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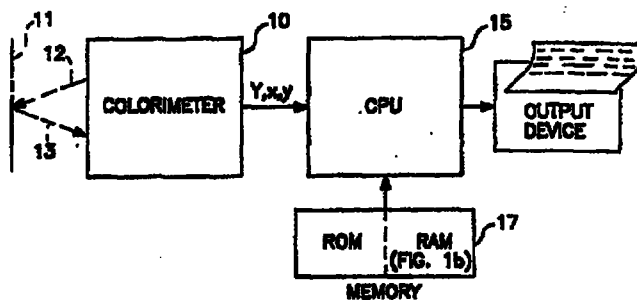
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(54) Title: METHOD AND APPARATUS FOR DETECTING AND MEASURING CONDITIONS AFFECTING COLOR

(57) Abstract

A method and apparatus for determining the condition of a test subject based on color uses a color measuring instrument to detect change in a color factor indicative of a condition such as a disease, spoilage, ageing, etc. A medical condition such as hyperbilirubinemia that affects skin color can be detected. One measures color factors such as Hunter b and L in the subjects' skin color. For predetermined ranges of one color factor, in particular L, changes in the other color factor, e.g. Hunter b, above predetermined levels are indicative of the medical condition. In many cases, a single measurement of the color factors can be utilized as a warning of the likelihood of the medical or contaminated condition, if the ordinary range of the color factor is known for healthy individuals with skin coloration like that of the test subject. Even if there has been no baseline measurement and the test subject's color is such that a single reading of one or two color factors will not warn of the possible presence of the medical condition or contamination, sequential readings can indicate the presence or absence of the condition based upon changes in the measured color factor, or lack of changes. The color measuring techniques apply to a wide range of biological test subjects (e.g. hair, teeth, tissue, excretions, foods, soil, animals, plants).



RANGES OF L	
TABLE I DATA	
TABLE II DATA	
TABLE III DATA	
ΔL INDICATIVE OF ERROR	18a
Δb INDICATIVE OF CONDITION	
Δb WARNING LEVEL	
CALIBRATION VALUES	18b
BASELINE VALUES	
PREVIOUS (AVG.) HUNTER $L_{a,b}$	
CURRENT MULTIPLE MULTISITE (UNAVERAGED) HUNTER $L_{a,b}$	
CURRENT (AVG.) HUNTER $L_{a,b}$	

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