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(54) **COMPOSITE DIFFUSER PLATES AND DIRECT-LIT LIQUID CRYSTAL DISPLAYS USING SAME**

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(58) **Field of Classification Search** 349/62–65
See application file for complete search history.

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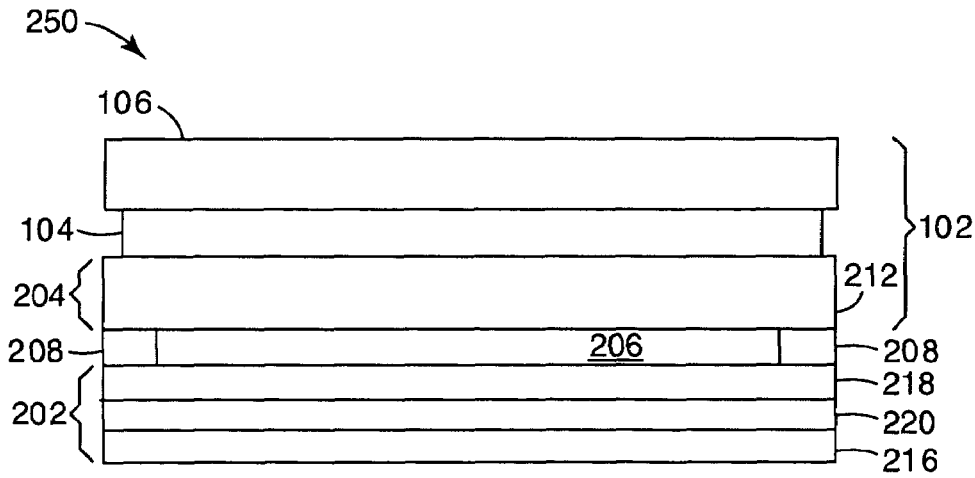
(57) **ABSTRACT**

In a directly-illuminated liquid crystal display (LCD), for example an LCD monitor or an LCD-TV, a number of light management layers lie between the light source and the LCD panel to provide bright, uniform illumination. The light management layers, including, for example, a diffuser, a reflective polarizer and a brightness enhancing layer, are contained in a light management unit that is formed from two subassemblies. The two subassemblies each contain a substrate and are attached together so as to leave a gap between the two subassemblies. The diffuser is located in one of the subassemblies, and the other light management layers may be in either of the subassemblies, or may be disposed in the gap between the subassemblies.

38 Claims, 25 Drawing Sheets