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Reynolds et al.

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(54) **CAPACITIVE SENSOR DEVICE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 2202 days.

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(57) **ABSTRACT**

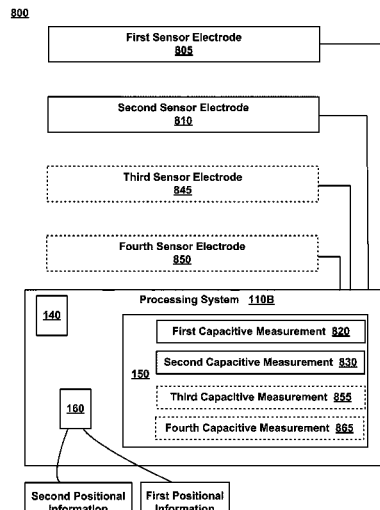
A capacitive sensor device comprises a first sensor electrode, a second sensor electrode, and a processing system coupled to the first sensor electrode and the second sensor electrode. The processing system is configured to acquire a first capacitive measurement by emitting and receiving a first electrical signal with the first sensor electrode. The processing system is configured to acquire a second capacitive measurement by emitting and receiving a second electrical signal, wherein one of the first and second sensor electrodes performs the emitting and the other of the first and second sensor electrodes performs the receiving, and wherein the first and second capacitive measurements are non-degenerate. The processing system is configured to determine positional information using the first and second capacitive measurements.

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G01R 27/26 (2006.01)
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CPC **G01R 27/2605** (2013.01); **G06F 3/044** (2013.01); **G06F 3/0416** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC G06F 3/0416; G06F 3/044; G06F 19/00; H03K 17/9622; H03K 17/955;
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20 Claims, 22 Drawing Sheets



- (51) **Int. Cl.**
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H03K 17/96 (2006.01)
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 (2013.01); **H03K 2217/96073** (2013.01); **H03K**
2217/960725 (2013.01); **H03K 2217/960765**
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- (58) **Field of Classification Search**
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 See application file for complete search history.

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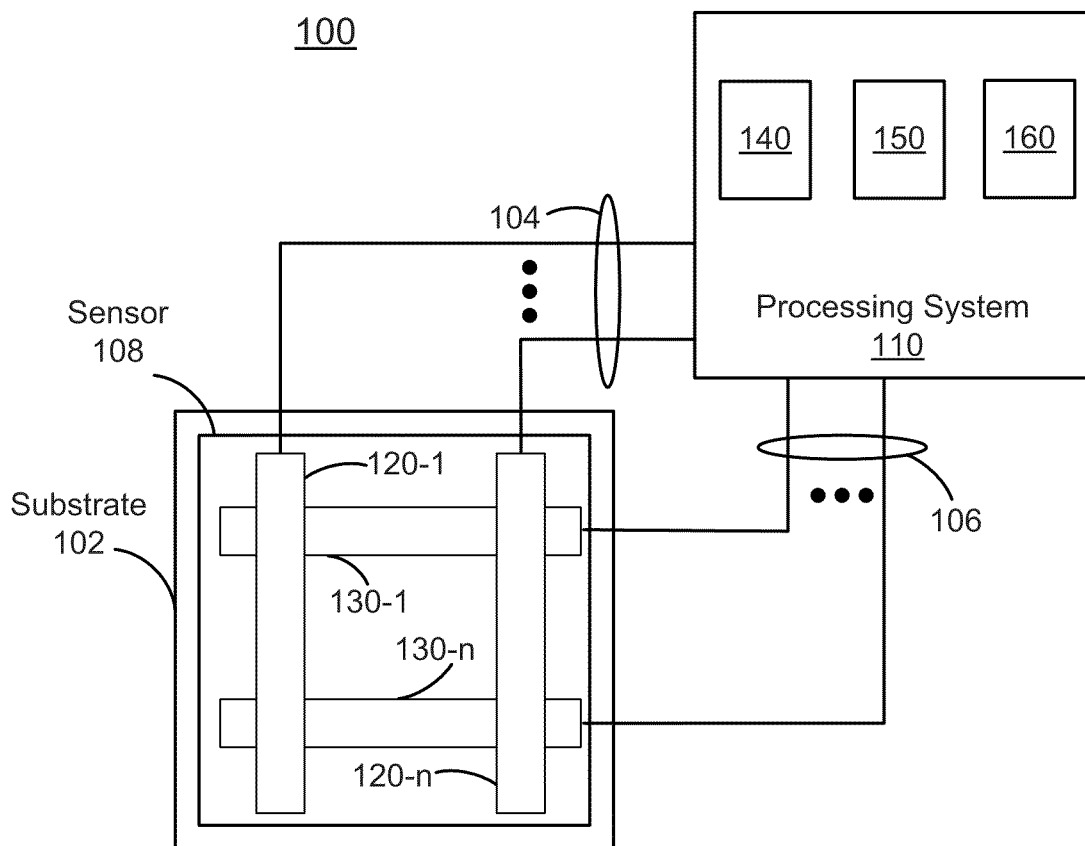


FIG. 1

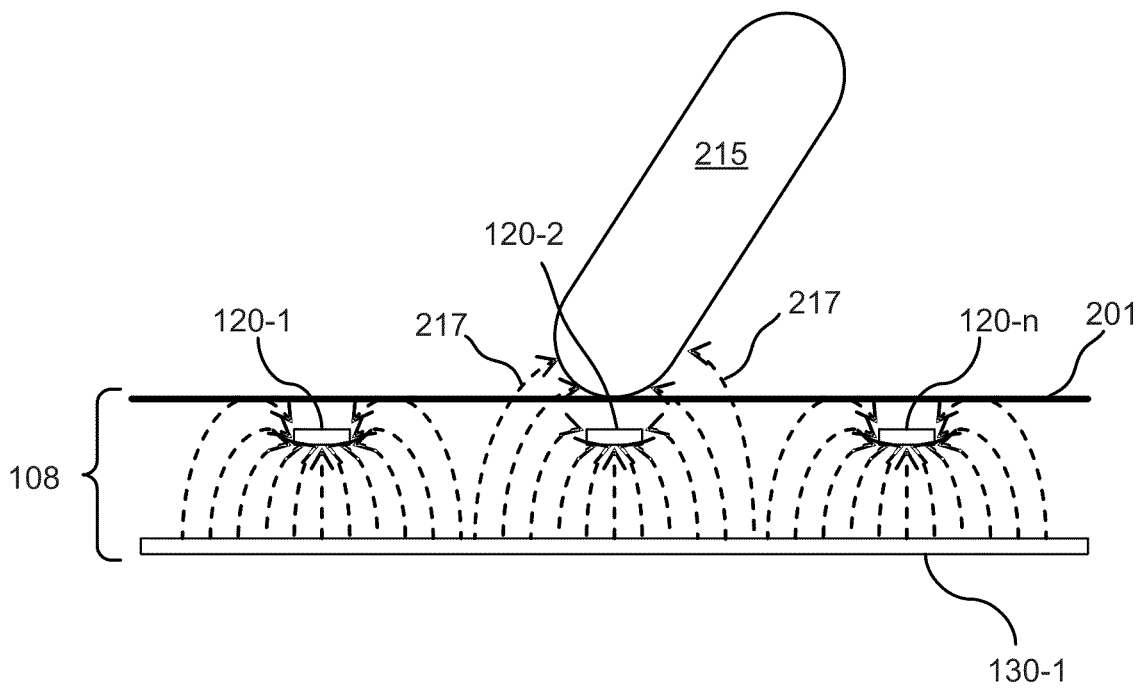


FIG. 2

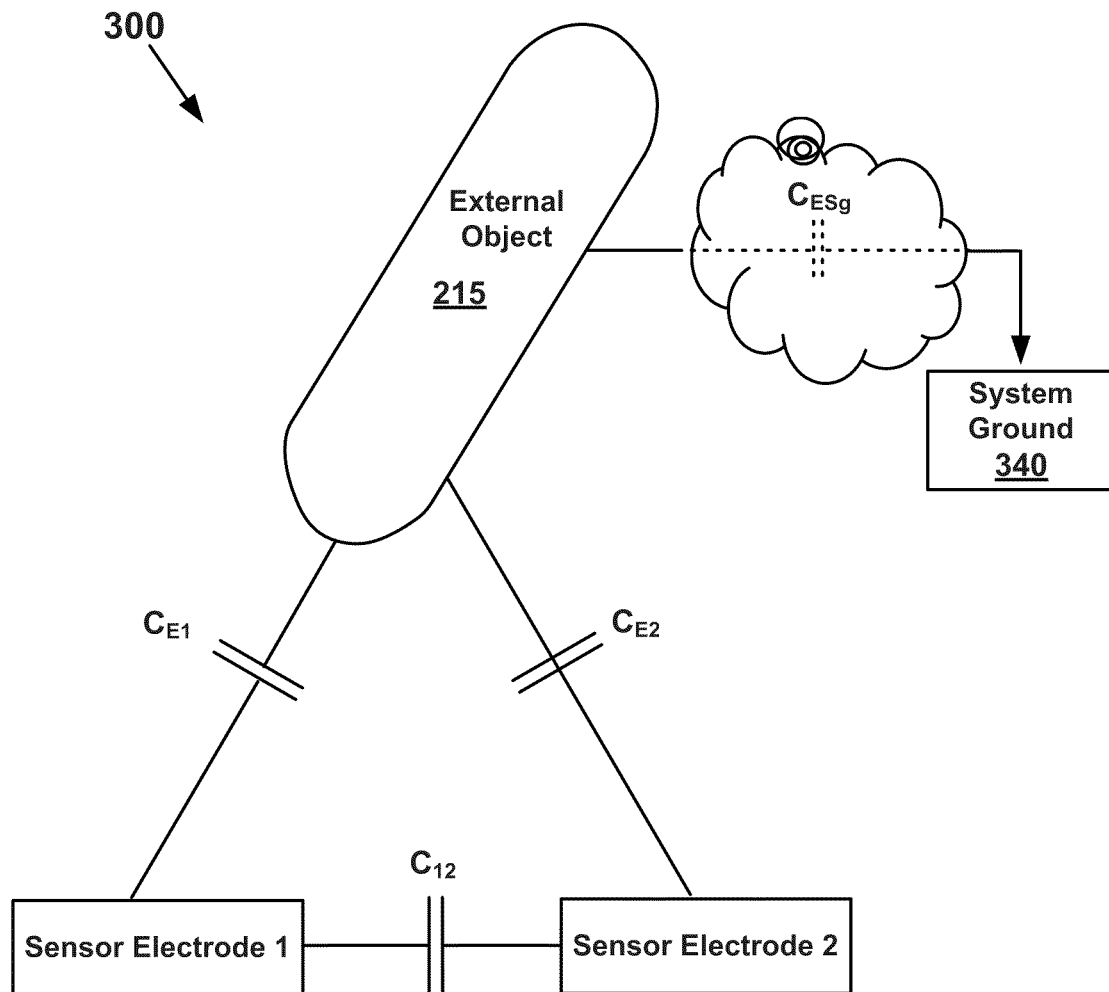


FIG. 3

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