



[54] ENHANCED SECURITY FINGERPRINT SENSOR PACKAGE AND RELATED METHODS

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[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: 08/592,472

[22] Filed: Jan. 26, 1996

[51] Int. Cl.⁶ G06K 9/00

[52] U.S. Cl. 382/124; 340/825.34

[58] Field of Search 382/124-127; 340/825.34; 356/71; 283/68-70, 74, 78; 380/9, 21, 23

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Table of U.S. Patent Documents with columns for patent number, date, inventor, and reference number.

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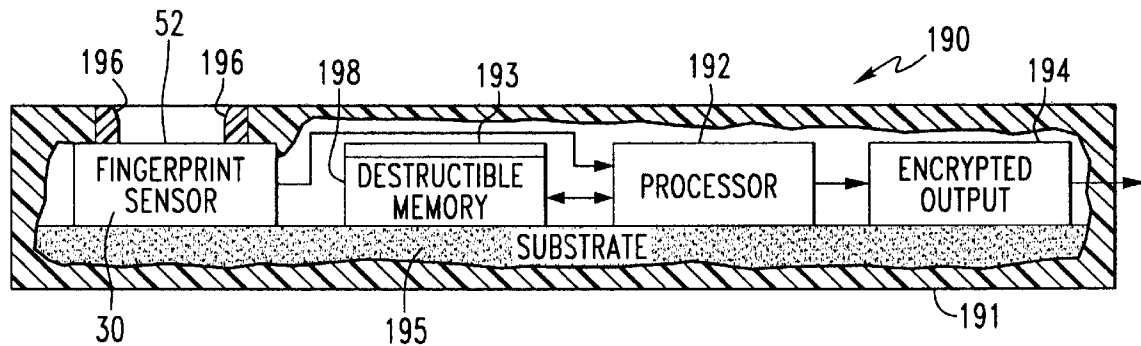
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Attorney, Agent, or Firm—Allen, Dyer, Doppelt, Milbrath & Gilchrist, P.A.

[57] ABSTRACT

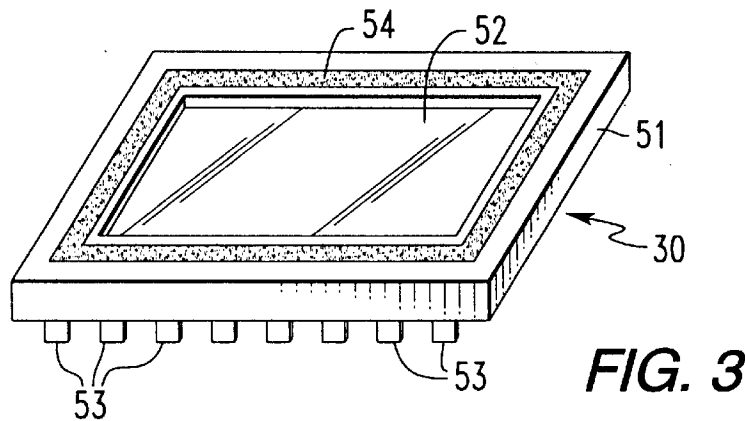
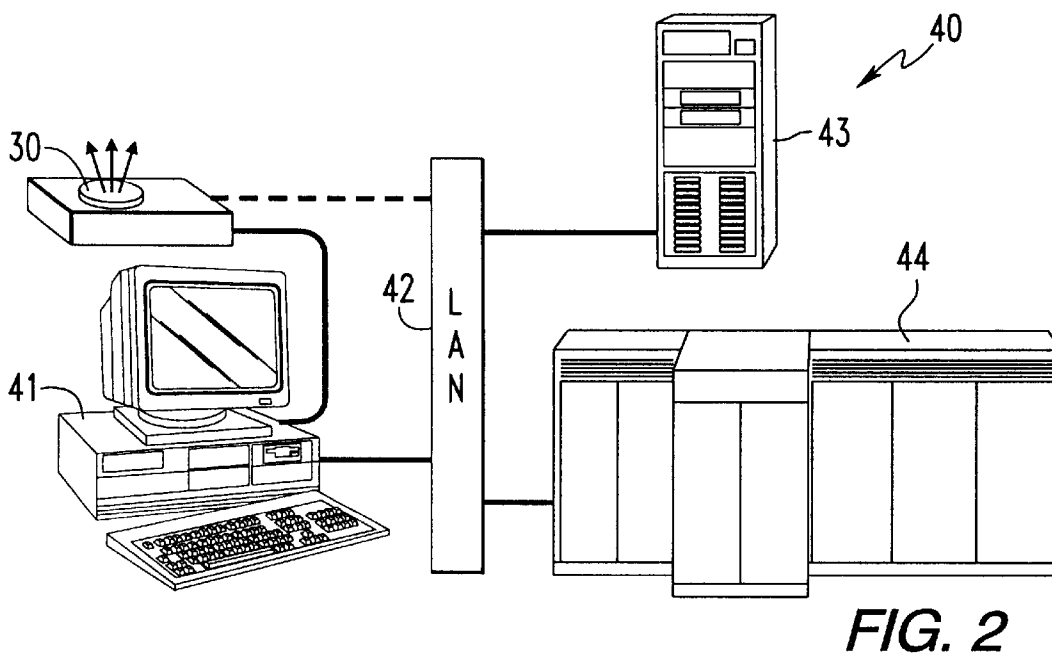
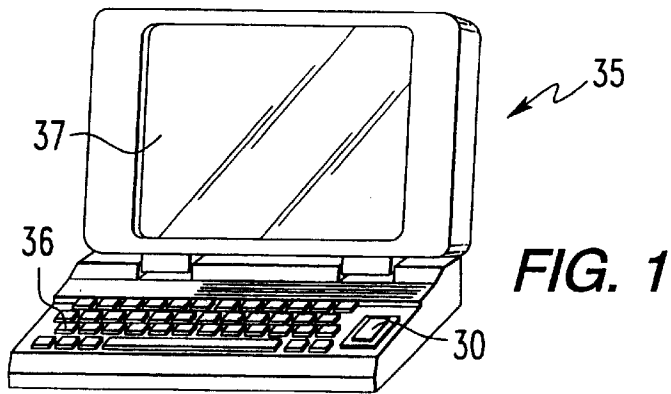
A fingerprint sensor package includes a tamper-resistant housing, a fingerprint sensor mounted in the housing, and an encryption output circuit mounted within the housing and operatively connected to the fingerprint sensor for generating an encrypted output signal related to a sensed fingerprint. The fingerprint sensor package may include a processor operatively connected between the fingerprint sensor and the encryption circuit. In addition, the package may also include a reference fingerprint memory for storing reference fingerprint information. Accordingly, the processor may have the capability to determine if a sensed fingerprint matches a stored reference fingerprint. To further enhance security of the stored reference fingerprint information, the sensor package also preferably includes a removing circuit or device for removing reference fingerprint information from the reference fingerprint storage means responsive to tampering. In one embodiment of the invention, the fingerprint sensor preferably includes an electric field integrated circuit fingerprint sensor. Method aspects of the invention are also disclosed.

36 Claims, 10 Drawing Sheets



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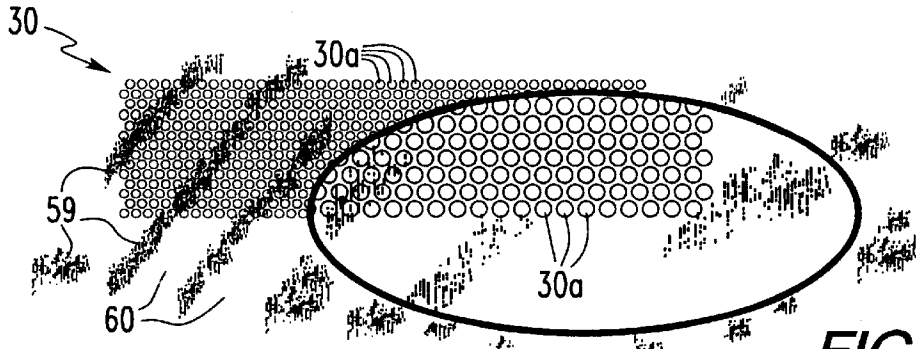


FIG. 4

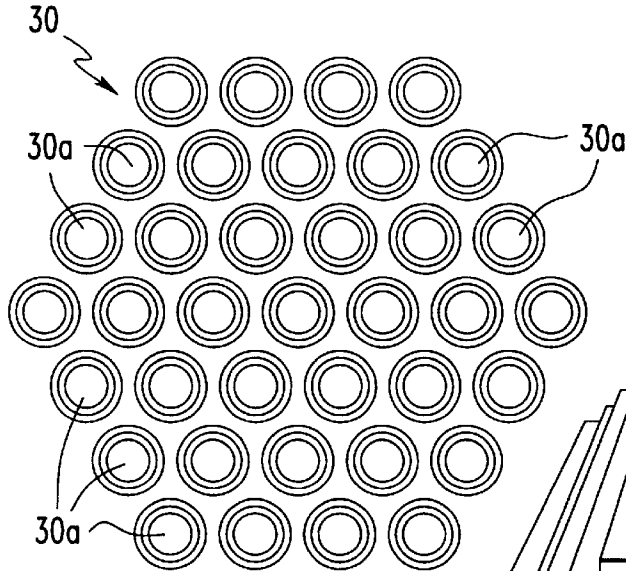


FIG. 5

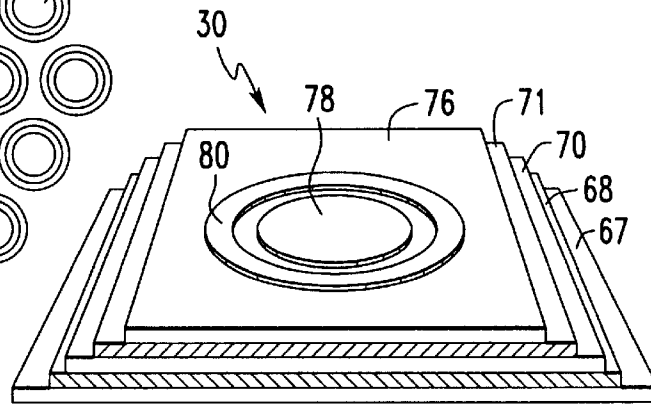


FIG. 6

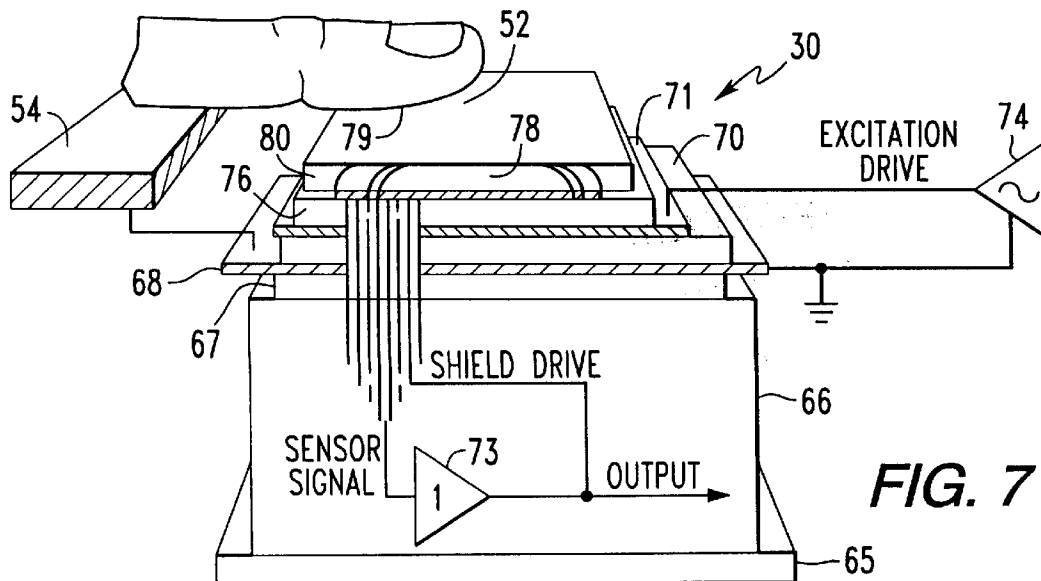


FIG. 7

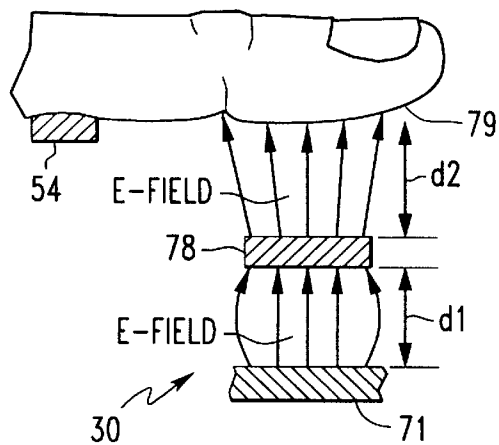


FIG. 8

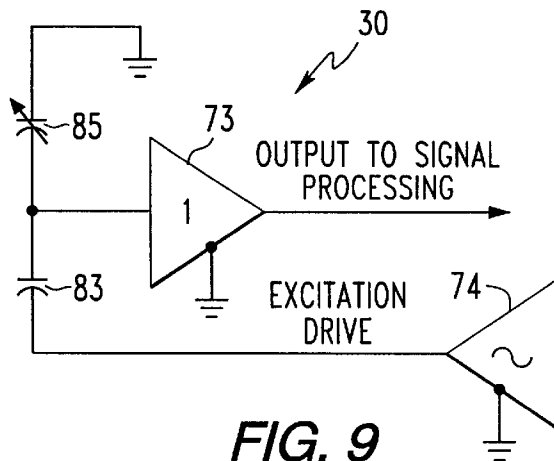


FIG. 9

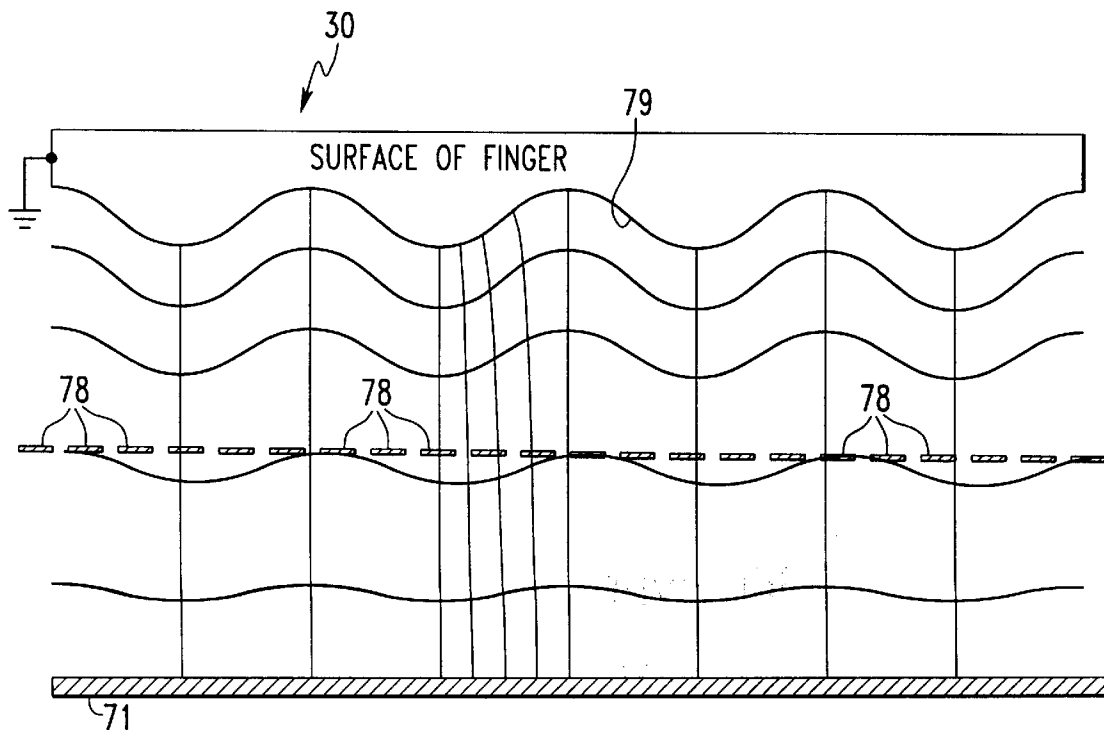


FIG. 10

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