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Blum et al.

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(54) **ELECTRO-ACTIVE OPHTHALMIC LENS
HAVING AN OPTICAL POWER BLENDING
REGION**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 23 days.

This patent is subject to a terminal dis-
claimer.

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,437,642 A 3/1948 Henroteau
2,576,581 A 11/1951 Edwards

(Continued)

FOREIGN PATENT DOCUMENTS

CN 89113088 10/2001
DE 4223395 1/1994

(Continued)

OTHER PUBLICATIONS

Bosshard, "Organic Nonlinear Optical Materials", Jan. 1, 1995,
Gordon & Breach Publishers, Amsterdam.

(Continued)

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(57) **ABSTRACT**

A spectacle lens is disclosed. The disclosed lens provides a
vision correcting area for the correction of a wearer's refrac-
tive error. The viewing correction area provides correction for
non-conventional refractive error to provide at least a part of
the wearer's vision correction. The lens has a prescription
based on a wave front analysis of the wearer's eye and the lens
can further be modified to fit within an eyeglass frame.

17 Claims, 18 Drawing Sheets

