

**United States Patent** [19]  
**Hopper**

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 [45] **Date of Patent:** **Oct. 31, 1989**

[54] **TOUCH SENSITIVE INDICATING LIGHT**  
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 307/116; 361/174; 340/706; 250/221;  
 R; 341/31  
 [58] **Field of Search** ..... 357/17, 25, 26, 72,  
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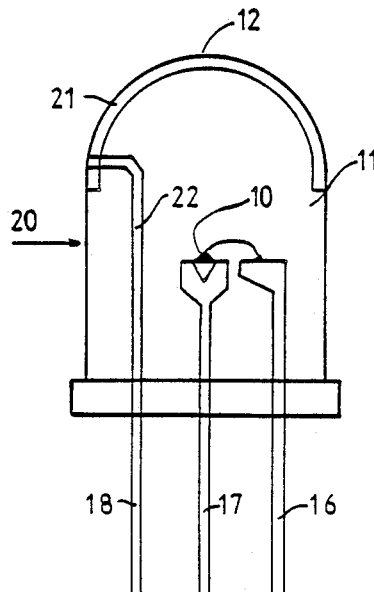
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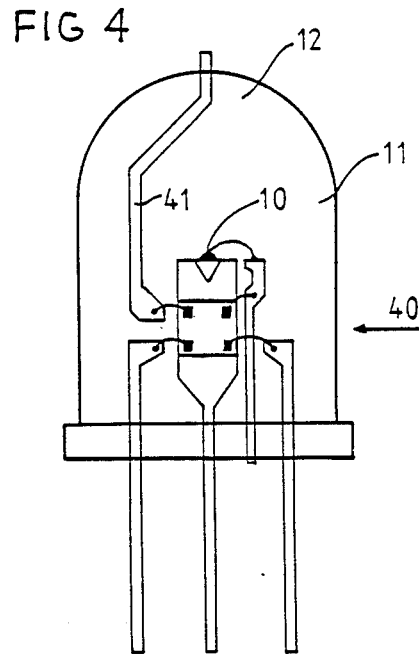
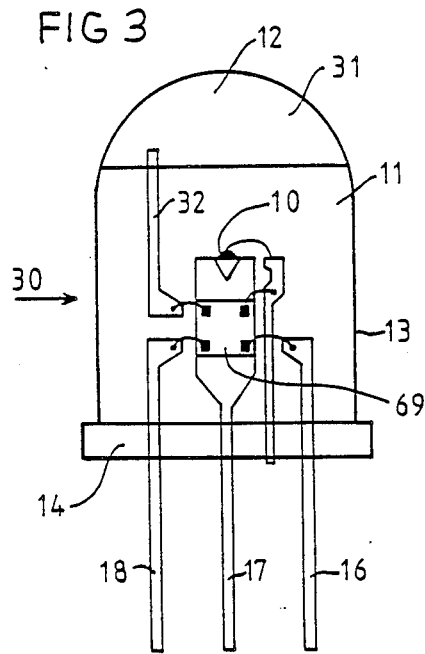
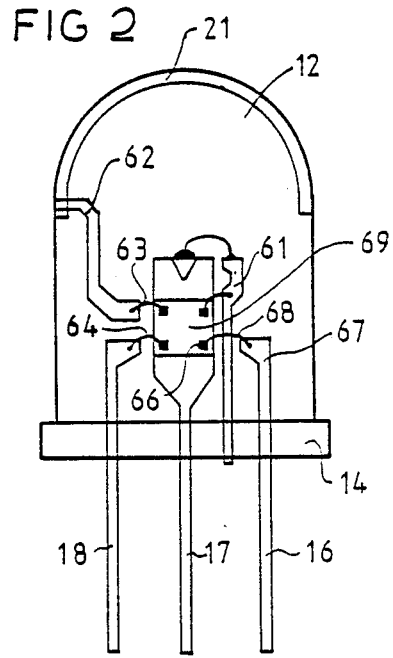
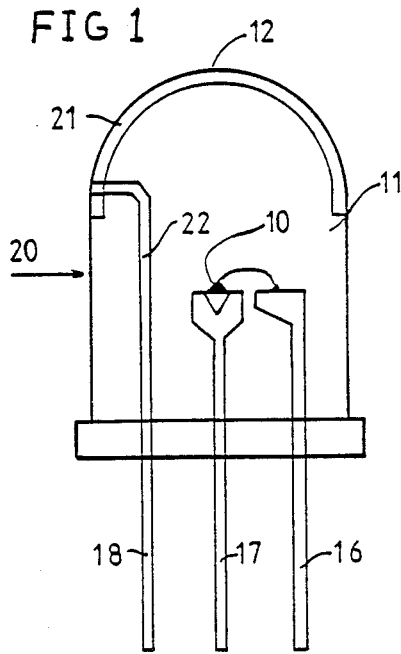
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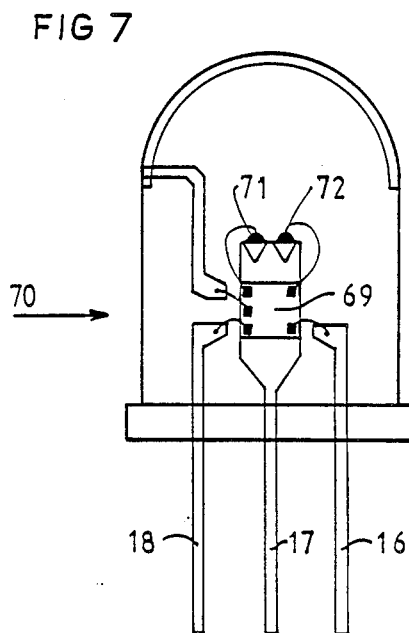
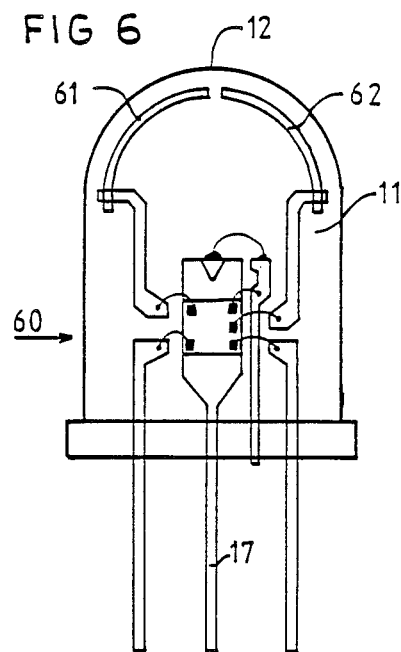
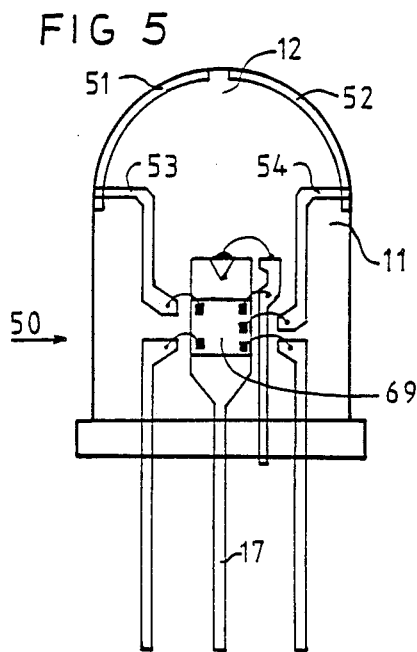
*Primary Examiner*—Rolf Hille  
*Assistant Examiner*—Steven Ho Yin Loke  
*Attorney, Agent, or Firm*—Larson & Taylor

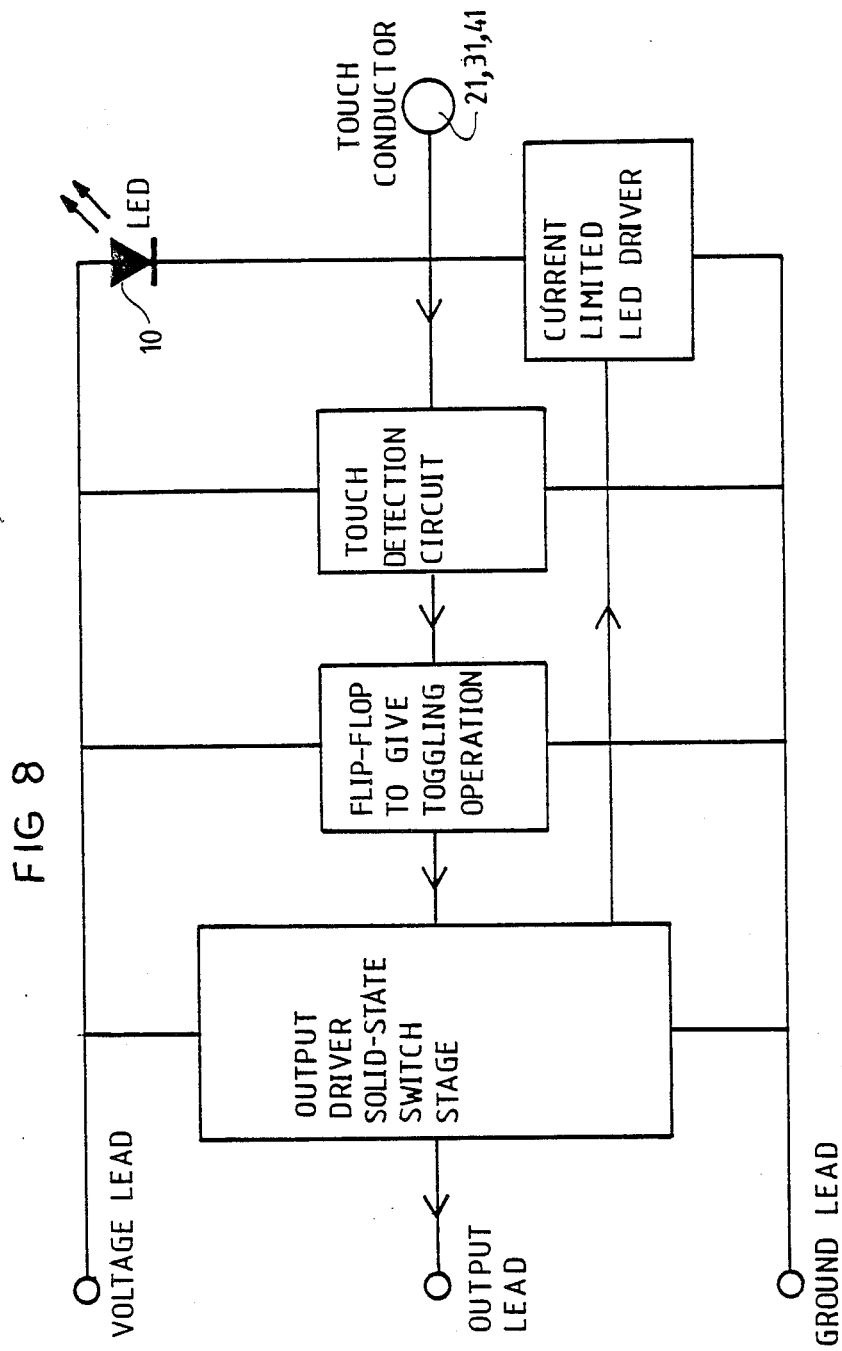
[57] **ABSTRACT**  
 A touch sensitive light emitting diode comprising a diode (10) encapsulated in a plastics dome (11) and externally operable touch sensitive switching means positioned within the dome, the switching means including an output (18) to external electronics and the diode providing visual indication of the state of the switching means. The switching means may be a resistive touch switch, a voltage detection touch switch, a capacitance detection touch switch, or a proximity detection touch switch. The switching means may also be in the form of a stress/strain sensitive element (130) or a light sensitive element (71) positioned within the dome (11) to detect an object or finger-tip in proximity to the dome. The light emitting diode may also include an integrated circuit (69) positioned within the dome (11).

**20 Claims, 6 Drawing Sheets**









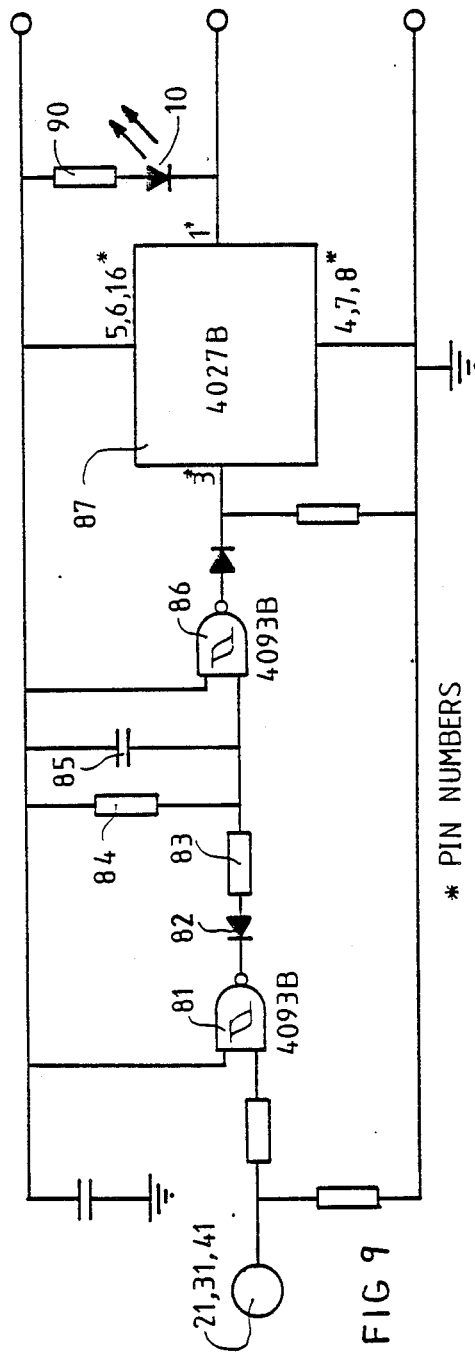


FIG 9

\* PIN NUMBERS

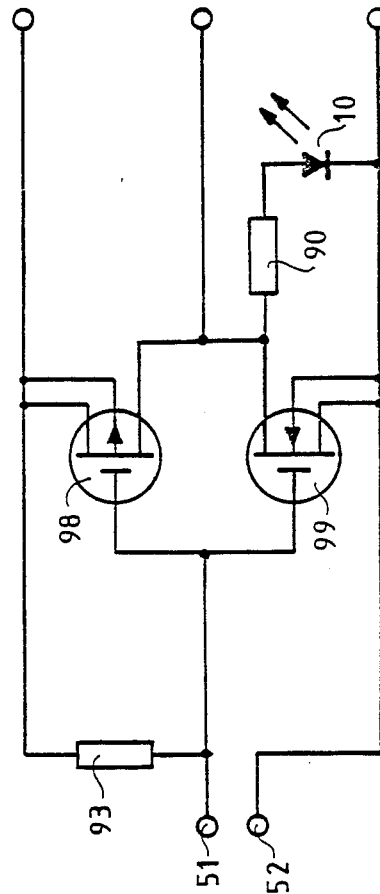


FIG 10

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