

- [54] MULTIFOCAL LENS
- [75] Inventor: John Talley Winthrop, Wellesley, Mass.
- [73] Assignee: American Optical Corporation, Southbridge, Mass.
- [21] Appl. No.: 638,870
- [22] Filed: Dec. 8, 1975

3,910,691 10/1975 Maitenaz 351/169

Primary Examiner—David H. Rubin
 Attorney, Agent, or Firm—Howard R. Berkenstock, Jr.

Related U.S. Application Data

- [63] Continuation-in-part of Ser. No. 389,044, Aug. 16, 1973, abandoned.
- [51] Int. Cl.² G02C 7/06
- [52] U.S. Cl. 351/171; 351/169
- [58] Field of Search 351/168-172, 351/176, 177

References Cited

U.S. PATENT DOCUMENTS

1,271,356	7/1918	Paige	351/171
1,351,785	9/1920	Paige	351/168
1,588,559	6/1926	Tillyer	351/176
2,743,649	5/1956	Phillips	351/171
2,847,804	8/1958	Calkins et al.	351/177 X
2,869,422	1/1959	Maitenaz	351/169
2,878,721	3/1959	Kanolt	351/169
3,687,528	8/1972	Maitenaz	351/169
3,711,191	1/1973	Tagnon	351/169
3,785,724	1/1974	Maitenaz	351/169

[57] **ABSTRACT**
 A multifocal ophthalmic lens is described on which one refractive surface is formed to provide a plurality of vertically juxtaposed viewing zones each of which has constant dioptric focal power. The constant dioptric focal power in the various zones increases successively from top to bottom of the multifocal ophthalmic lens. The refractive surface in the zones other than the viewing zone having the lowest focal power at the top of the lens is divided into a plurality of laterally disposed areas. In those areas near the periphery of the lens, the lens is provided with an aspheric surface formed from sections of a figure of revolution such that the principal axes of astigmatism lie in vertical and horizontal planes so that a wearer of the multifocal ophthalmic lens continues to perceive horizontal lines as being horizontal and vertical lines as being vertical and unbroken. However, the height of the ledge which exists between the various zones is restricted to a minimum height over the entire width of the lens which may then be blended during the manufacturing process into the adjacent viewing zones such that the dividing lines between the various viewing zones are rendered invisible.

10 Claims, 28 Drawing Figures

