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# United States Patent [19]

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Erskine

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## [54] WHITE LIGHT VELOCITY INTERFEROMETER

[75] Inventor: David J. Erskine, Oakland, Calif.

[73] Assignee: The Regents of the University of California, Oakland, Calif.

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[58] Field of Search ..... 356/28.5, 345, 356/358, 349

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Primary Examiner—Frank Gonzalez

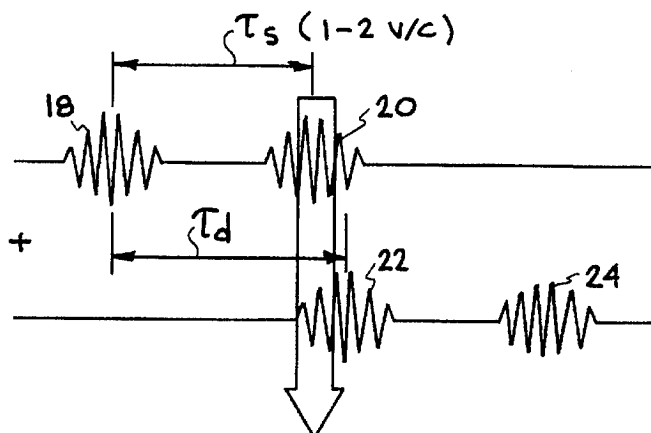
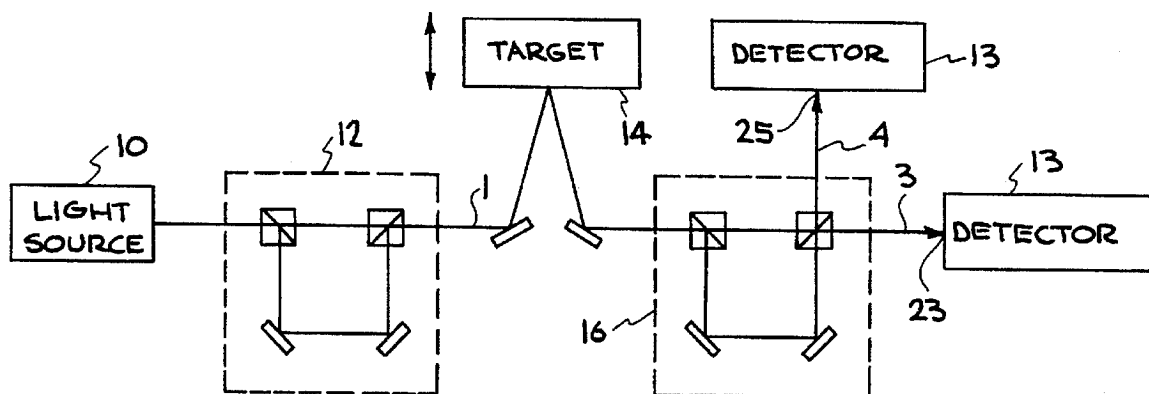
Assistant Examiner—Robert Kim

Attorney, Agent, or Firm—Henry P. Sartorio; John P. Wooldrige

### [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.

24 Claims, 14 Drawing Sheets



CONSTRUCTIVE OR DESTRUCTIVE INTERFERENCE