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# United States Patent [19]

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**Brown**

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- [54] MULTI-FOCAL CONTACT LENS
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- [52] U.S. Cl. .... **351/161; 351/177**
- [58] Field of Search ..... **351/160 R, 160 H, 161, 351/162, 177**

- 4,859,049 8/1989 Muller ..... 351/161
- 4,861,152 8/1989 Vinzia et al. .... 351/161
- 4,883,350 11/1989 Muckenhirn ..... 351/160 R
- 4,890,912 1/1990 Visser ..... 351/161
- 4,890,913 1/1990 DeCarle ..... 351/161

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### [56] References Cited

#### U.S. PATENT DOCUMENTS

Re. 25,286	11/1962	DeCarle	.....	351/161
3,031,927	5/1962	Wesley	.....	351/161
3,037,425	6/1962	DeCarle	.....	351/161
3,279,878	10/1966	Long	.....	351/161
3,415,597	12/1968	Harman	.....	351/160 R
3,684,357	8/1972	Tsuetaki	.....	351/161
4,074,469	2/1978	Nuchman et al.	.....	51/217 L
4,199,231	4/1980	Evans	.....	351/160.14
4,418,991	12/1983	Breger	.....	351/161
4,508,436	4/1985	Sitterle	.....	351/161 X
4,525,043	6/1985	Bronstein	.....	351/161 X
4,580,882	4/1986	Nuchman et al.	.....	351/161
4,593,981	6/1986	Scilipoti	.....	351/161
4,636,049	1/1987	Blaker	.....	351/161
4,637,697	1/1987	Freeman	.....	351/161
4,640,595	2/1987	Volk	.....	351/160 R
4,655,565	4/1987	Freeman	.....	351/161 X
4,702,573	10/1987	Morstad	.....	351/161
4,752,123	6/1988	Blaker	.....	351/161
4,765,728	8/1988	Porat et al.	.....	351/161 X
4,813,777	3/1989	Rainville et al.	.....	351/161

### [57] ABSTRACT

A tool for forming a soft contact lens having an optical zone formed with a center spherical surface and surrounding aspheric surfaces is disclosed. The tool includes a lens holder having a perfectly centered rearwardly extending cylindrical portion received in a collet of a lens cutting lathe and a transverse front end wall defining a front end opening receiving the lens blank body projecting forwardly through the opening. The lens blank is formed with a mounting flange seated against a rear facing step in the transverse end wall. The lens body is retained in the holder with an insert threadedly received in the holder. A set screw received in the insert applies pressure to the lens blank rear surface to deform the front concave surface which has been previously cut and polished to a spherical surface. The deformed front concave surface is re-cut into spherical shape in at least preselected portions of the front surface so that, upon release of squeezing pressure, the preselected portions of the front surface are aspheric to define portions of the optical zone having continuously variable optical powers. The center of the optical zone preferably remains spherical for improved night vision.

**7 Claims, 2 Drawing Sheets**

