



(12) **United States Patent**  
**Wei**

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(54) **RETINAL TRACKING ASSISTED OPTICAL COHERENCE TOMOGRAPHY**

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(57) **ABSTRACT**

One embodiment of the present invention is an optical coherence tomography (“OCT”) application apparatus that performs an OCT application on an object. The OCT application apparatus includes: (a) an OCT scanning apparatus which outputs a beam of OCT scanning radiation; (b) an active tracking system that generates and projects a beam of tracking radiation onto a region including a reference tracking feature, which active tracking system includes a tracking optical system that is disposed to intercept the beam of tracking radiation and the beam of OCT scanning radiation; and (c) wherein the active tracking system analyzes tracking radiation reflected from the region to detect movement of the object, and to generate a tracking signal which directs the tracking optical system to follow the movement of the object. In one embodiment of the present invention, the OCT application comprises forming an OCT scan image of the object, for example and without limitation, a retina of an eye.

**44 Claims, 3 Drawing Sheets**

