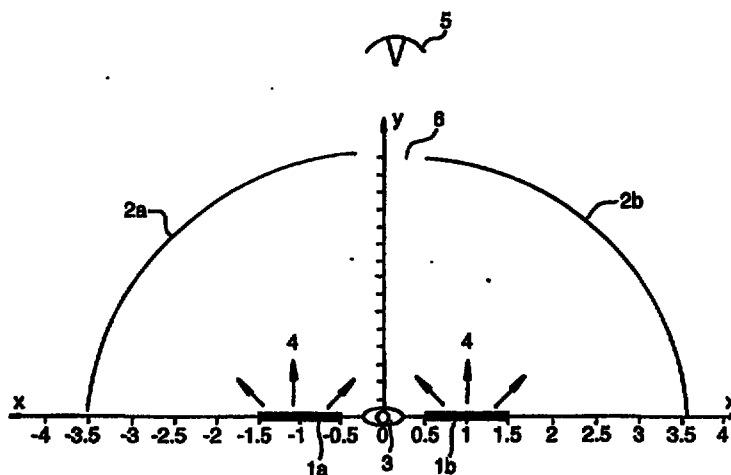




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (71) Applicant (for all designated States except US): THE SECRETARY OF STATE FOR DEFENCE [GB/GB]; Defence Evaluation & Research Agency, Ively Road, Farnborough, Hampshire GU14 0LX (GB).                                                                                                                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                 |                 |  |    |                                                 |                |                |                                              |            |             |                                     |               |                |                                   |               |                |                       |  |  |
| (72) Inventors; and<br>(75) Inventors/Applicants (for US only): SINCLAIR, Gordon, Neil [GB/GB]; Dera Malvern, St. Andrews Road, Malvern Worcs. WR14 3PS (GB). LETTINGTON, Alan, Harold [GB/GB]; University of Reading, Dept. of Physics, J.J. Thomson Physical Laboratory, Whiteknights, Reading RG6 6AF (GB). |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                 |                 |  |    |                                                 |                |                |                                              |            |             |                                     |               |                |                                   |               |                |                       |  |  |
| (74) Agents: SKELTON, Stephen, Richard et al.; D/IPR Formalities Section, Poplar 2, MOD (PE) Abbey Wood #19, Stoke Gifford, Bristol BS34 8JH (GB).                                                                                                                                                             |                | Published<br>With international search report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                 |                 |  |    |                                                 |                |                |                                              |            |             |                                     |               |                |                                   |               |                |                       |  |  |
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(54) Title: MILLIMETRE WAVE IMAGING APPARATUS



## (57) Abstract

Millimetre wave imaging apparatus for use, in particular, as an indoor security system to identify objects concealed under the clothing of a person in a background scene, comprising means for generating a millimetric temperature contrast between the person (3) to be imaged and the surroundings in scene. This may be a "hot" or "cold" source (1) for producing a flux (4), and a relatively smaller flux (4) respectively, of substantially incoherent millimetre wavelength radiation. The apparatus may also comprise at least one partial ellipsoid reflective enclosure (2) for reflecting millimetre wavelength radiation emitted from the "hot" or "cold" source (1) (and reflected from the person to be imaged, and any objects on the body), so as to generate substantially non-localised and uniform illumination of the person (3). The enclosure may have a metallic inner surface on which a dimpled pattern may be embossed to diffuse the millimetre wavelength radiation reflected from the metallic inner surface. The apparatus also includes one or more millimetre wavelength imaging cameras (5), for detecting the millimetre wavelength radiation at one or more millimetre wave centre frequencies, which may be mounted inside or outside the reflective enclosure (2). An image of the object or objects may be generated on a television monitor from the detected radiation.