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**Tyson**

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- (54) **MULTIFOCAL CONTACT LENS**
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5,181,053 A \* 1/1993 Brown ..... 351/161  
 5,517,260 A \* 5/1996 Glady et al. .... 351/169  
 6,390,622 B1 \* 5/2002 Muckenhirn et al. .... 351/161

\* cited by examiner

(\*) **Notice:** 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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(57) **ABSTRACT**

A multifocal contact lens includes a first, central zone for distance and intermediate vision and a second, outer zone for near vision. The first and second zones are conic sections joined tangentially at their junction. The power in the distance subregion is relatively constant, while the power throughout the intermediate subregion is a monotonically increasing function which reaches the near power correction at the junction. The second zone includes an aspheric surface having an eccentricity calculated to minimize or eliminate spherical aberration. The slope or power gradient in the intermediate subregion is calculated to provide a smooth transition from the lower power distance subregion to the junction between the intermediate subregion and the near power correction zone.

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- (52) **U.S. Cl.** ..... **351/161; 351/169**
- (58) **Field of Search** ..... **351/160 R, 161, 351/168, 169**

(56) **References Cited**  
**U.S. PATENT DOCUMENTS**

4,636,049 A \* 1/1987 Blaker ..... 351/161  
 4,752,123 A \* 6/1988 Blaker ..... 351/161

**16 Claims, 2 Drawing Sheets**

