

(12) **United States Patent**  
**Parker**

(10) **Patent No.:** **US 7,434,974 B2**  
(45) **Date of Patent:** **Oct. 14, 2008**

(54) **LIGHT EMITTING PANEL ASSEMBLIES**  
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(73) Assignee: **Solid State Opto Limited** (VG)  
(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 103 days.  
(21) Appl. No.: **11/378,080**  
(22) Filed: **Mar. 17, 2006**  
(65) **Prior Publication Data**  
US 2006/0158906 A1 Jul. 20, 2006

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**Related U.S. Application Data**

(60) Continuation of application No. 10/784,527, filed on Feb. 23, 2004, now Pat. No. 7,160,015, which is a division of application No. 09/256,275, filed on Feb. 23, 1999, now Pat. No. 6,712,481, which is a continuation-in-part of application No. 08/778,089, filed on Jan. 2, 1997, now Pat. No. 6,079,838, which is a division of application No. 08/495,176, filed on Jun. 27, 1995, now Pat. No. 5,613,751.

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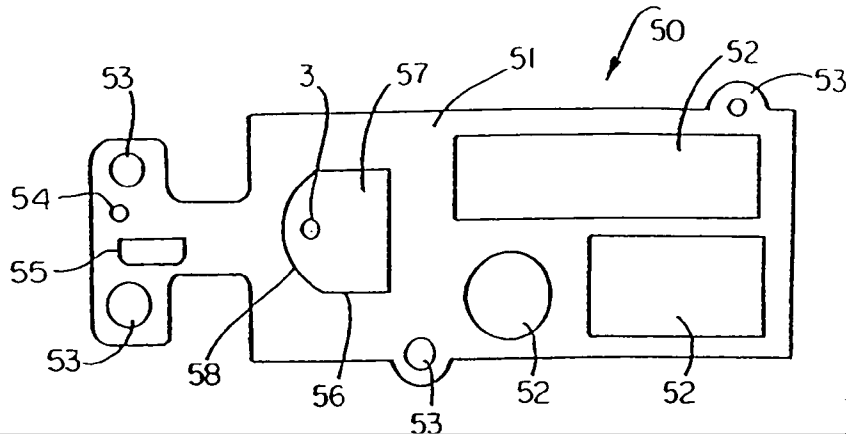
(51) **Int. Cl.**  
**F21V 7/04** (2006.01)  
(52) **U.S. Cl.** ..... **362/612**; 362/619; 362/632;  
362/634  
(58) **Field of Classification Search** ..... 362/231,  
362/800, 27, 619, 613, 612, 620, 608, 609,  
362/621, 600, 632, 634, 26  
See application file for complete search history.

(57) **ABSTRACT**

Light emitting panel assembly includes a light emitting panel member received in a cavity or recess in a tray or housing. The panel member has a pattern of light extracting deformities on or in at least one surface of the panel member to cause light received from at least one LED light source positioned near or against the light entrance surface of the panel member to be emitted from a light emitting surface of the panel member. The tray or housing acts as an end edge and/or side edge reflector for the panel member to reflect light that would otherwise exit the panel member through the end edge and/or side edge back into the panel member for causing additional light to be emitted from the panel member.

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**24 Claims, 4 Drawing Sheets**



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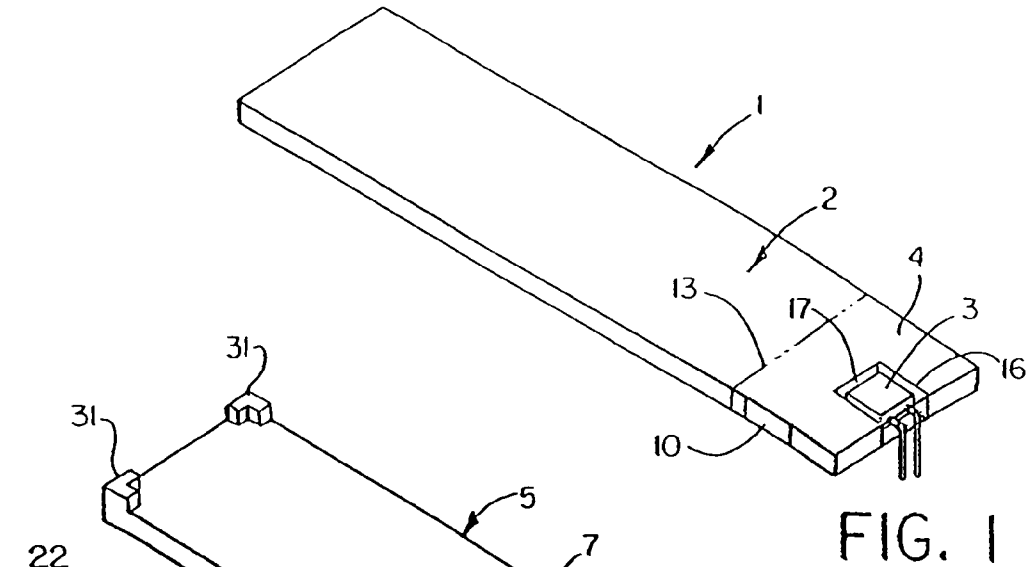


FIG. 1

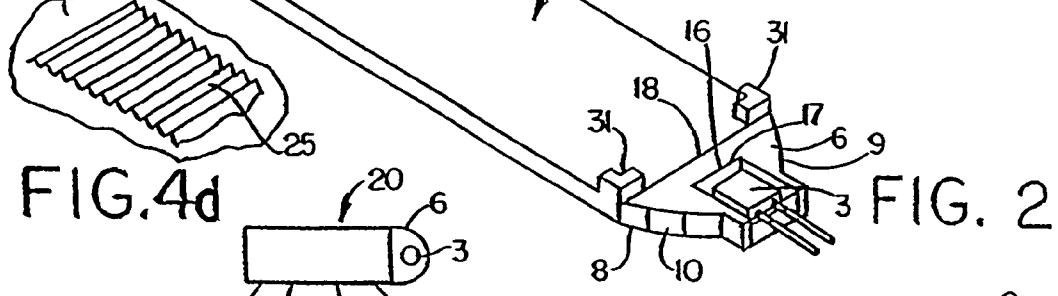


FIG. 2

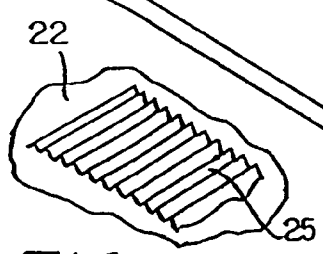


FIG. 4d

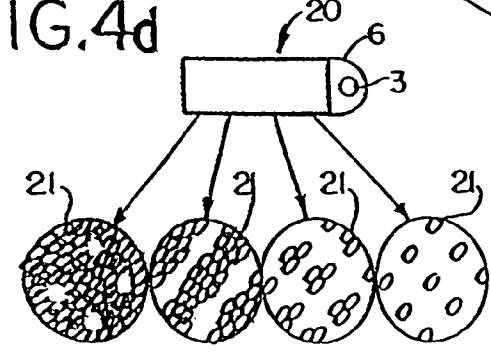


FIG. 4a

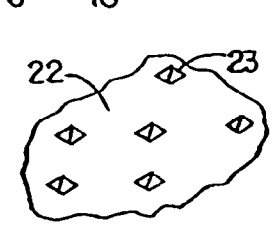


FIG. 4b

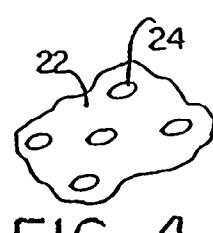


FIG. 4c

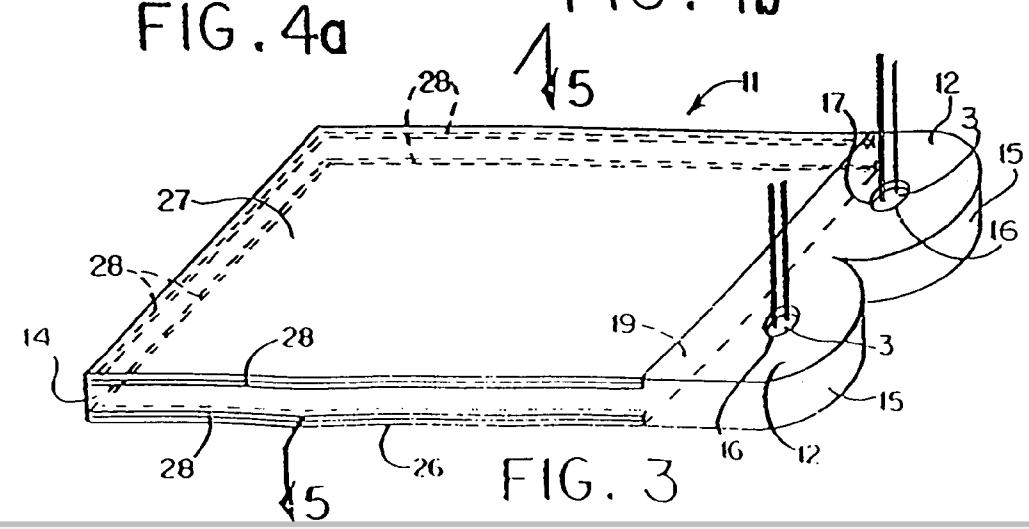
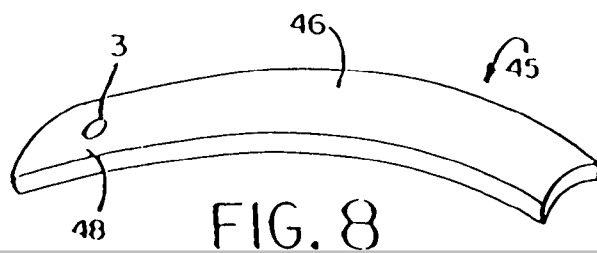
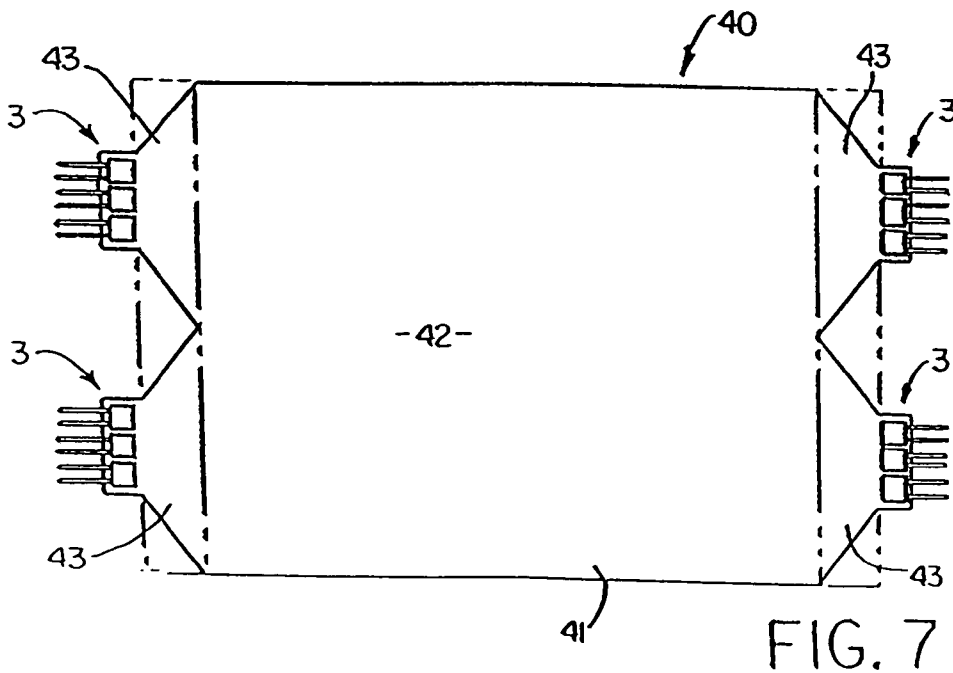
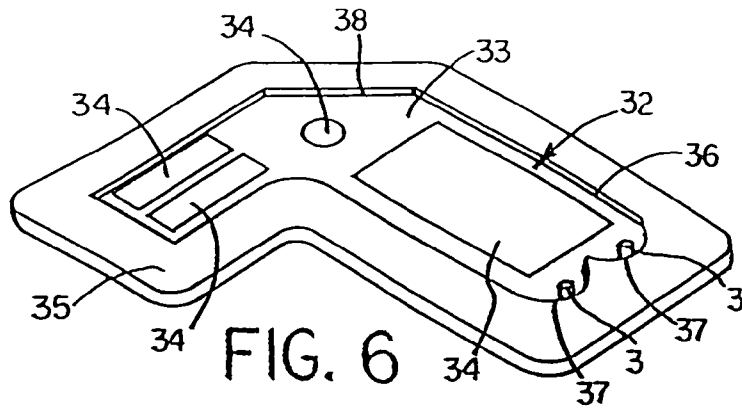
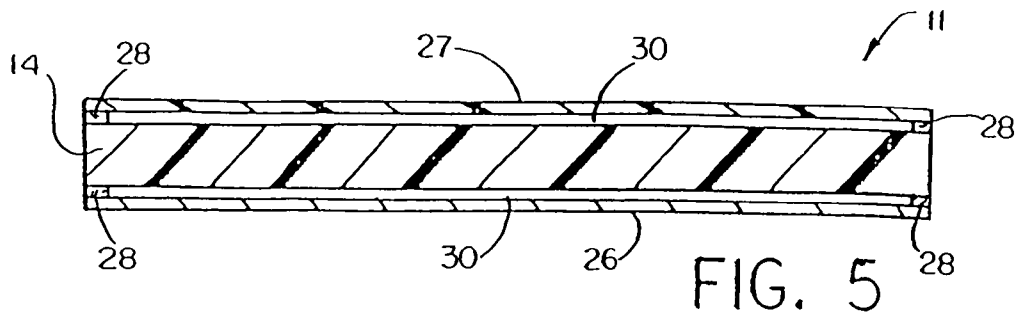
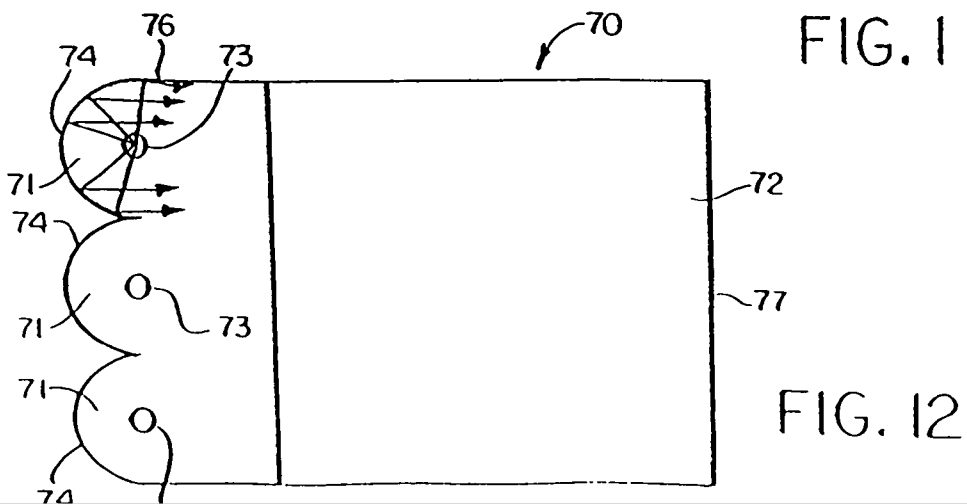
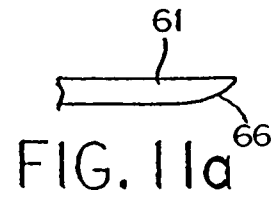
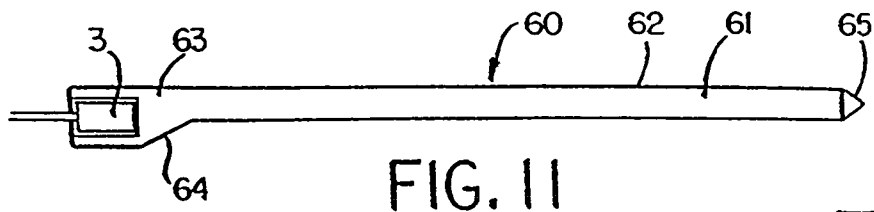
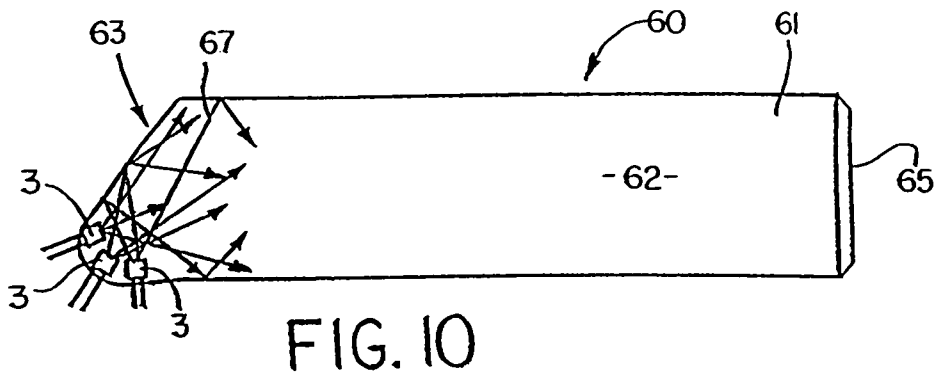
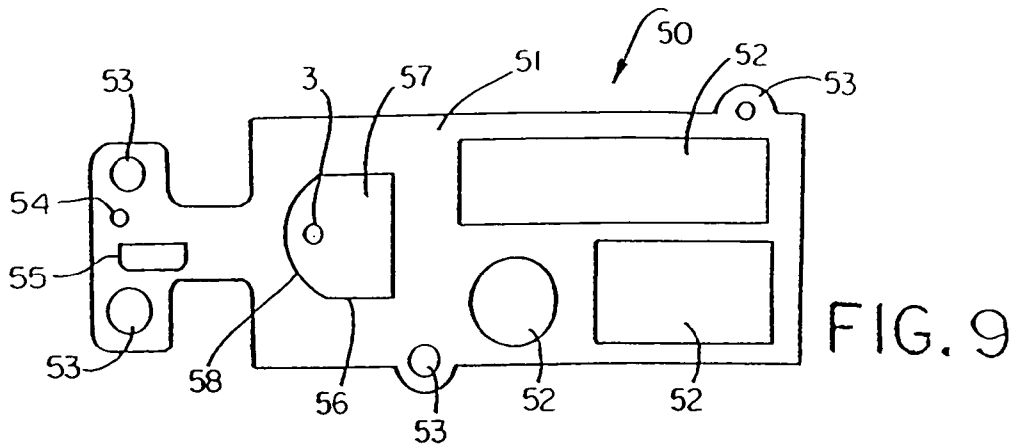


FIG. 3





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