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(54) **TOUCH SCREEN SENSOR**

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(52) **U.S. Cl.** **345/173; 702/82; 29/832**

(57) **ABSTRACT**

A two-dimensional touch sensor comprising a plurality of electrodes arranged in a mesh pattern on a substrate. Each electrode is formed by interconnected metal traces, the metal being intrinsically opaque, but the metal traces being sufficiently narrow to be practically invisible. The metal traces have a width less than or equal to 10 μm and occupy less than or equal to 5% of the area of each electrode. The electrodes can be deposited additively via a printing process, for example using copper as the metal. The narrow width of the tracks allows the film to be highly transparent, since the electric field used in capacitive touch screens can be made to propagate with very low metal densities.

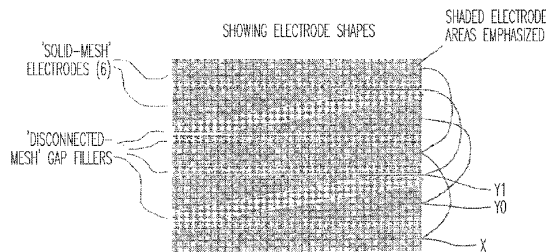
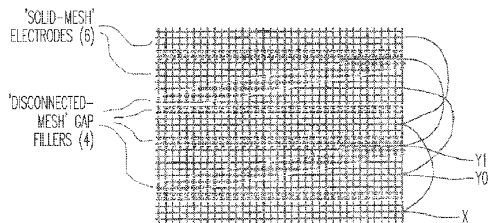
(73) Assignee: **Atmel Corporation**, San Jose, CA (US)

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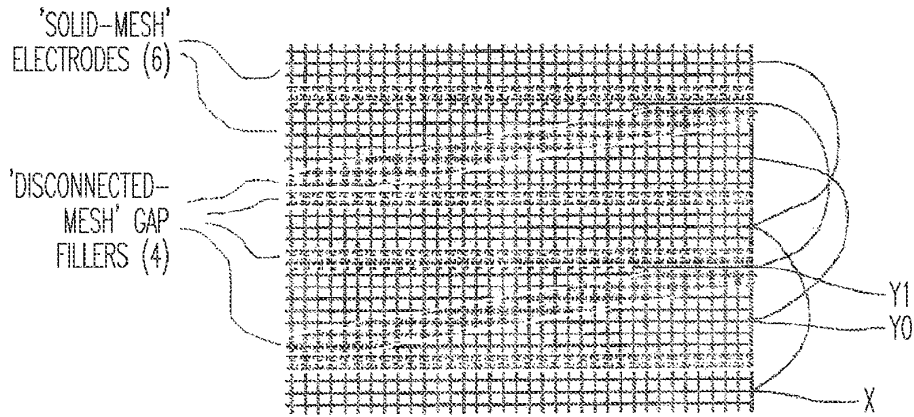


Fig. 1A

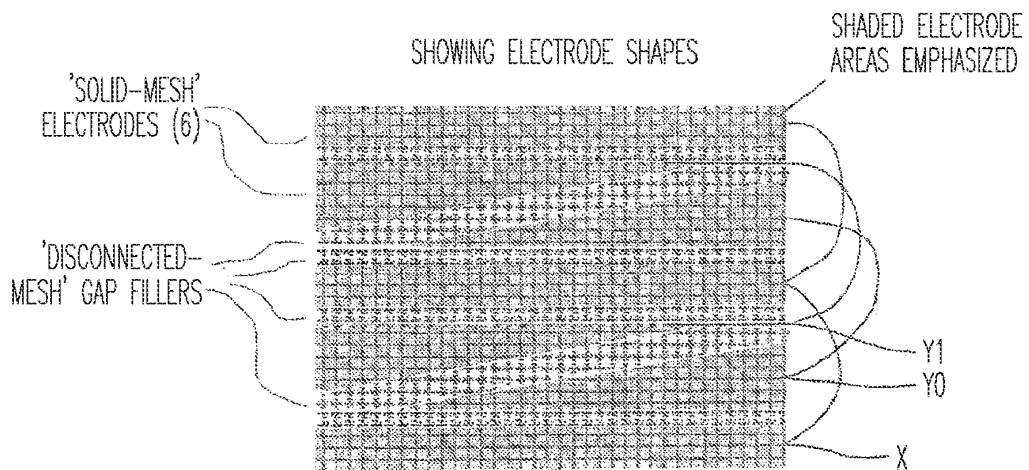
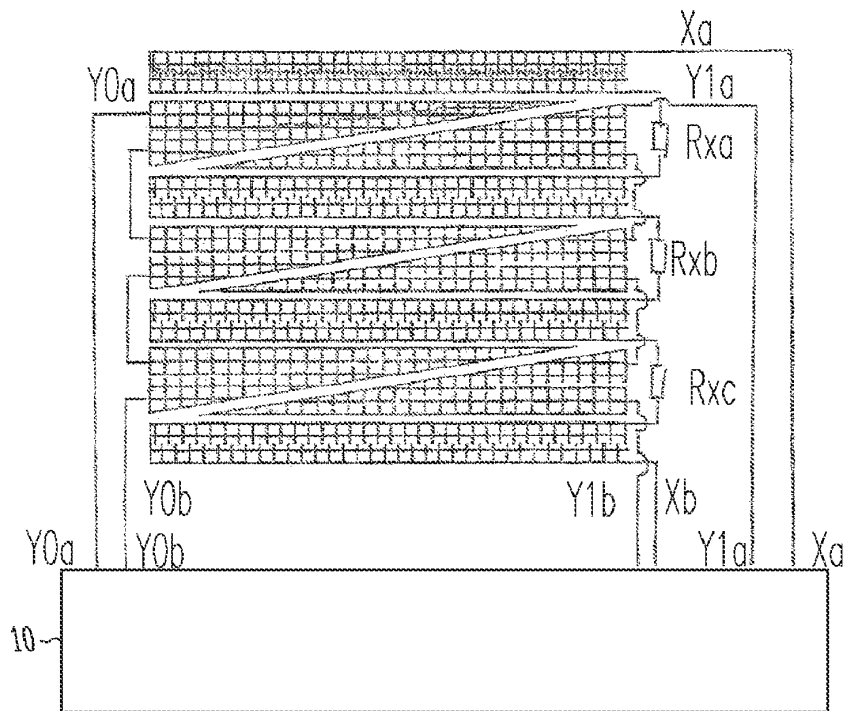
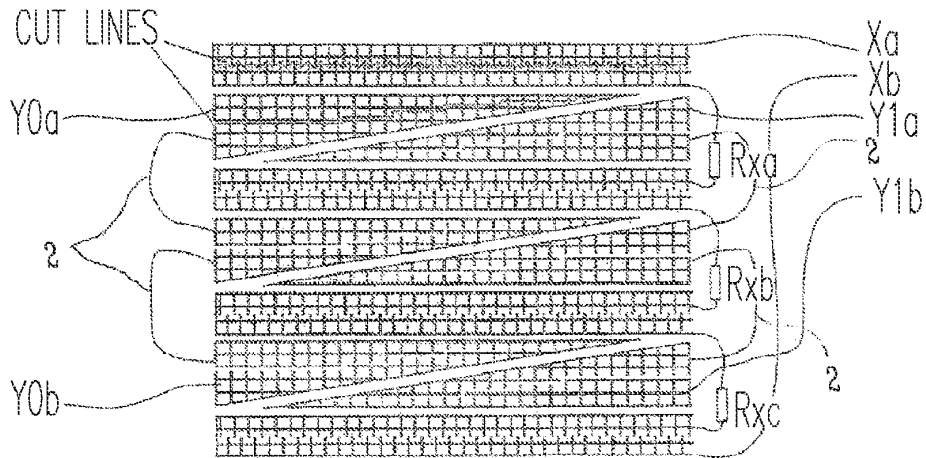
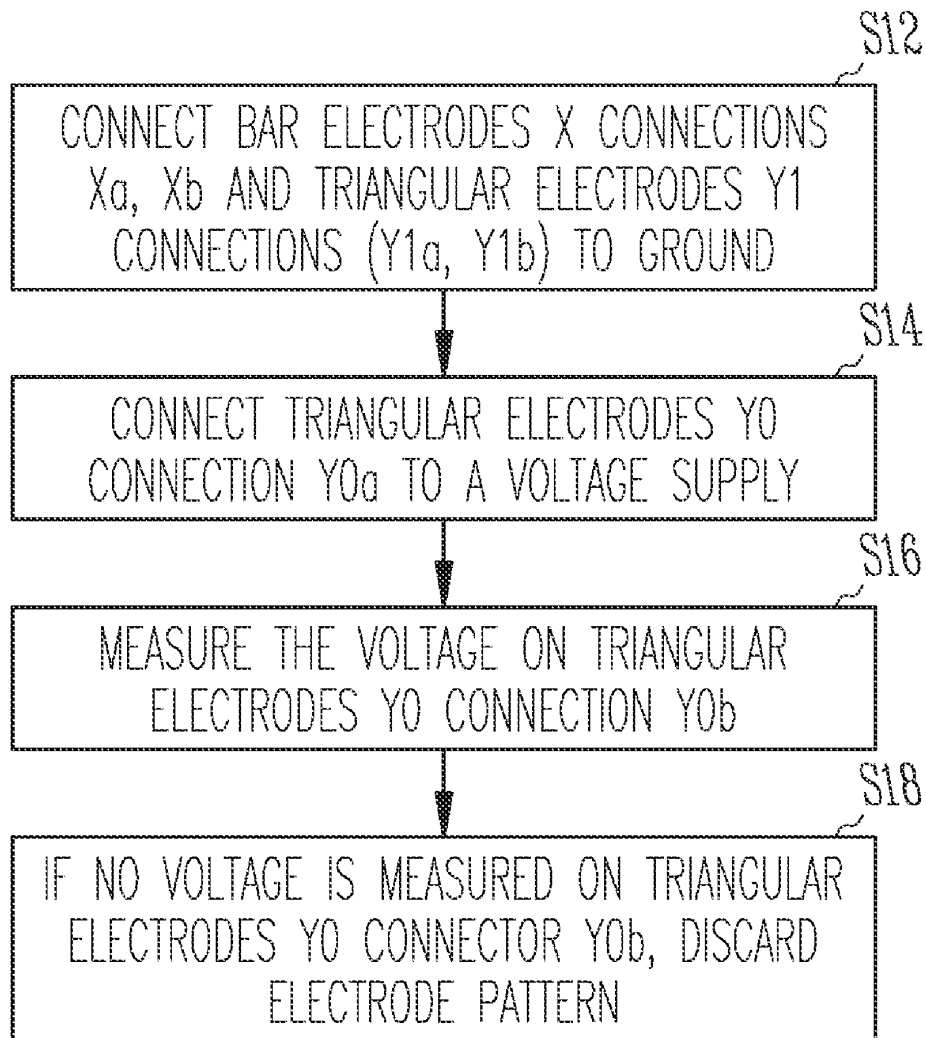
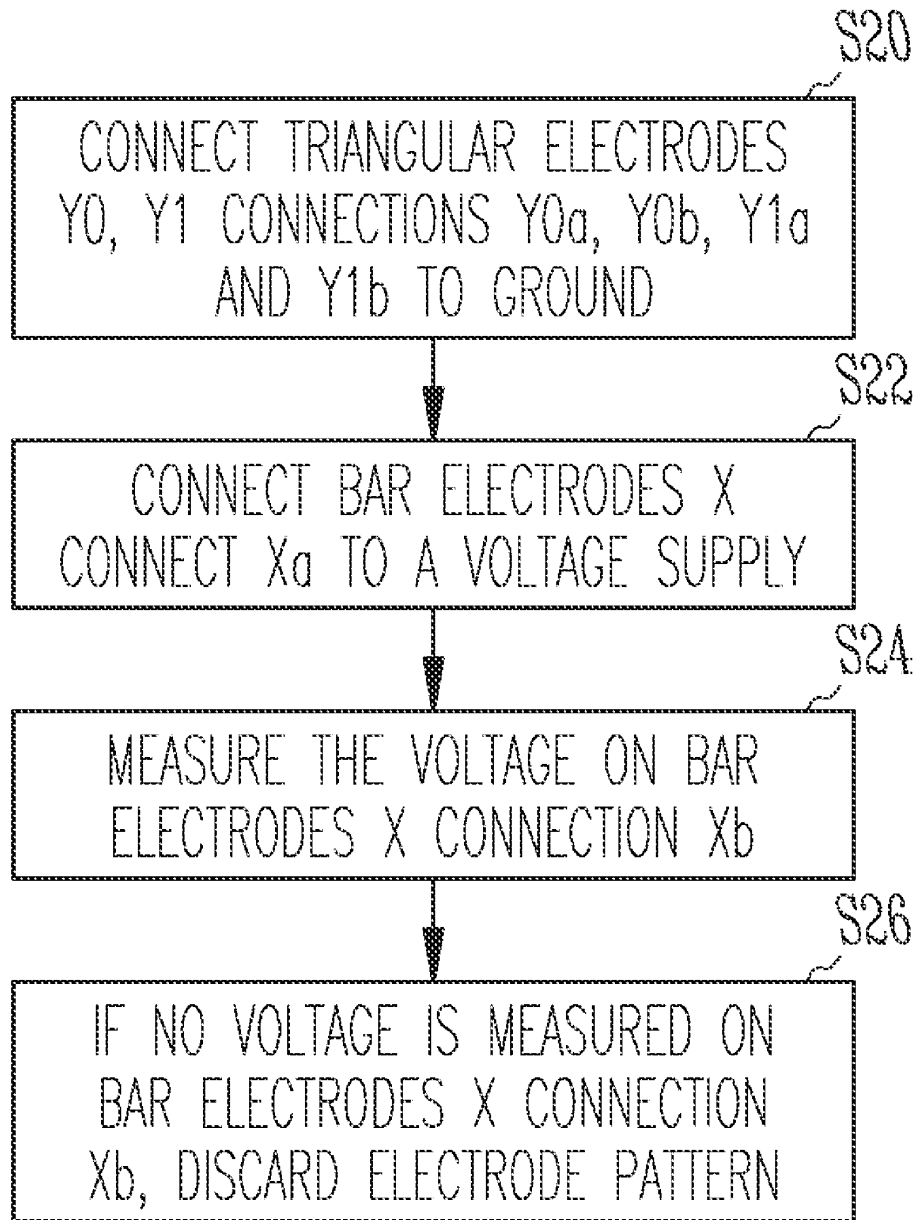


Fig. 1B



*Fig. 2C*

*Fig. 2D*

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