



US 20110080576A1

(19) **United States**

(12) **Patent Application Publication**
Thiel et al.

(10) **Pub. No.: US 2011/0080576 A1**

(43) **Pub. Date: Apr. 7, 2011**

(54) **DEVICE AND METHOD FOR OPTICAL 3D MEASUREMENT AND FOR COLOR MEASUREMENT**

(30) **Foreign Application Priority Data**

Apr. 3, 2008 (DE) 10 2008 017 481.5

Publication Classification

(75) Inventors: **Frank Thiel, Ober-Ramstadt (DE); Peter Fornoff, Reichelsheim (DE)**

(51) **Int. Cl.**
G01N 21/00 (2006.01)

(73) Assignee: **SIRONA DENTAL SYSTEMS GMBH**

(52) **U.S. Cl.** **356/73**

(57) **ABSTRACT**

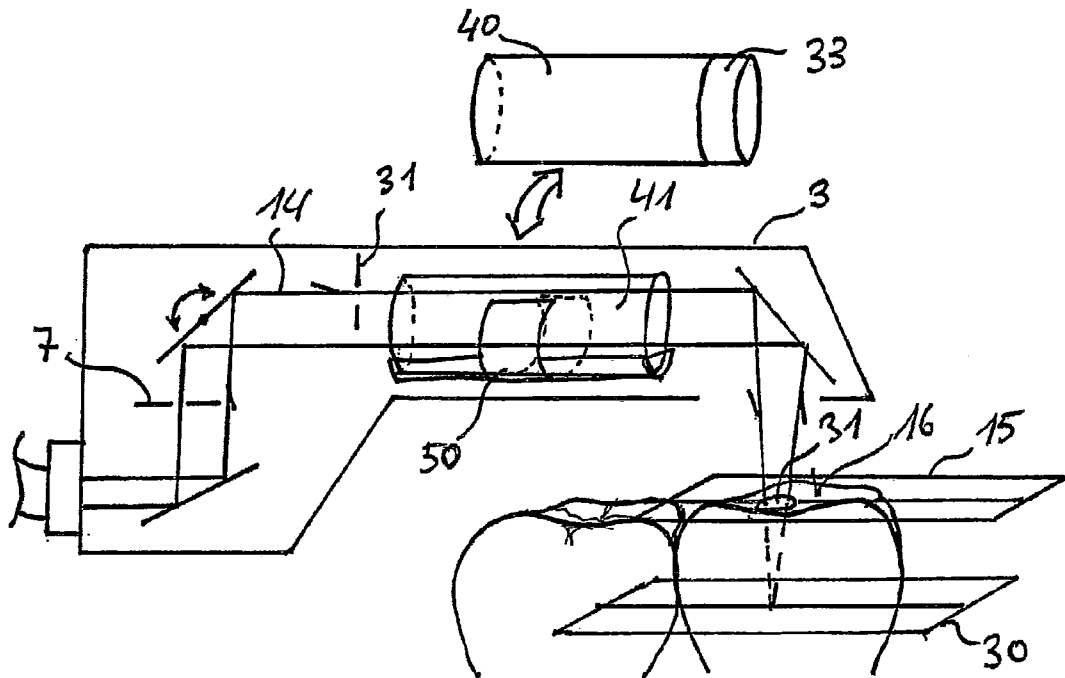
(21) Appl. No.: **12/896,435**

(22) Filed: **Oct. 1, 2010**

The invention relates to a device and a method for optical 3D measurement, wherein said device can be switched between a first mode for optical 3D measurement using a chromatic confocal measurement method or the triangulation measurement method and a second mode for colorimetric measurement. In the first mode, a broad-band illuminating beam is focused onto a first plane and in the second mode the broad-band illuminating beam is focused onto a second plane other than the first plane at a distance d from the surface of the object to be measured.

Related U.S. Application Data

(63) Continuation of application No. PCT/EP2009/053912, filed on Apr. 2, 2009.



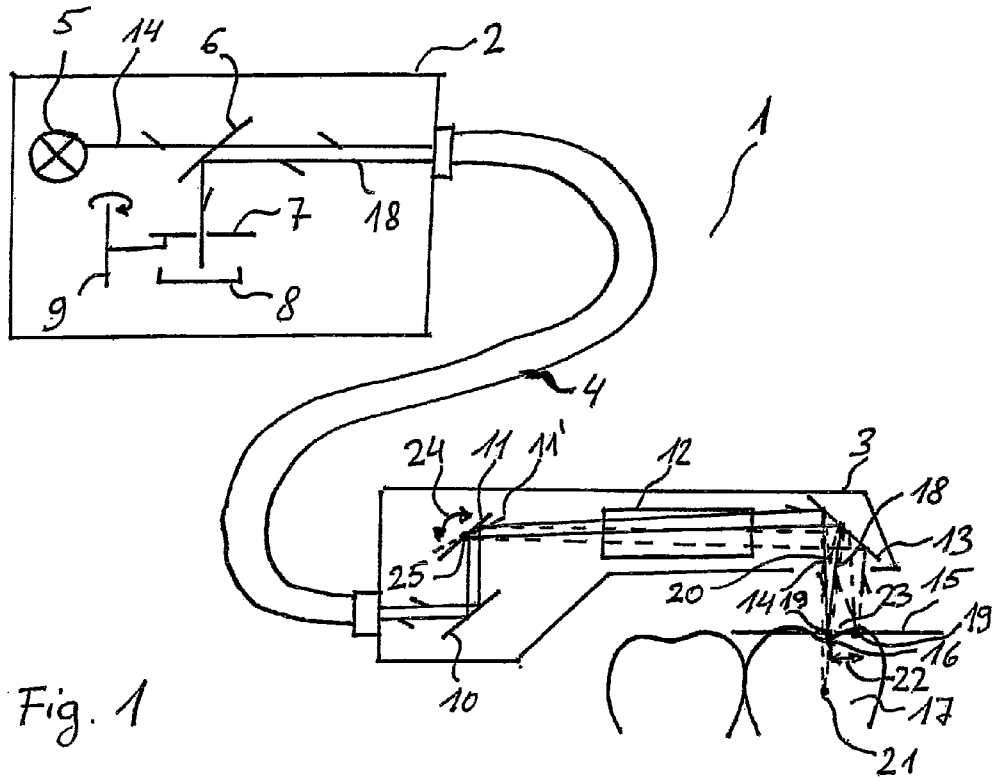


Fig. 1

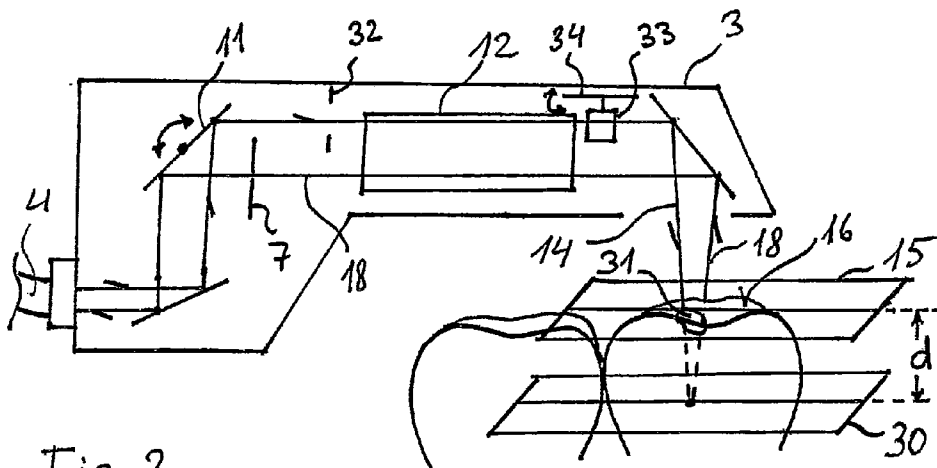
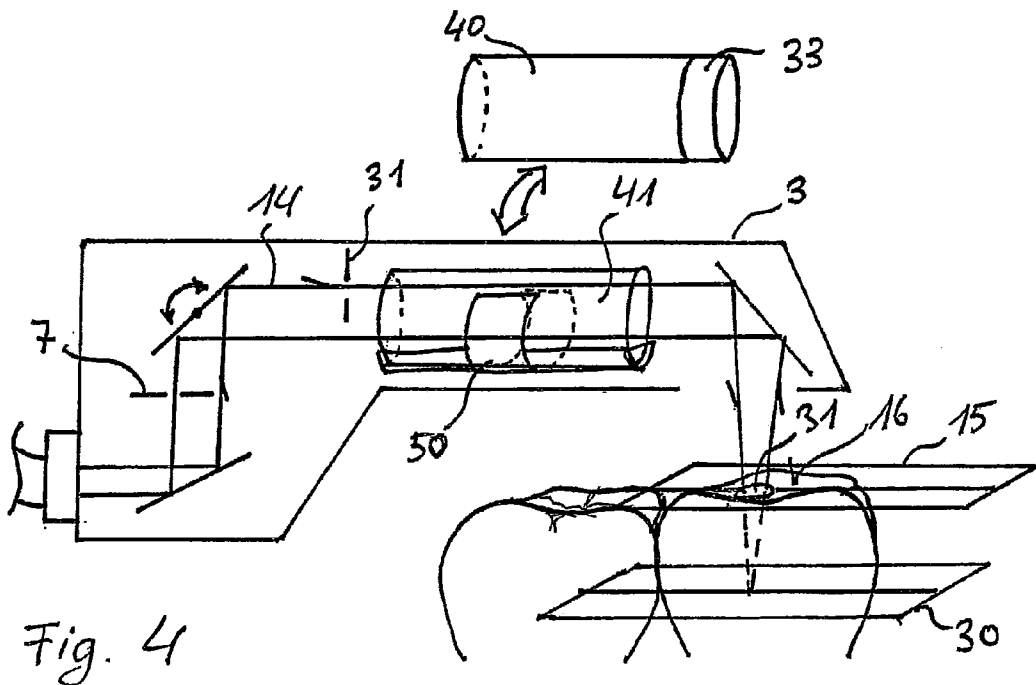
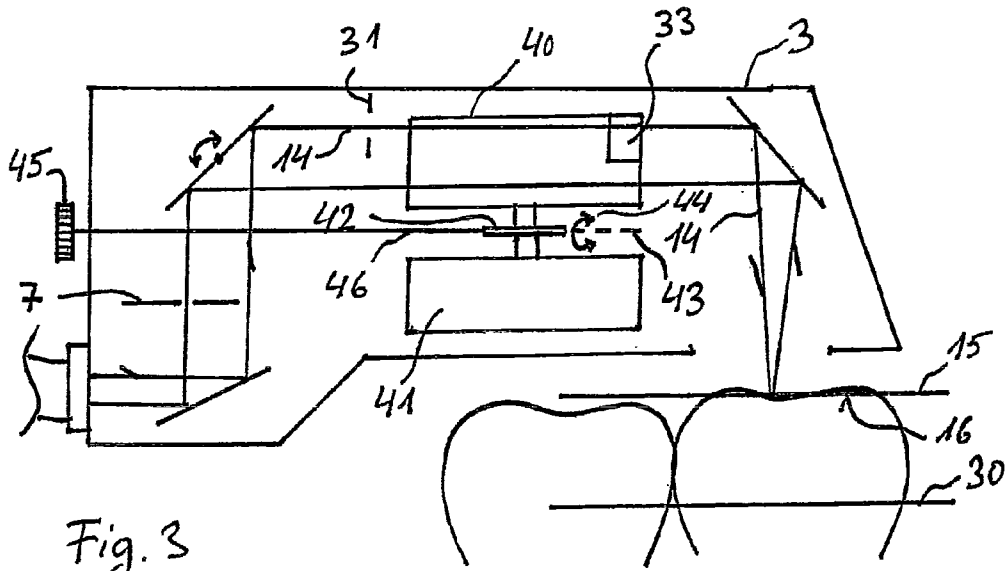
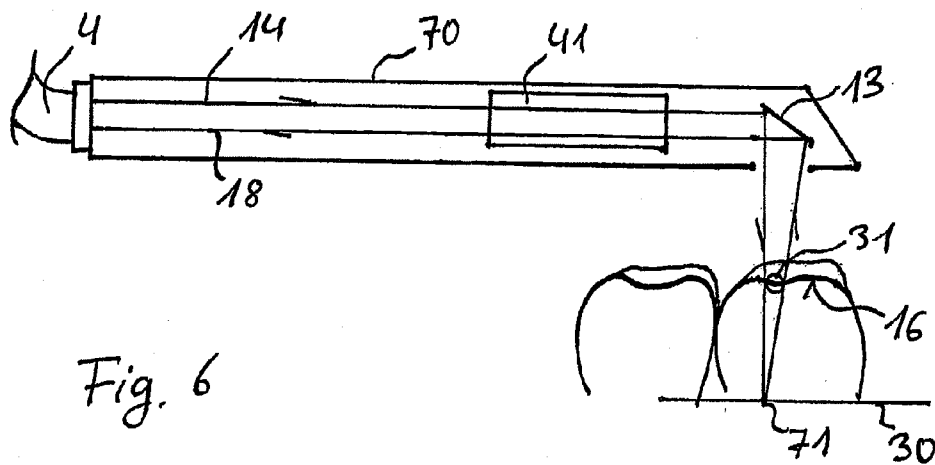
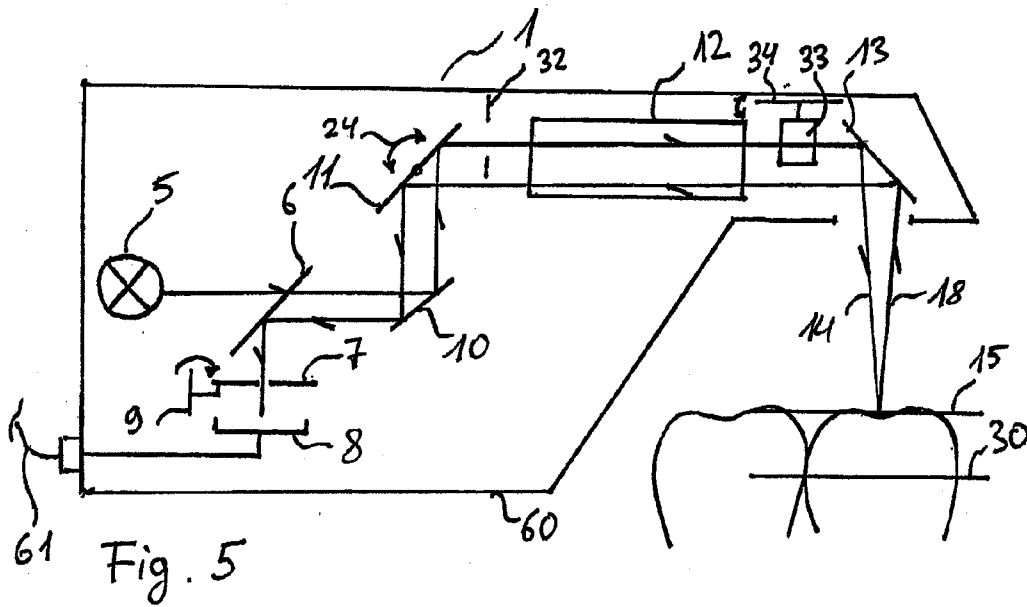


Fig. 2





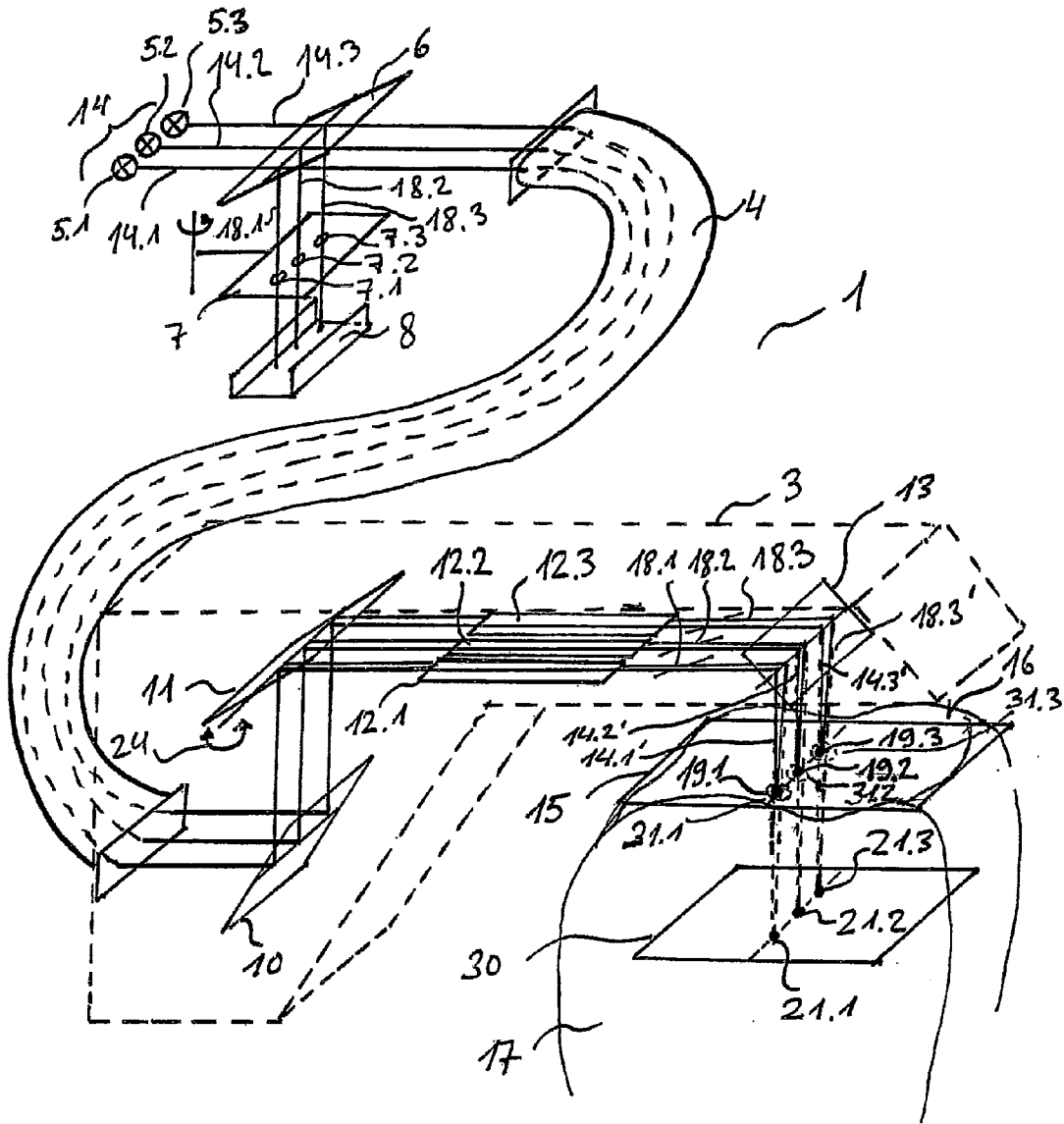


Fig. 7

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.