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Ittycheriah et al.

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(54) **SYSTEM AND METHOD FOR COMPRESSING BIOMETRIC MODELS**

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(52) **U.S. Cl.** **382/115**; 340/5.52; 704/238
(58) **Field of Search** 382/115, 119, 382/120; 704/221, 222, 230, 231, 236, 237, 238, 239, 243, 245, 247, 250, 500, 246, 273; 235/380; 340/5.1–5.92, 5.8–5.86; 73/865.4

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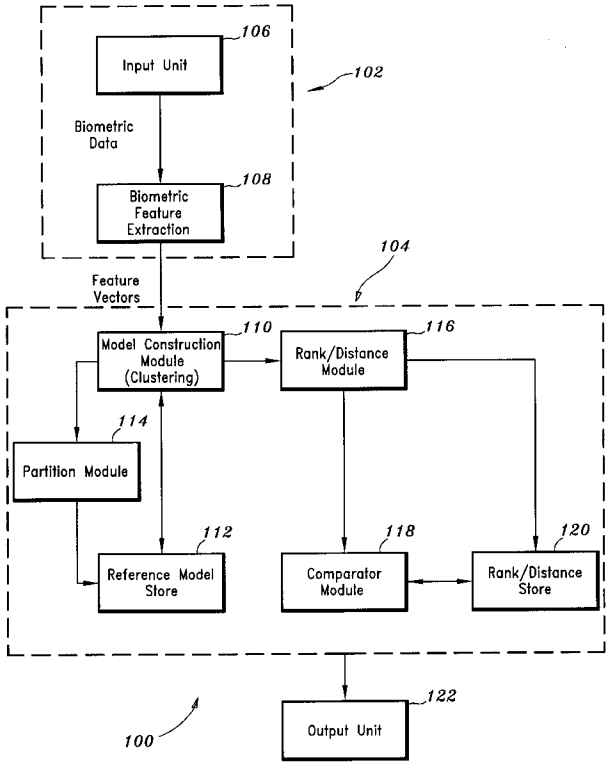
(57) **ABSTRACT**

A system and method for building compressed biometric models and performing biometric identification using such models. The use of the compressed biometric models results in a significant decrease in the storage requirements for biometric models in conventional biometric systems. A given number of L reference biometric models are built. The L reference models are randomly divided into M subsets. During user enrollment, distance measurements between a temporary biometric model and each of the reference models in the M subsets are computed. The rank and distance parameters are used to build the compressed biometric models in accordance with the model: $I(M_j, R_i, D(M_j, R_i))$, where I represents the identity of the closest reference model in a corresponding subset M_j; R_i refers to the ranking of the closeness of the reference model to the temporary biometric model as compared with the closeness of each of the other reference models in the corresponding subset M_j; and D refers to the corresponding distance measure between the reference model and the temporary biometric model.

29 Claims, 6 Drawing Sheets



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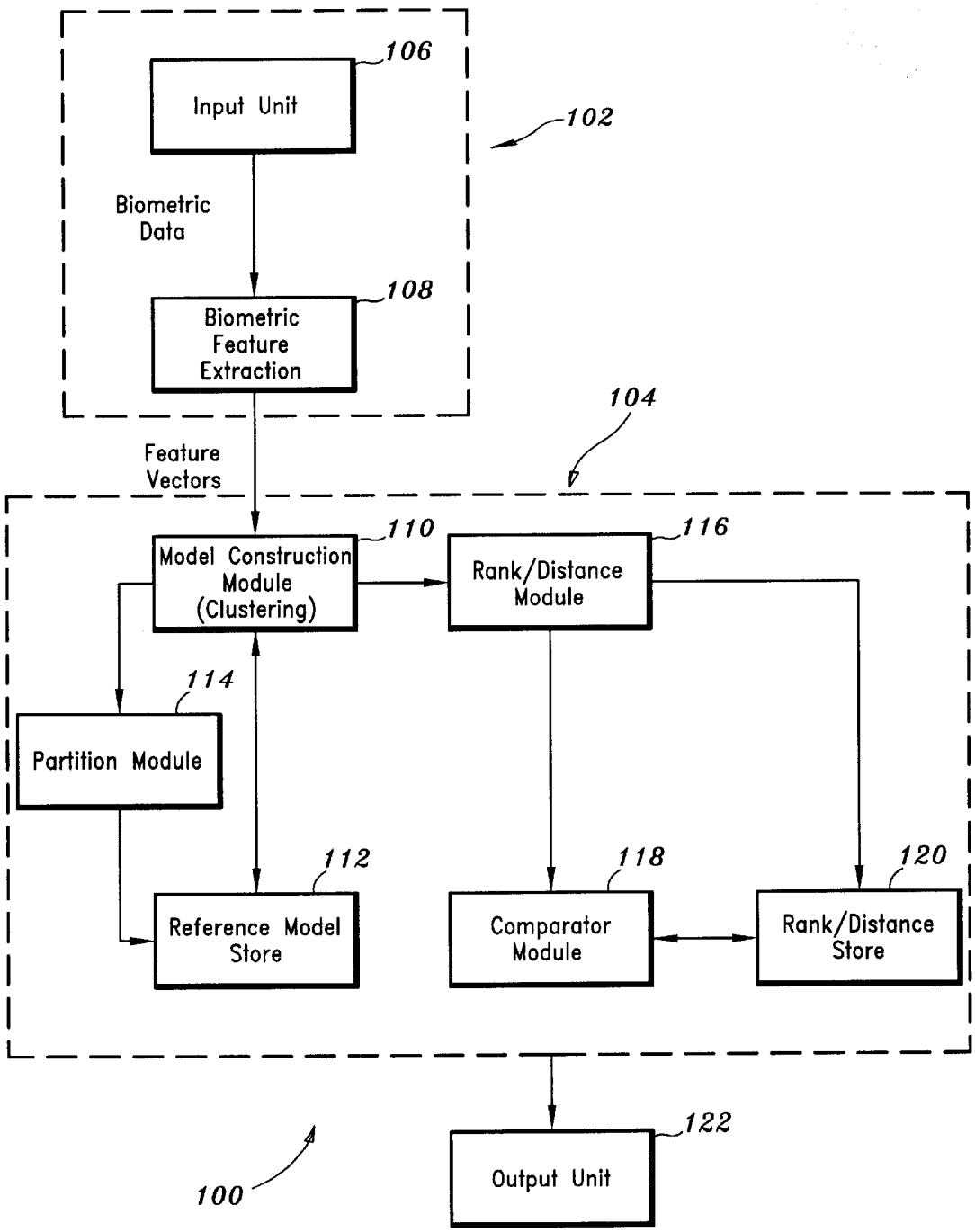

FIG. 1

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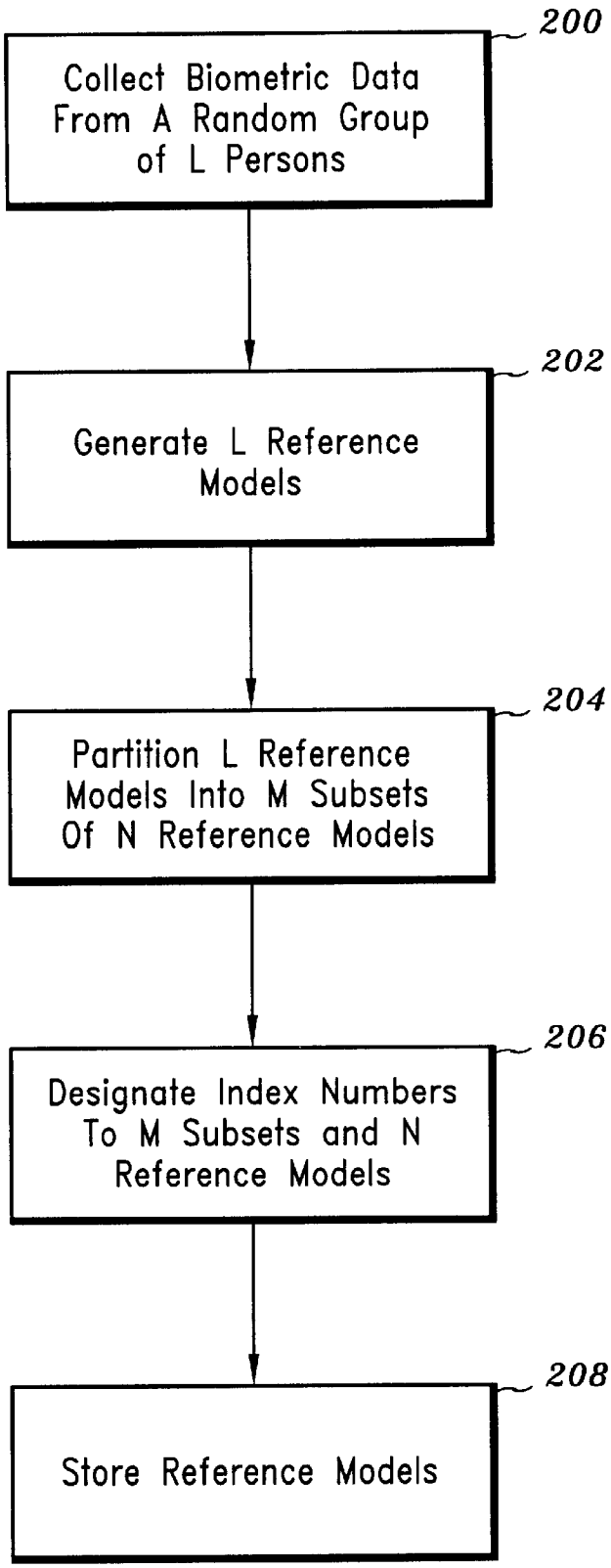

FIG. 2

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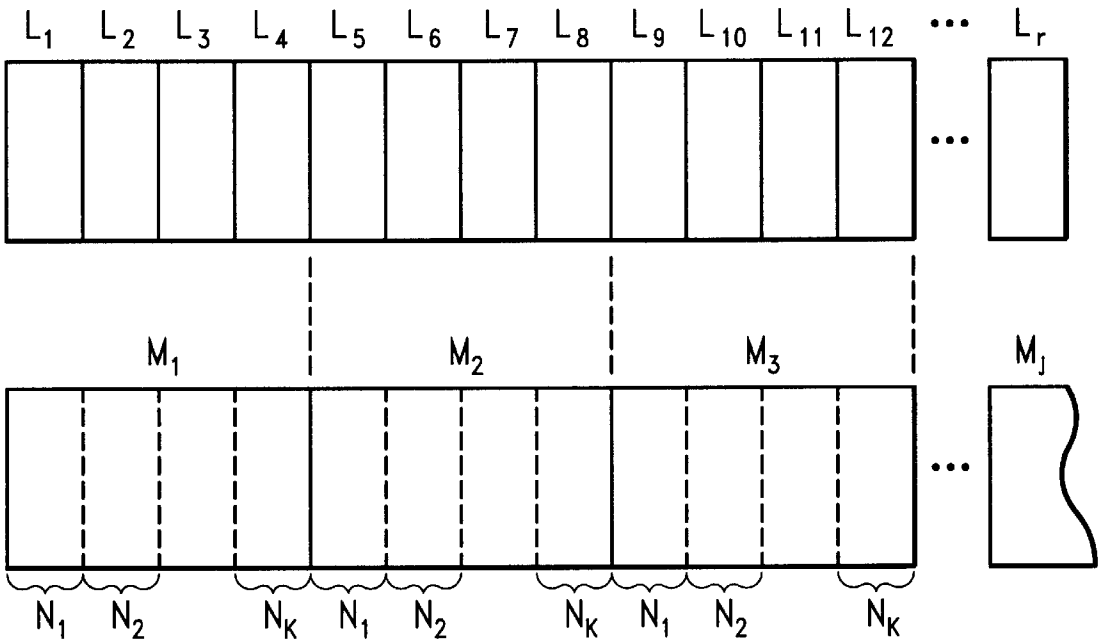

FIG. 3

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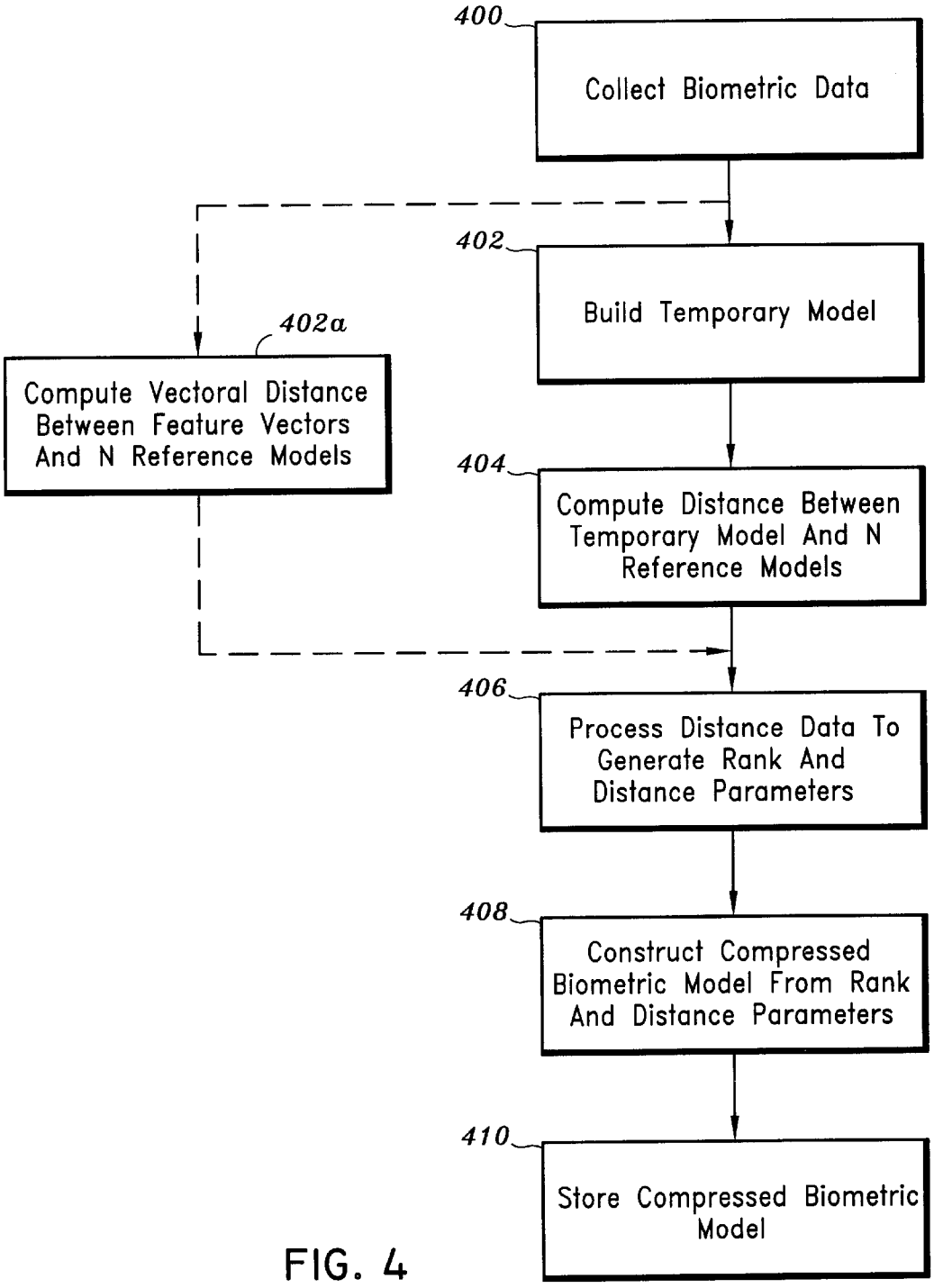

FIG. 4

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