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Karen et al.

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[54] APPARATUS AND METHODS FOR IDENTIFYING AND COMPARING LATTICE STRUCTURES AND DETERMINING LATTICE STRUCTURE SYMMETRIES

[75] Inventors: Vicky L. Karen, Gaithersburg; Alan D. Mighell, Rockville, both of Md.

[73] Assignee: The United States of America as represented by the Secretary of Commerce, Washington, D.C.

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[58] Field of Search 364/496, 497, 498, 499; 378/53, 71, 73, 88; 73/787

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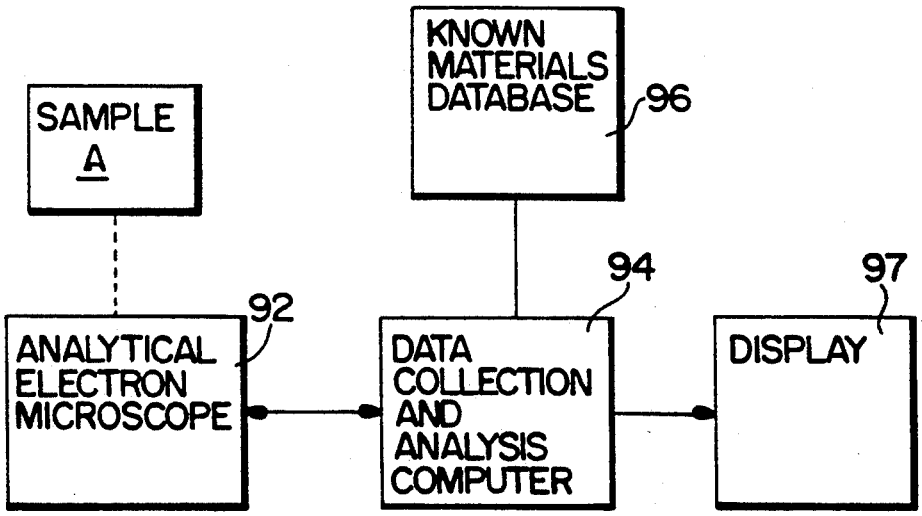
Primary Examiner—Kevin J. Teska
Attorney, Agent, or Firm—Kirk M. Hudson; Alan M. Kagen

[57] ABSTRACT

A converse transformation matrix generation approach is used either i) to relate a lattice structure of one crystalline material to the lattice structure(s) of one or more other crystalline materials for determining interlattice relationships which allow materials to be identified and classified relative to other materials; or ii) to relate a lattice structure of a material to itself for determining lattice symmetry. In particular, matrices which transform any primitive cell defining a lattice structure either into itself or into another cell defining a second lattice structure to within predetermined maximum tolerances of the cell parameters are generated.

7 Claims, 14 Drawing Sheets