

[54] CONTRABAND DETECTION SYSTEM

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(List continued on next page.)

[*] Notice: The portion of the term of this patent subsequent to Dec. 17, 2008 has been disclaimed.

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Related U.S. Application Data

[63] Continuation of Ser. No. 286,210, Dec. 19, 1988, Pat. No. 5,073,782, which is a continuation-in-part of Ser. No. 183,215, Apr. 19, 1988, Pat. No. 4,901,084.

[51] Int. Cl.⁵ G01S 13/89; H01L 27/146

[52] U.S. Cl. 342/179; 342/351; 250/332

[58] Field of Search 342/179

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[57] ABSTRACT

A contraband detection system especially suited for detecting concealed non-metallic contraband such as ceramic or plastic weapons or illegal drugs carried by a person is disclosed. Plural sources of quasi-coherent millimeter wave radiation are disposed so as to uniformly illuminate a field of view. In the preferred embodiment, the radiation emitted by the sources is linearly polarized in a single plane such that the polarization of the radiation with respect to the plane in which linearly polarized radiation is preferentially received by the detectors can be controlled. For detection of dielectric objects, such as ceramic weapons or narcotics, these planes of polarization should be orthogonal to one another. The detector is a staring array which does not require scanning to generate an image of the entire field of view; the signal provided by each element of the detector array corresponds to the illumination reflected from objects in a single portion of the field of view. Real-time imaging of concealed dielectric and metallic objects is thus made possible.

34 Claims, 10 Drawing Sheets

