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Pelka et al.

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(54) **LIGHTING APPARATUS HAVING LOW PROFILE**

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(51) **Int. Cl.**⁷ **G02B 6/00**

(52) **U.S. Cl.** **385/146; 385/901; 365/555**

(58) **Field of Search** **362/555, 559, 362/560, 561; 385/146, 901, 14**

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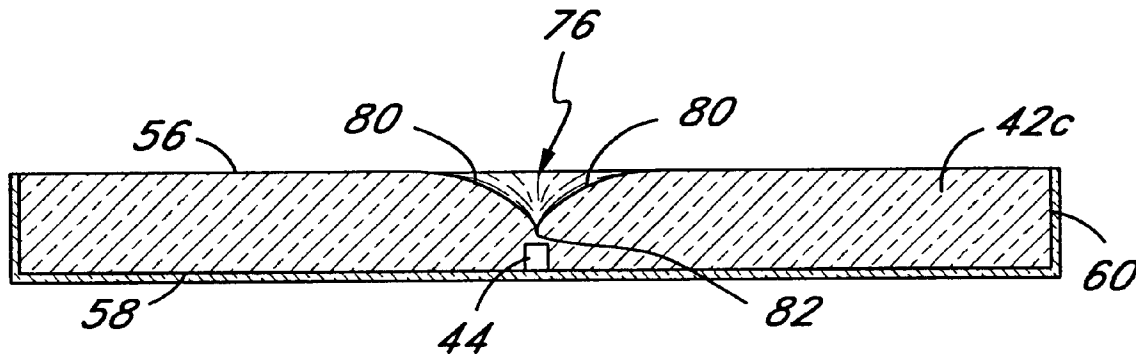
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(57) **ABSTRACT**

Disclosed is a low profile lighting apparatus that is particularly advantageous for use as a backlight for illuminating a display. The lighting apparatus includes a waveguide coupled to a light source for injecting light into the waveguide. The waveguide includes a plurality of elongate structures for ejecting light propagating within the waveguide through a predetermined surface of the waveguide. Another embodiment of the waveguide includes a central region of reduced thickness that redirects light propagating within the waveguide. The lighting apparatus has a low profile so it is particularly useful in areas of limited space.

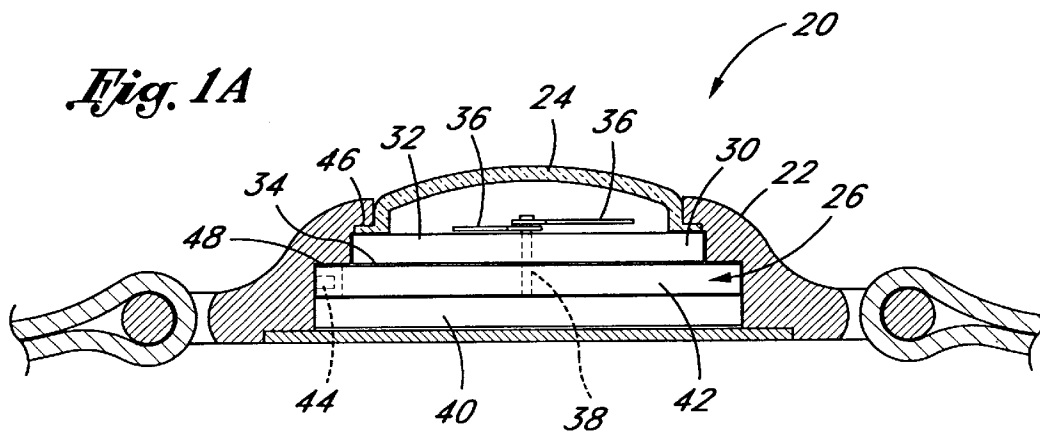
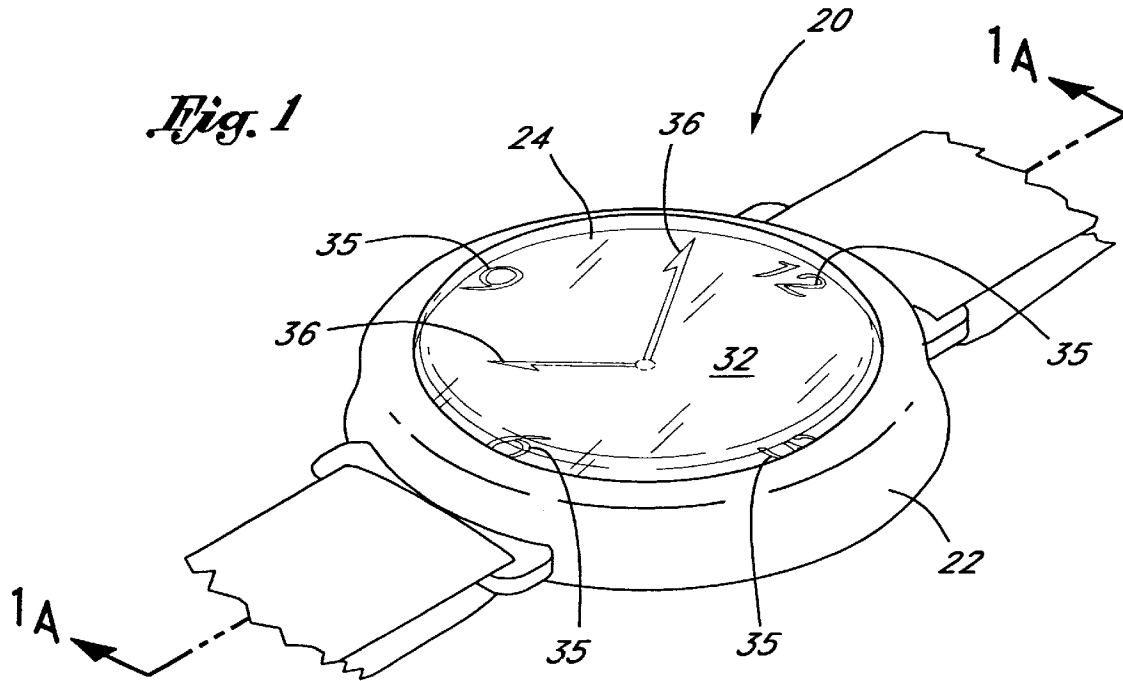
48 Claims, 13 Drawing Sheets

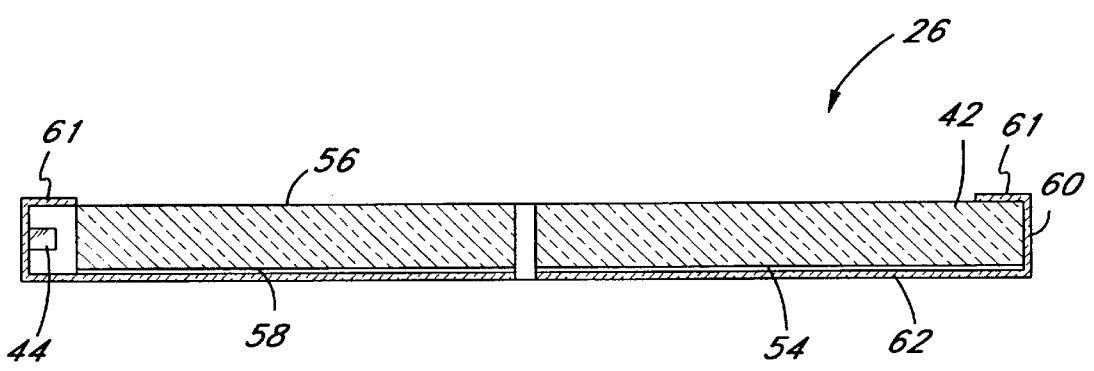
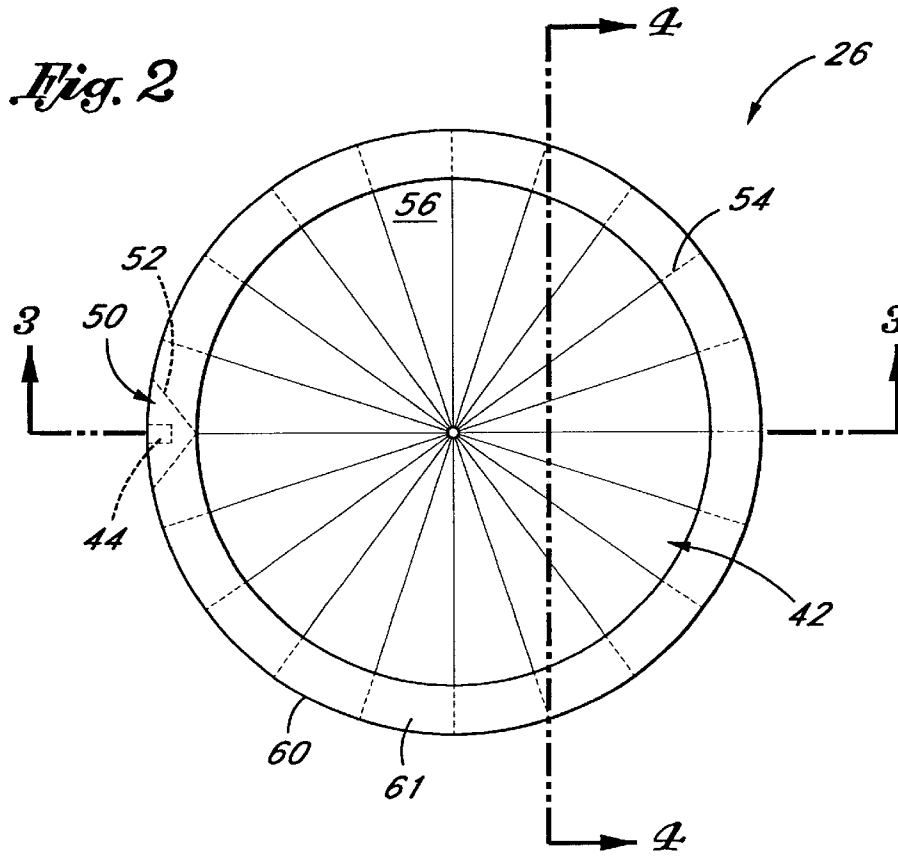


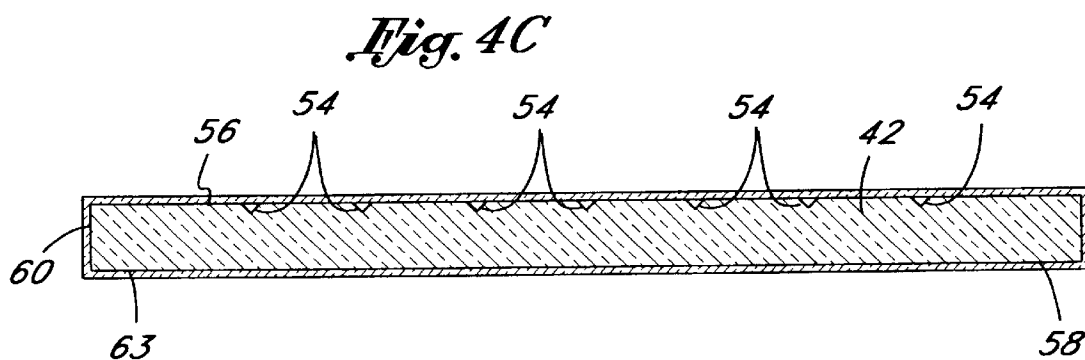
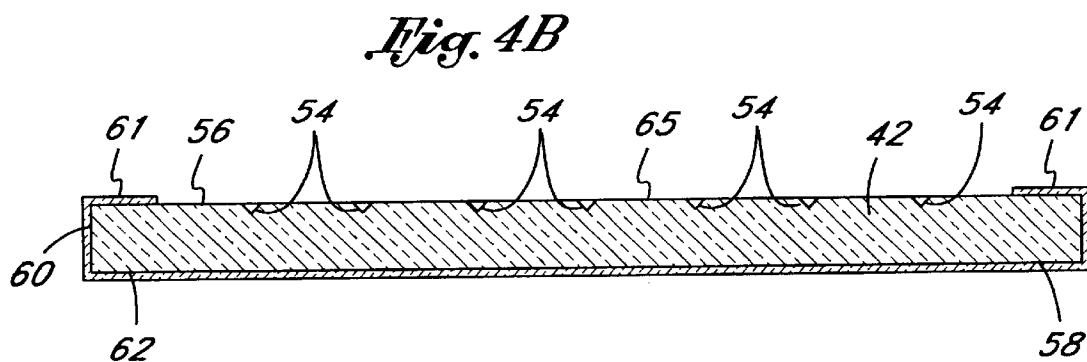
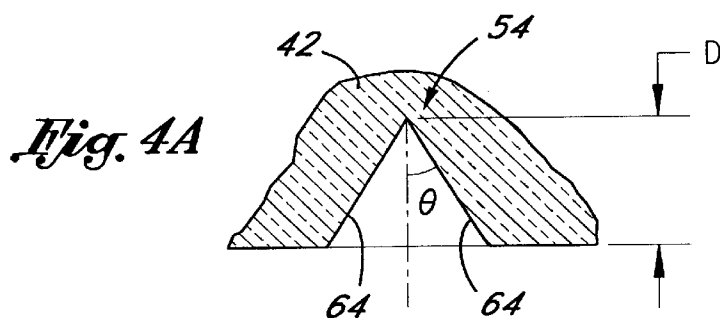
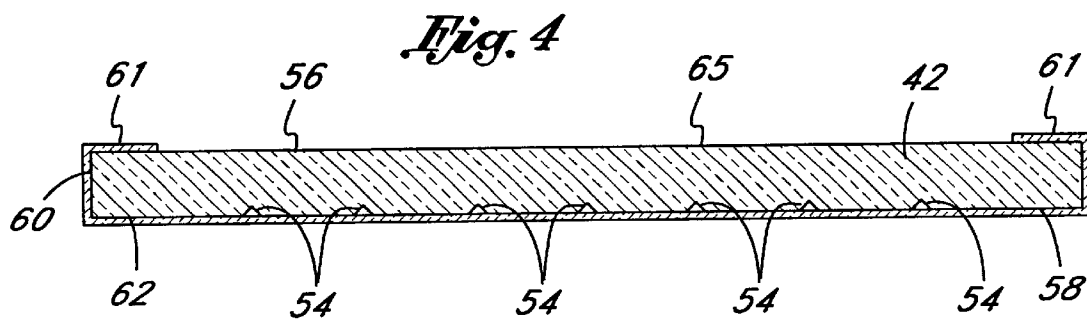
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