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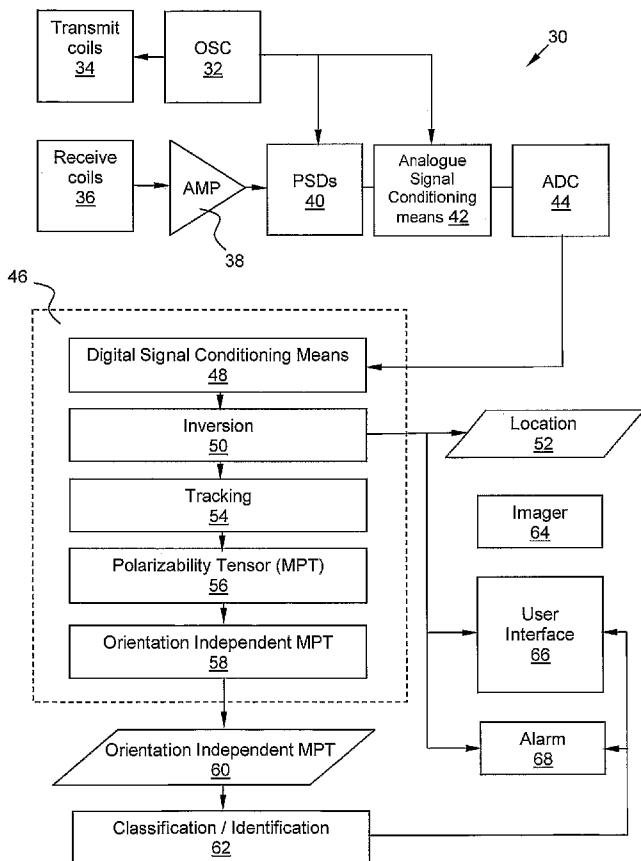
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[Continued on next page]

(54) Title: METAL OBJECT DETECTING APPARATUS



(57) Abstract: A metal object detecting apparatus (30) comprising, transmitter means (32), (34) for generating a primary magnetic field having a resultant magnetic field direction which varies along any substantially linear path through a surveillance volume such that at three locations along said path the resultant magnetic field points in three mutually substantially orthogonal directions; detection means for measuring a secondary magnetic field at a plurality of positions as a function of time due to the presence of a metal object within the surveillance volume as it passes a plurality of measurement points there-through; and processing means (46) for determining from the measured secondary magnetic fields a track through the surveillance volume comprising a plurality of locations of the metal object and a magnetic moment thereof at each location, the processing means (46) being adapted in use to derive from a magnetic signature that is characteristic of the metal object and independent of the orientation and track of the metal object. The apparatus (30) is capable of classifying or identifying a plurality of metal objects simultaneously based on the magnetic signature thereof.

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FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,
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B. FIELDS SEARCHED

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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 906 973 A (KARBOWSKI JAMES P [US] ET AL) 6 March 1990 (1990-03-06) column 4, line 36 - column 5, line 37; figures 4-7 column 12, line 20 - line 56; figure 8e	1, 42
A	US 3 950 696 A (MILLER ROBERT C ET AL) 13 April 1976 (1976-04-13) column 2, line 6 - column 5, line 38; figures 1,2	1, 42

Further documents are listed in the continuation of Box C.

See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4906973	A	06-03-1990	NONE
US 3950696	A	13-04-1976	NONE