United States Patent [19]

Serizawa et al.

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4,733,335

[54]	VEHICUL	AR LAMP		
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[73]	Assignee:	Koito Manufacturing Co., Ltd., Tokyo, Japan		
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[51] [52]	Int. Cl. ⁴ U.S. Cl	B60Q 1/00 362/80; 362/373; 362/800; 340/84		
[58]		rch 362/61, 80, 268, 294, 368, 373, 246, 234, 235, 326, 327, 331, 296, 297, 308; 340/87, 84, 97		
[56]		References Cited		
U.S. PATENT DOCUMENTS				
	4,345,38 8/1	982 Mouyard et al 362/246		

3,432,808 3/1969 Fleece 362/80

FOREIGN PATENT DOCUMENTS

88060	9/1983	European Pat. Off 340/84
3148843	6/1983	Fed. Rep. of Germany 340/84
120425	9/1981	Japan 362/61
2069120	8/1981	United Kingdom 362/294
		United Kingdom 362/800

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[57] ABSTRACT

A vehicular lamp employing light-emitting diodes providing a good illumination efficiency, and which can be readily mounted on many different types of vehicles. The lamp includes a plurality of light-emitting diodes arranged on a supporting board, condenser lenses provided in front of each of the light-emitting diodes, and diffusion lenses arranged in front of the condenser lenses. A housing member supports the supporting board, the condenser lenses, and the diffusion lenses, the housing member having air holes formed therein to provide for ventilation. With this arrangement, the light produced by the light-emitting diodes is applied in the form of parallel beams to the front lens member by the condenser lenses, and the parallel light beams are diffused by the diffusion lenses on the front lens member. Accordingly, the front surface of the front lens member is illuminated in its entirety and illuminated uniformly.

32 Claims, 12 Drawing Figures

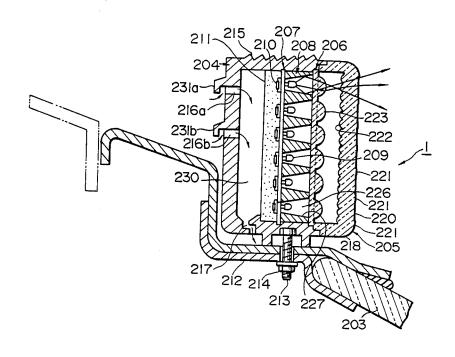




FIG . 1 PRIOR ART

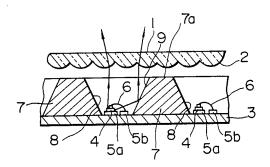
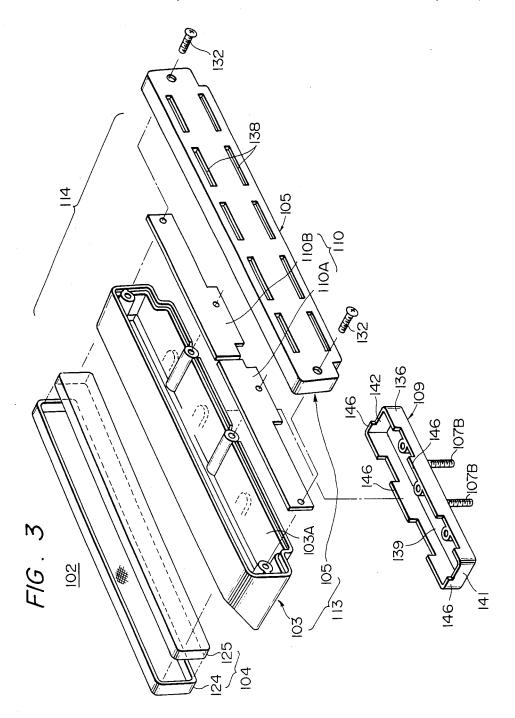
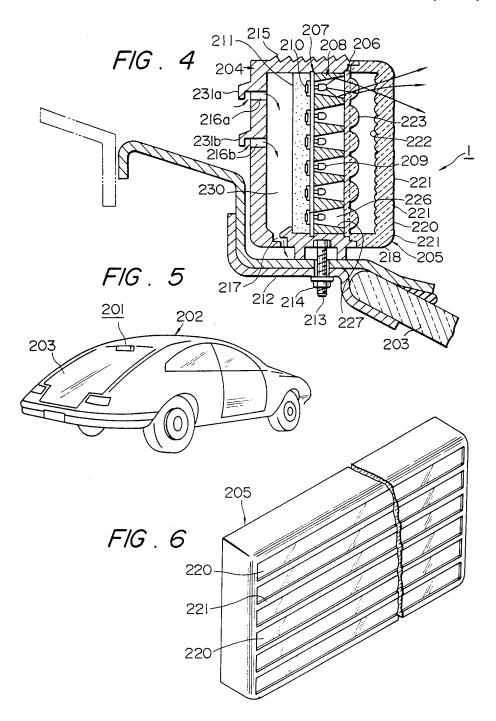


FIG. 2 103B 130 127 -114 <u>102</u> -110 126 112 124 125) 103A -136 104 140 109 106

107A







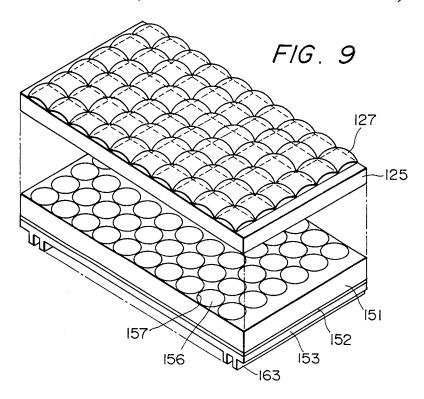
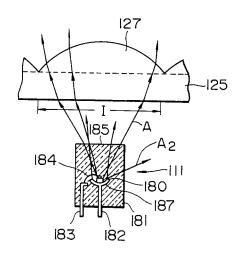


FIG. 10



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