

(12) **United States Patent**  
**Esbech et al.**

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(54) **FOCUS SCANNING APPARATUS  
RECORDING COLOR**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 223 days.

(52) **U.S. Cl.**  
CPC ..... **A61C 9/0073** (2013.01); **A61C 9/006** (2013.01); **A61C 9/0066** (2013.01); **G01B 11/24** (2013.01);

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CPC .. **G01B 11/24; G01B 11/2509; G01B 11/2518**  
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(60) Provisional application No. 61/764,178, filed on Feb. 13, 2013.

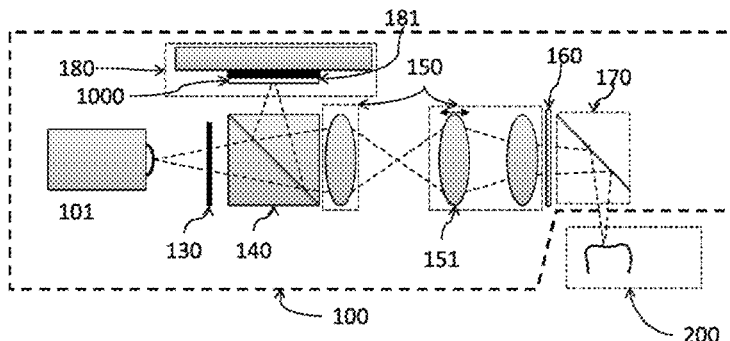
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(74) *Attorney, Agent, or Firm* — Buchanan Ingersoll & Rooney P.C.

(30) **Foreign Application Priority Data**  
Feb. 13, 2013 (DK) ..... 2013 70077

(57) **ABSTRACT**  
Disclosed are a scanner system and a method for recording surface geometry and surface color of an object where both surface geometry information and surface color information for a block of said image sensor pixels at least partly from one 2D image recorded by said color image sensor.

(51) **Int. Cl.**  
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**A61C 9/00** (2006.01)  
(Continued)

**35 Claims, 4 Drawing Sheets**



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|      | <b>G01J 3/50</b>  | (2006.01) |                 |        |               |
|      | <b>G01B 11/24</b> | (2006.01) |                 |        |               |

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- (58) **Field of Classification Search**  
 USPC ..... 250/226, 234; 348/47  
 See application file for complete search history.

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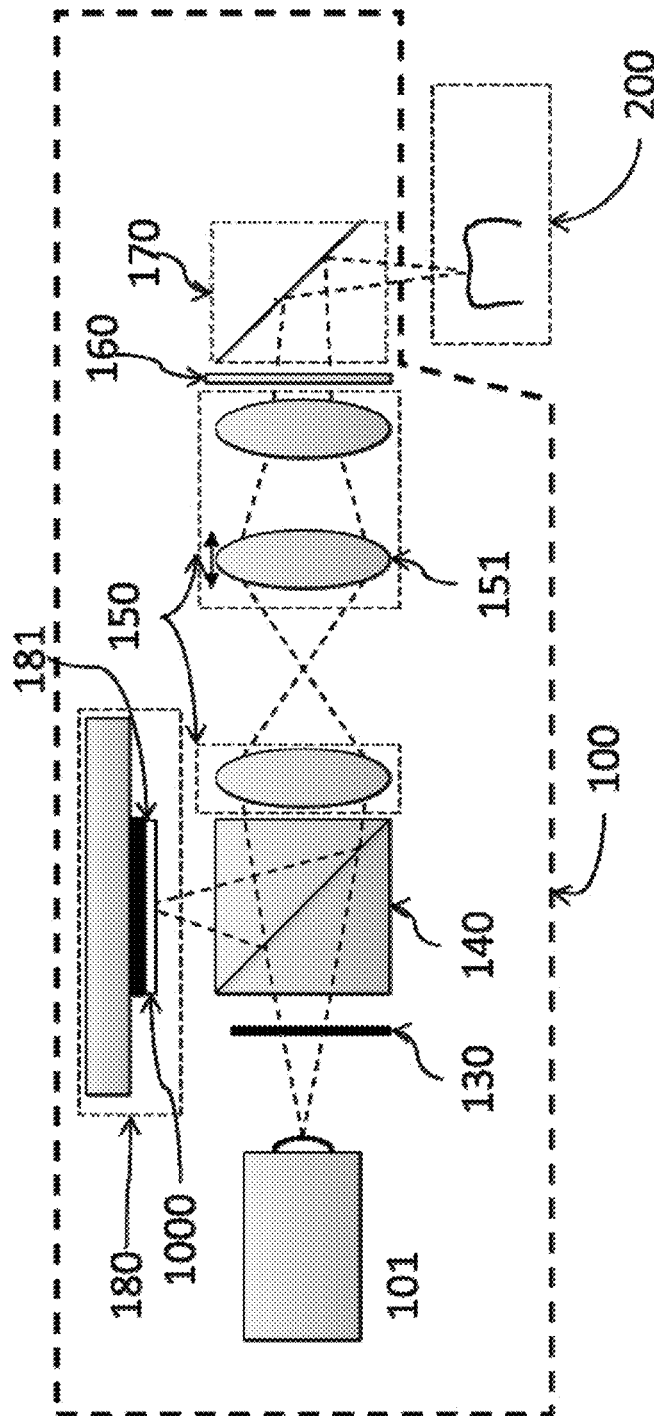


Fig. 1

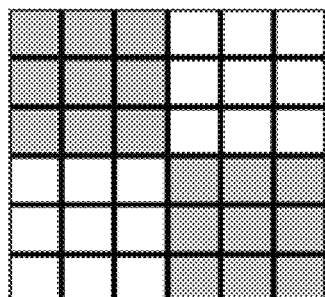


Fig. 2A

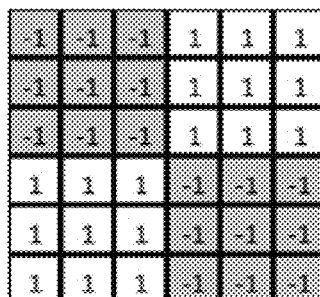


Fig. 2B

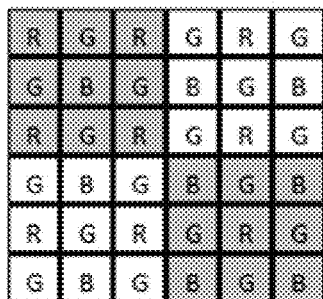


Fig. 3A

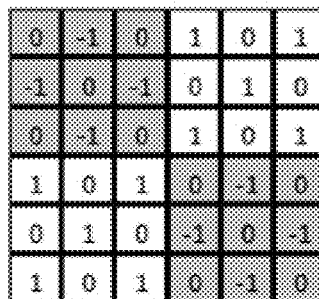


Fig. 3B

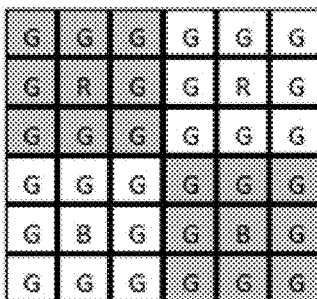


Fig. 4

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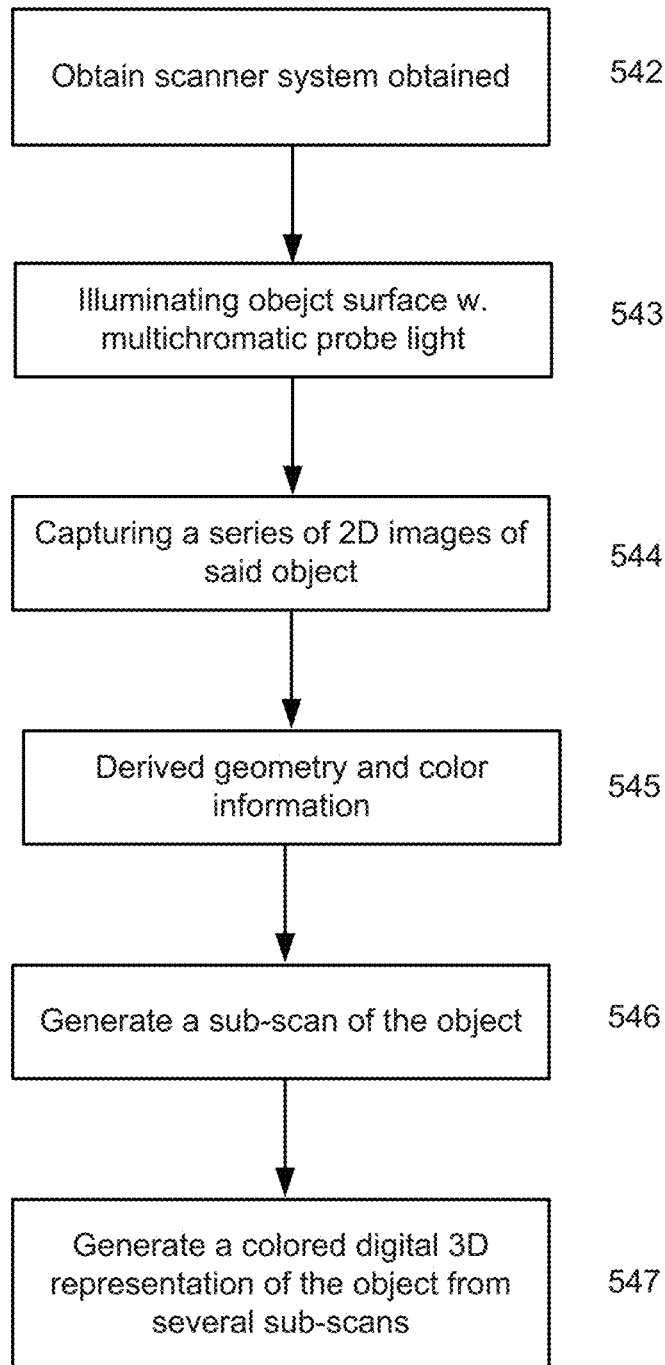


Fig. 5

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