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[54] METHOD AND APPARATUS FOR OPTICALLY SCANNING THREE DIMENSIONAL OBJECTS USING COLOR INFORMATION IN TRACKABLE PATCHES

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[51] Int. Cl.⁶ **G06K 7/00**

[52] U.S. Cl. **382/312**; 382/108; 382/154; 382/162; 382/167; 382/285; 345/419; 345/425; 345/426; 345/430; 345/431

[58] Field of Search 382/154, 285, 382/312, 162, 167, 108; 345/419, 425, 431, 430, 426

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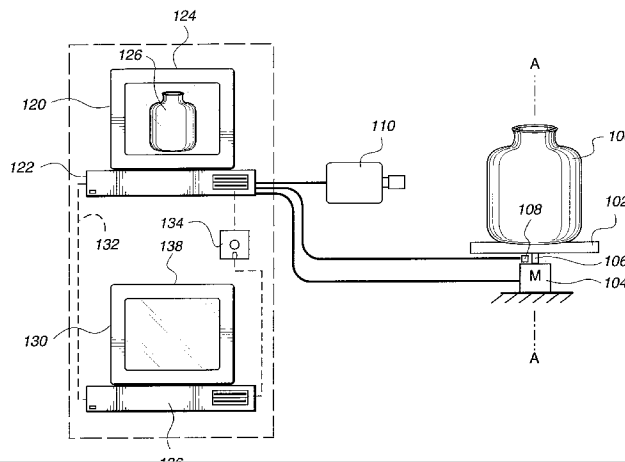
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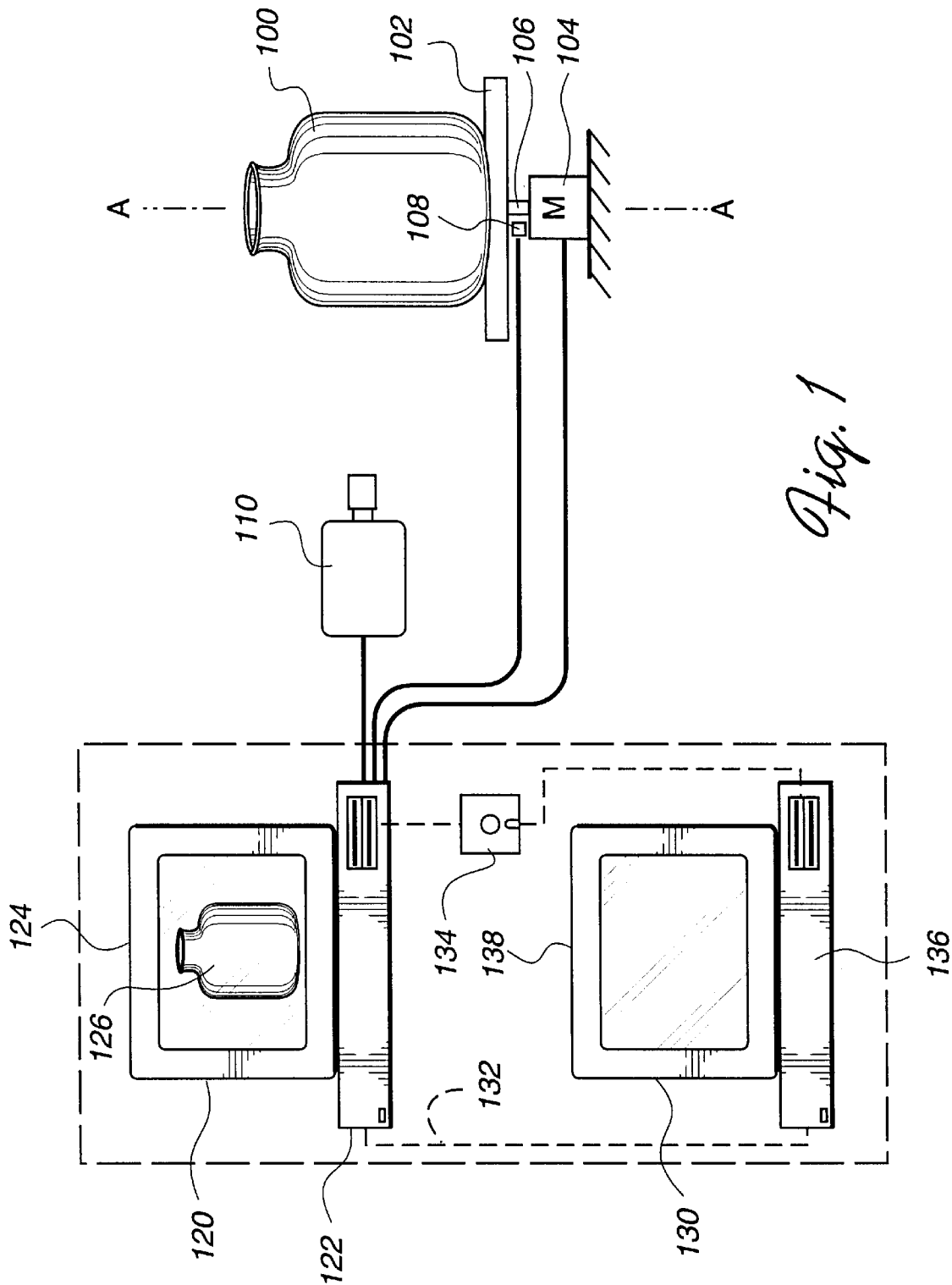
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[57] ABSTRACT

The invention provides a three dimensional digital scanner which includes a multiple view detector which is responsive to a broad spectrum of visible light. The multiple view detector is operative to develop a plurality of images of a three dimensional object which is being scanned. The plurality of images are taken from a plurality of relative angles with respect to the object, and the plurality of images depict a plurality of surface portions of the object. A digital processor including a computational unit is coupled to the detector and is responsive to the plurality of images so that it develops 3-D coordinate positions and related image information for the plurality of surface portions of the object. A three dimensional image of the object to be scanned is thus developed by the digital processor. The data developed includes both shape and surface image color information.

17 Claims, 15 Drawing Sheets





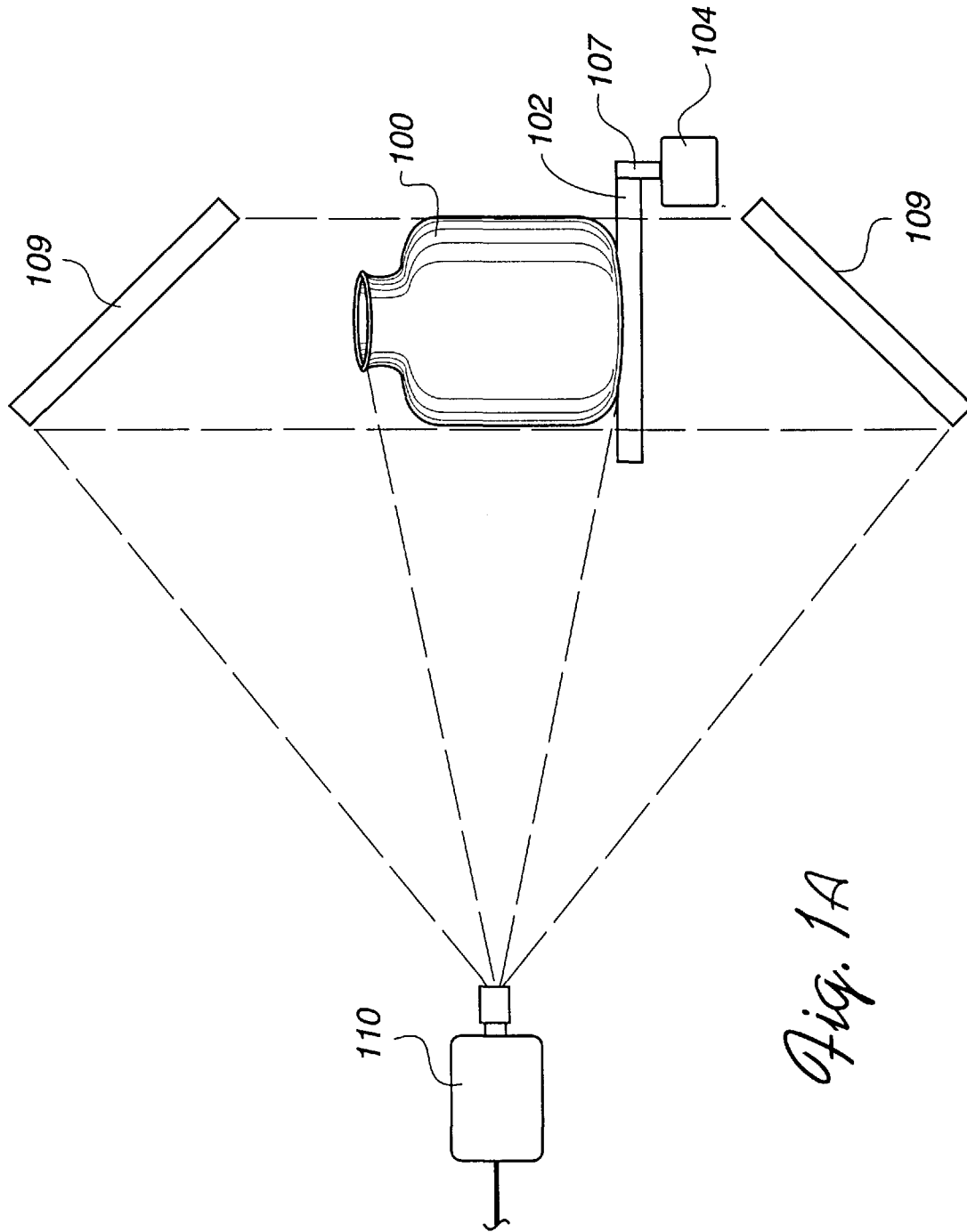


Fig. 1A

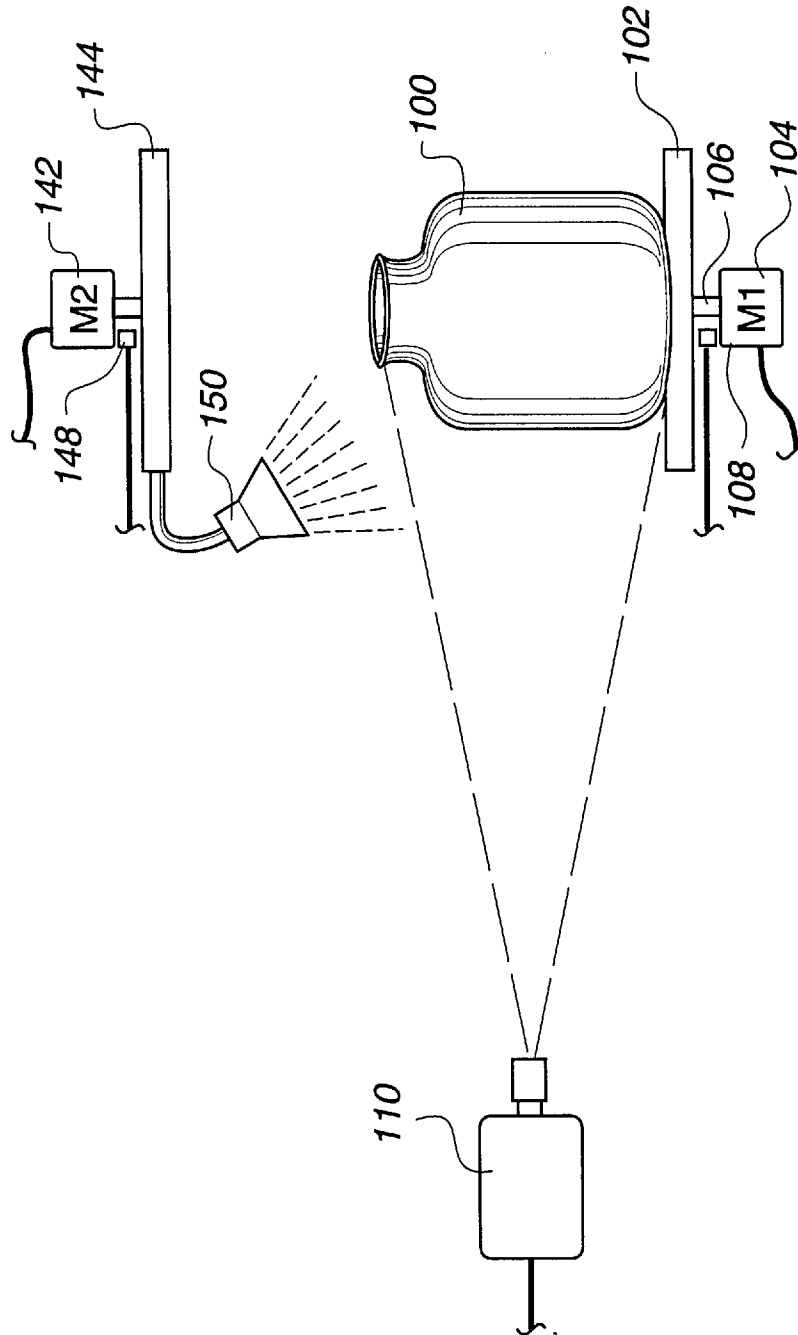


Fig. 1B

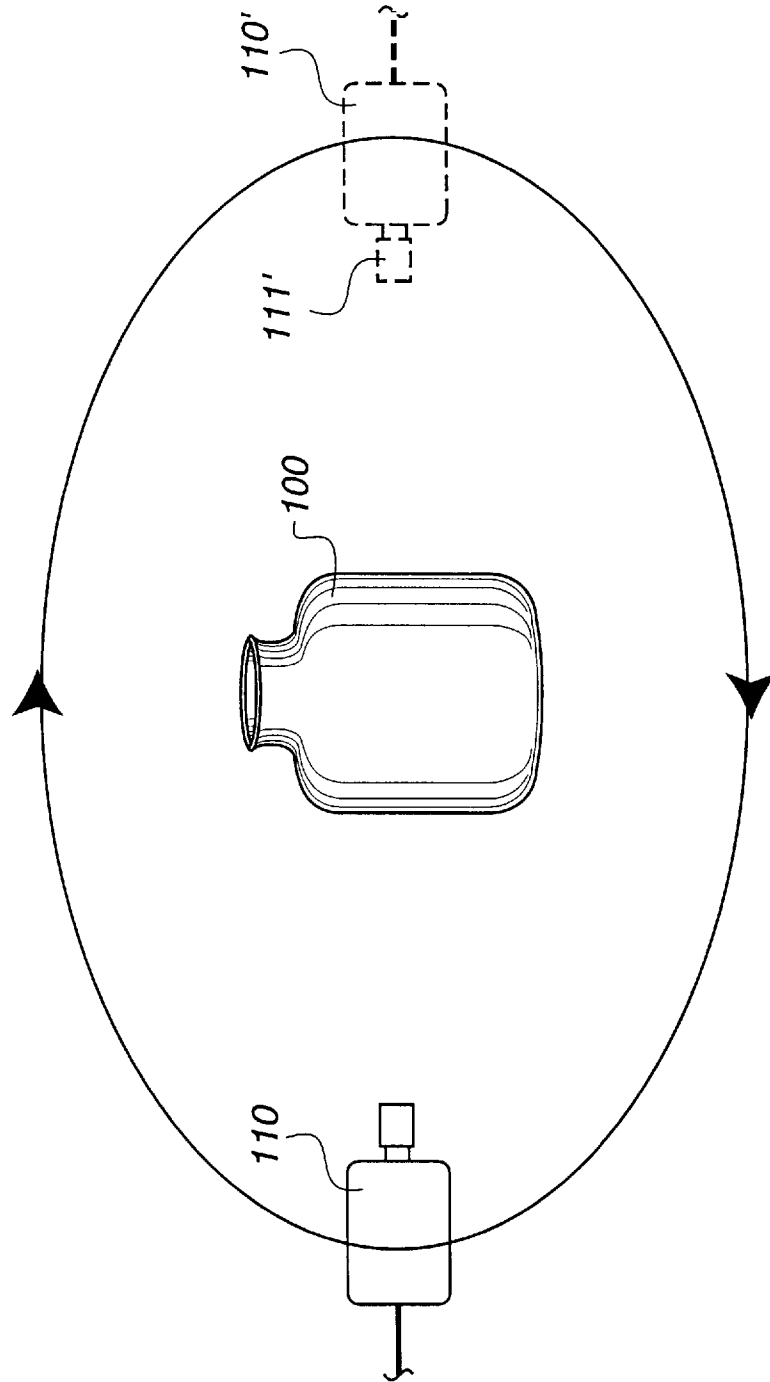


Fig. 1C

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