

- 1] LIGHT SOURCE HAVING A MULTIPLY CONIC LENS
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- 1] Appl. No.: 560,489
- 2] Filed: Jul. 23, 1990

Related U.S. Application Data

- 3] Continuation of Ser. No. 253,997, Oct. 15, 1988, abandoned.
- 1] Int. Cl.⁵ G02B 3/04
- 2] U.S. Cl. 350/435; 362/326; 362/800
- 3] Field of Search 350/432, 433, 434, 435; 362/307, 308, 309, 326, 333, 800

- [56] **References Cited**
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[57] **ABSTRACT**

A lens for a light emitting diode (LED) lamp is formed as two ellipses rather than as one. The ellipses are axially symmetric and are translated away from the optical axis with each ellipse having a focus located on the LED chip away from the central bond pad so that the bond pad shadow does not decrease on-axis light intensity. In alternative embodiments, the depression located at the intersection of the two ellipses is flattened and the axes of the two ellipses are translated away from the optical axis and are also tilted.

26 Claims, 6 Drawing Sheets

