbenz
4,471,268 A	9/1984	Brown et al.

(Continued)

FOREIGN PATENT DOCUMENTS

WO	WO 2009/064433	5/2009
WO	WO 2009/064434	5/2009

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(57) **ABSTRACT**

An assembly for the dissipation of heat from an illumination structure of the type which includes one or more LEDs and a driver assembly operatively connected to the one or more LEDs. A primary heat sink is disposed in heat transferring relation to the components of a remainder of the illumination structure. A mount, also formed of a heat conductive material, is disposed in supporting or connected relation to the driver and in heat transferring relation to the primary heat sink. A compartment structure includes a hollow interior chamber, having heat insulating fluid disposed therein, and disposed in adjacent and/or aligned relation with the one LED so as to insulate it from heat generated by the driver assembly and other components of the light structure. The mount, primary heat sink and compartment structure are cooperatively disposed so as to define a flow path of heat away from the one or more LEDs to an area where it is dissipated exteriorly of the illumination structure.

21 Claims, 3 Drawing Sheets

