



US 20120140243A1

(19) **United States**

(12) **Patent Application Publication**
Colonna de Lega

(10) **Pub. No.: US 2012/0140243 A1**

(43) **Pub. Date: Jun. 7, 2012**

(54) **NON-CONTACT SURFACE CHARACTERIZATION USING MODULATED ILLUMINATION**

Publication Classification

(51) **Int. Cl.**
G01B 11/24 (2006.01)
(52) **U.S. Cl.** **356/609**

(75) **Inventor: Xavier M. Colonna de Lega,**
Middlefield, CT (US)

(57) **ABSTRACT**

(73) **Assignee: Zygo Corporation,** Middfield, CT (US)

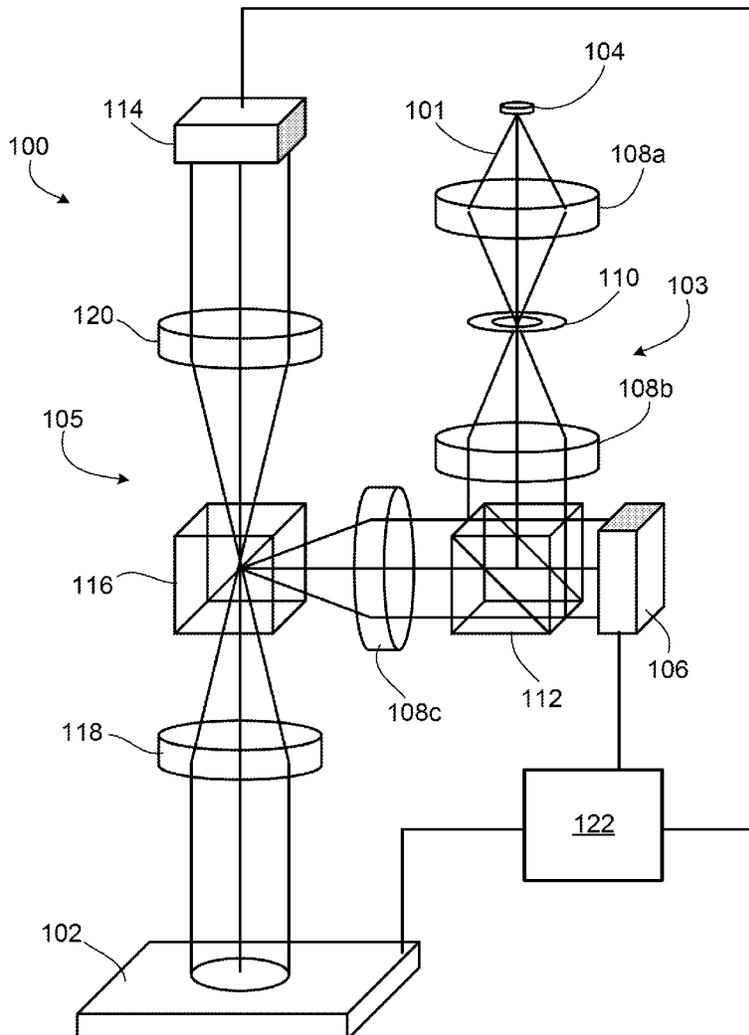
Methods for forming a three-dimensional image of a test object include directing light to a surface of best-focus of an imaging optic, where the light has an intensity modulation in at least one direction in the surface of best-focus, scanning a test object relative to the imaging optic so that a surface of the measurement object passes through the surface of best-focus of the imaging optic as the test object is scanned, acquiring, for each of a series of positions of the test object during the scan, a single image of the measurement object using the imaging optic, in which the intensity modulation of the light in the surface of best-focus is different for successive images, and forming a three-dimensional image of the test object based on the acquired images.

(21) **Appl. No.: 13/309,244**

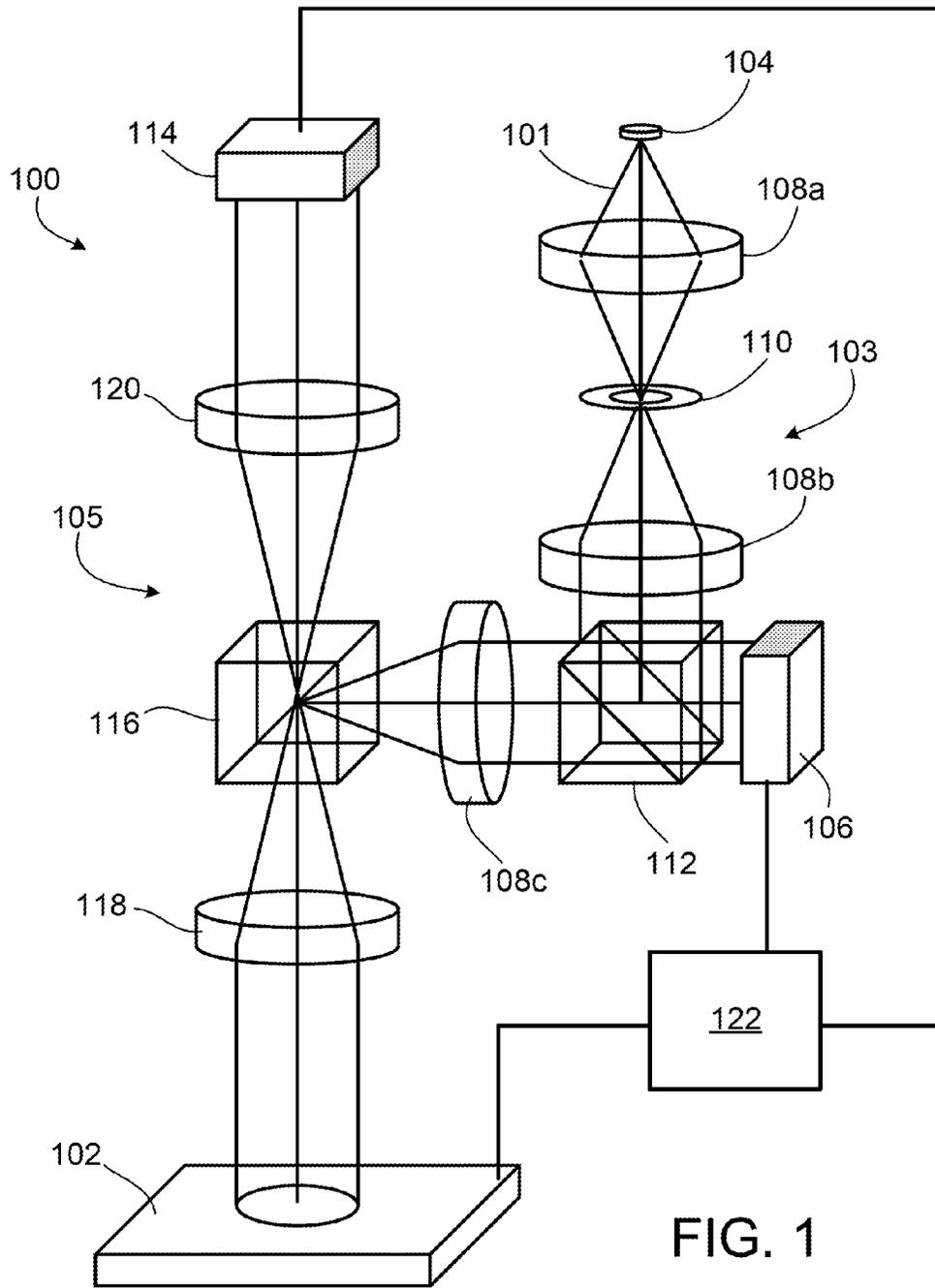
(22) **Filed: Dec. 1, 2011**

Related U.S. Application Data

(60) Provisional application No. 61/419,386, filed on Dec. 3, 2010.



Align Ex. 1017



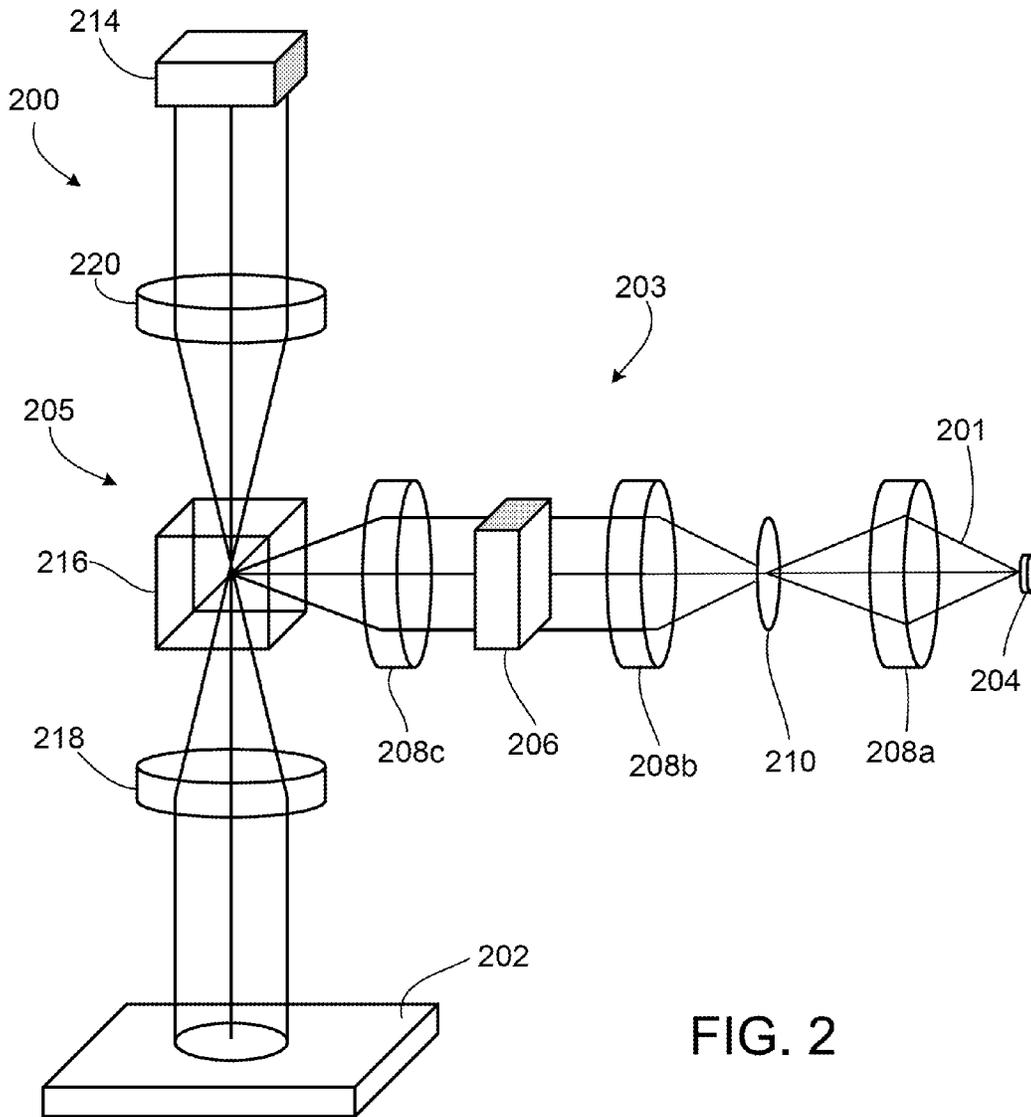


FIG. 2

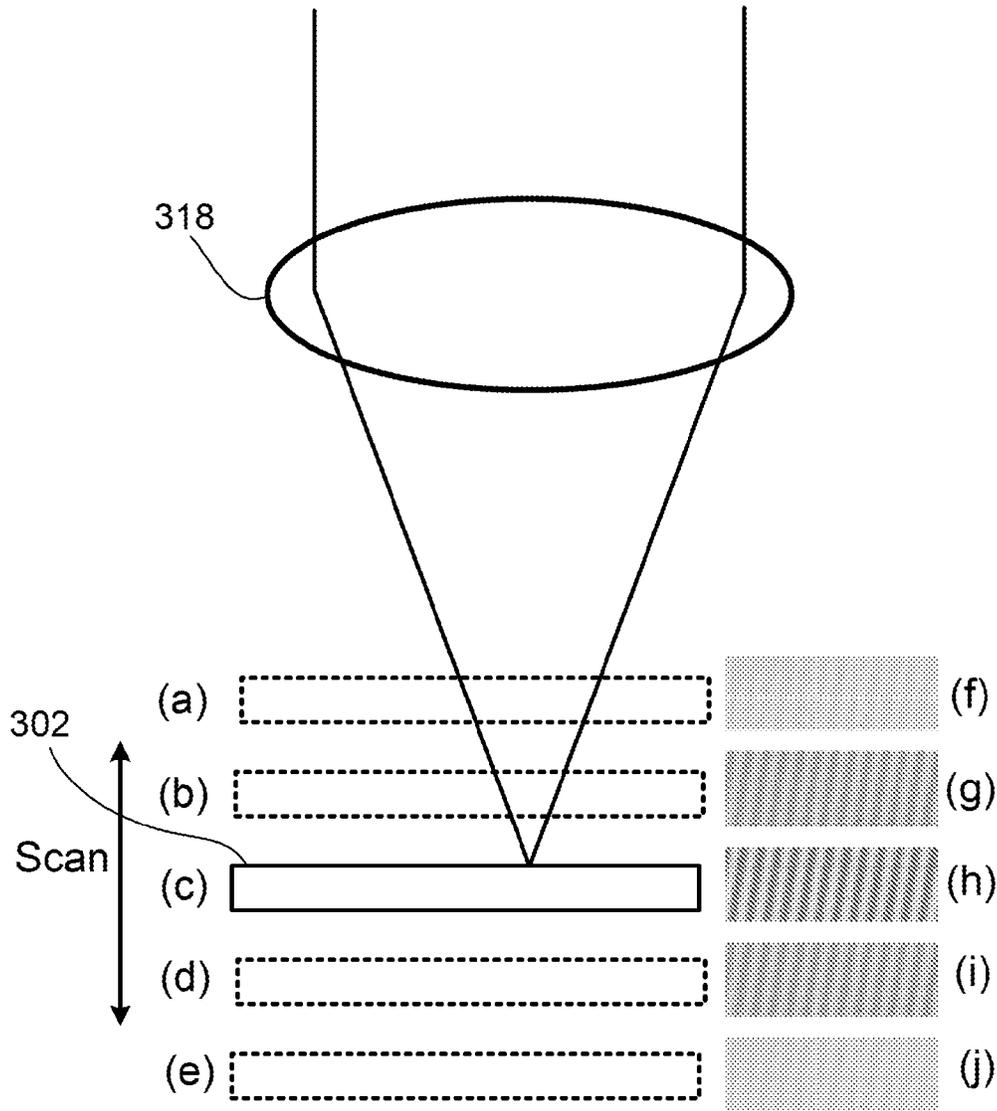


FIG. 3

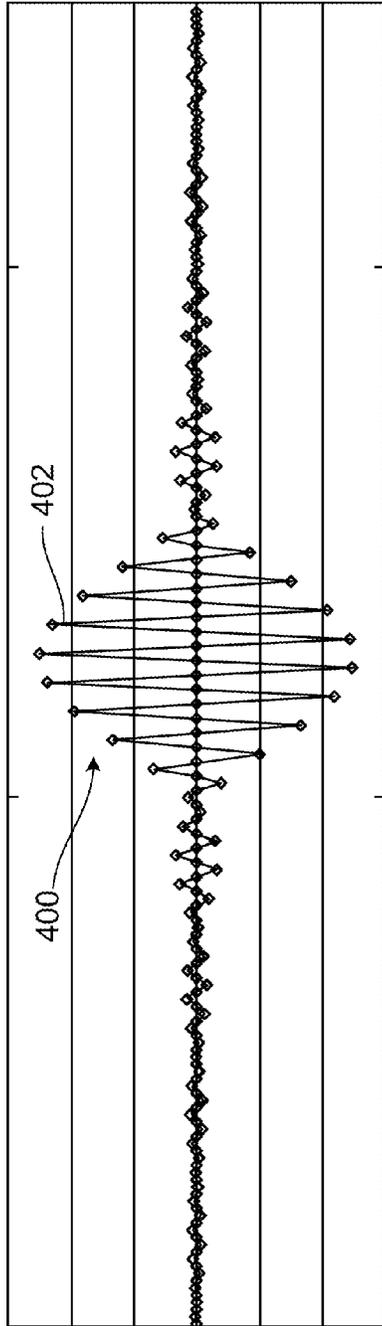


FIG. 4

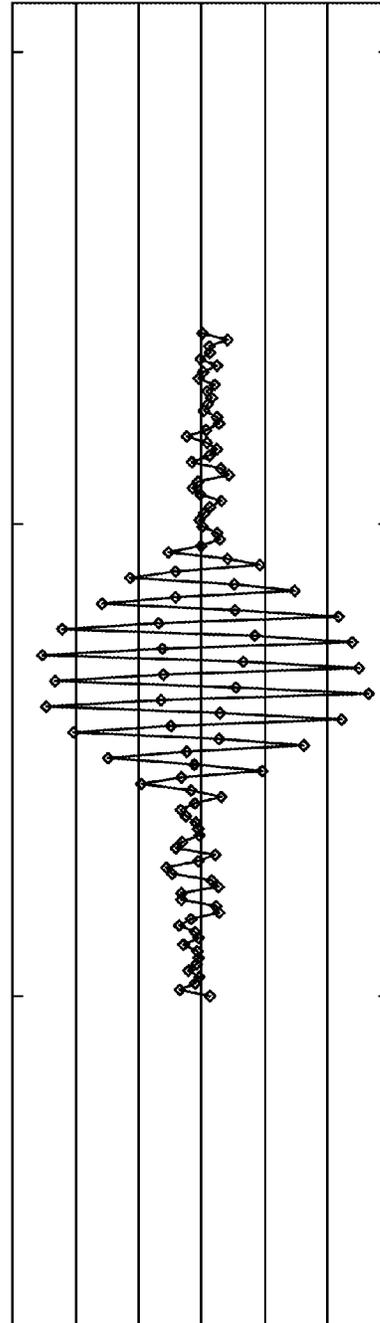


FIG. 5

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