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Erskine

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[54] **WHITE LIGHT VELOCITY INTERFEROMETER**

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[*] Notice: This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

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[51] **Int. Cl.**[6] **G01B 9/02**

[52] **U.S. Cl.** **356/345**; 356/28.5; 356/358

[58] **Field of Search** ..... 356/28.5, 357, 356/432 T, 345, 358; 73/655, 657

[56] **References Cited**

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[57] **ABSTRACT**

The invention is a technique that allows the use of broadband and incoherent illumination. Although denoted white light velocimetry, this principle can be applied to any wave phenomenon. For the first time, powerful, compact or inexpensive sources can be used for remote target velocimetry. These include flash and arc lamps, light from detonations, pulsed lasers, chirped frequency lasers, and lasers operating simultaneously in several wavelengths. The technique is demonstrated with white light from an incandescent source to measure a target moving at 16 m/s.

87 Claims, 14 Drawing Sheets