

[54] CAPACITIVE TOUCH SWITCH ARRANGEMENT

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[73] Assignee: General Electric Company, Louisville, Ky.

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[51] Int. Cl.<sup>4</sup> ..... G08C 9/00

[52] U.S. Cl. .... 340/365 C; 200/5 A; 200/DIG. 1; 340/365 R

[58] Field of Search ..... 340/365 C, 365 E, 365 R, 340/365 S, 365 A; 400/479.1; 200/DIG. 1, 5 A; 179/90 K; 219/10.77

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 Assistant Examiner—Michael F. Heim  
 Attorney, Agent, or Firm—H. Neil Houser; Radford M. Reams

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[57] ABSTRACT

A capacitive attenuator type touch switch cell arrangement employs a touch responsive pad or electrode and a receiver electrode of comparable surface area on opposing surfaces of a dielectric substrate for capacitive coupling therebetween, which capacitive coupling is alterable by the human touching of or proximate to the touch pad. A scan signal is coupled from signal generating circuitry to the touch responsive pad by a separate transmitting capacitor. Signal detection circuitry senses the signal coupled to the receiver electrode to detect attenuation of the coupled signal signifying the touching of the touch pad. The use of a separate capacitor to provide the transmitting capacitance reduces the touch pad area requirement, thereby permitting closer spacing of touch switch cells for greater switch density on a control panel.

10 Claims, 15 Drawing Figures

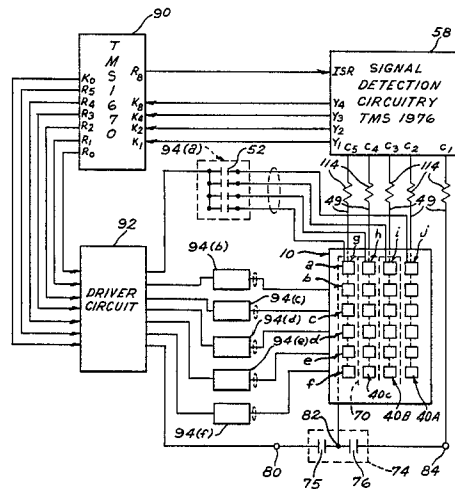


FIG. 1

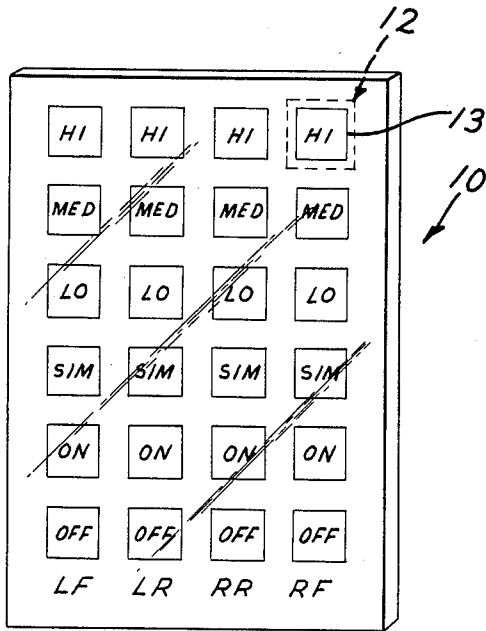


FIG. 9

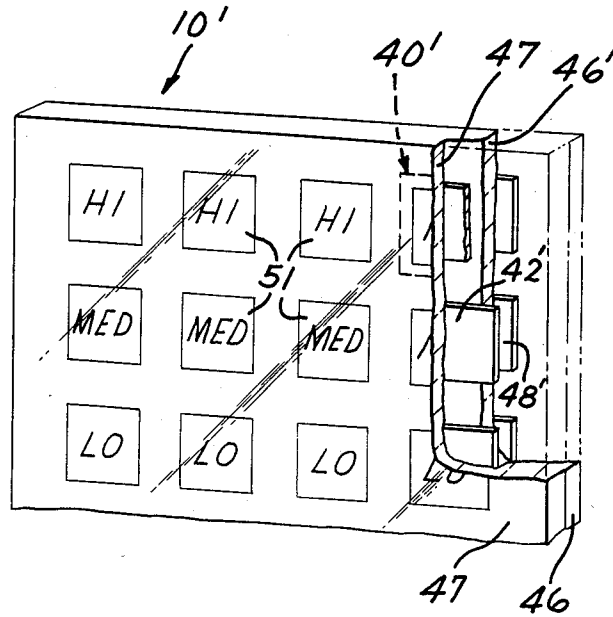
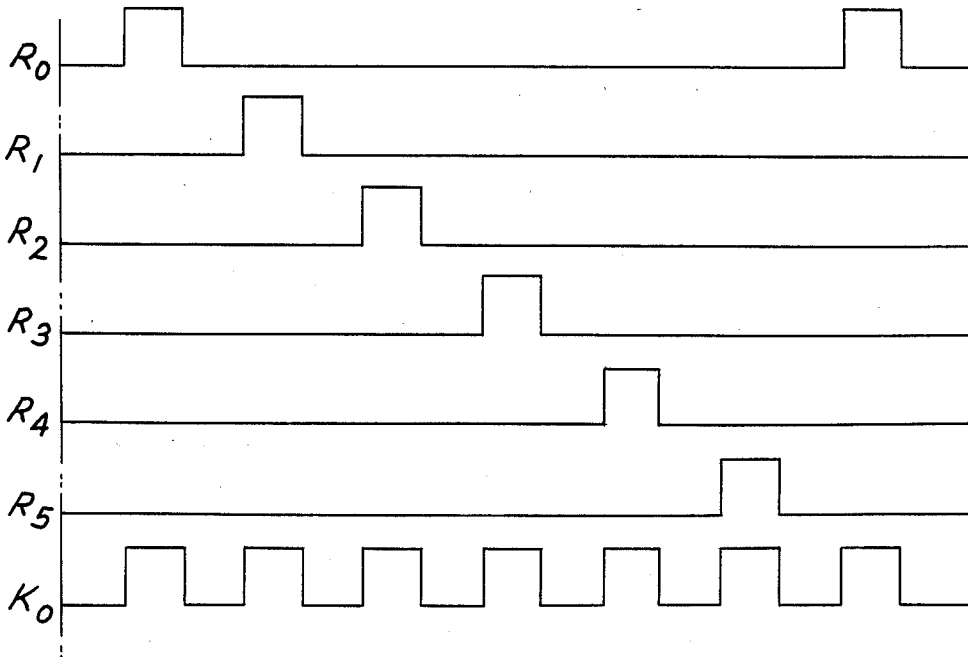
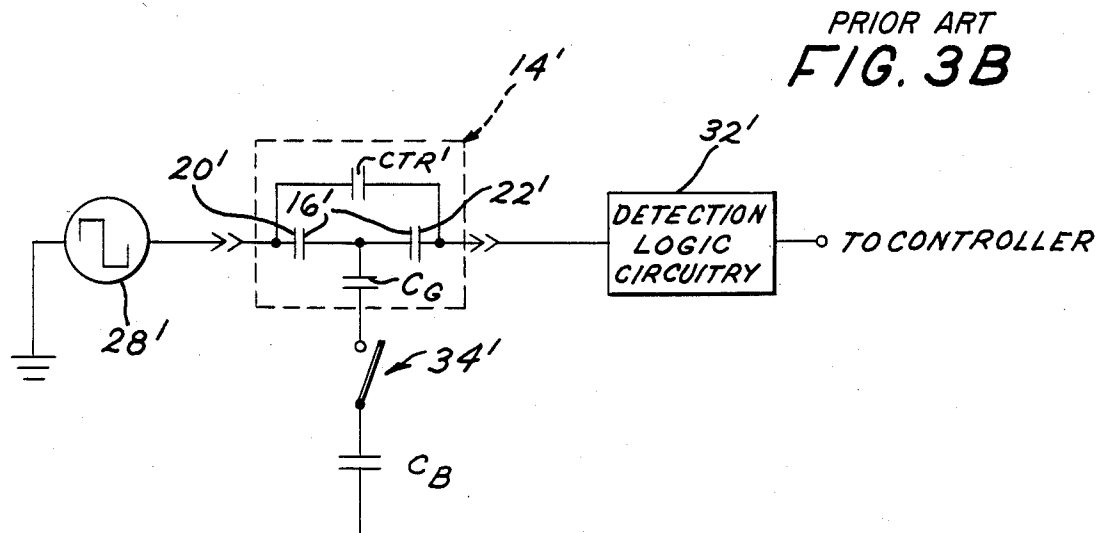
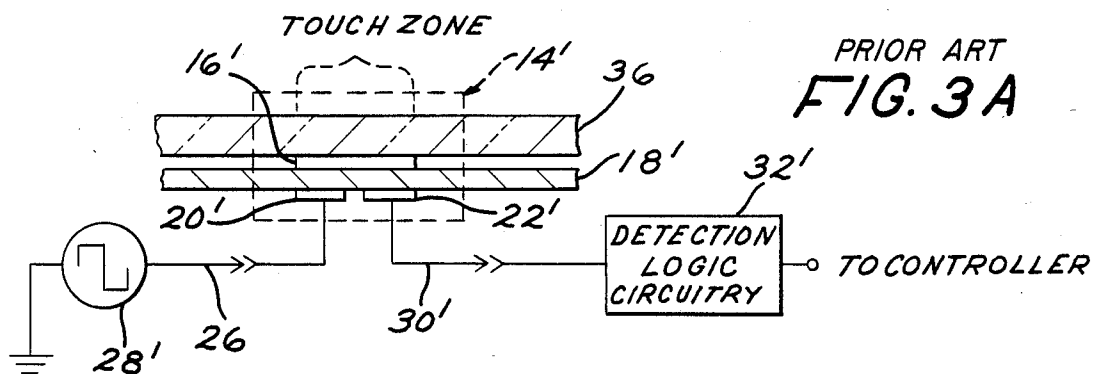
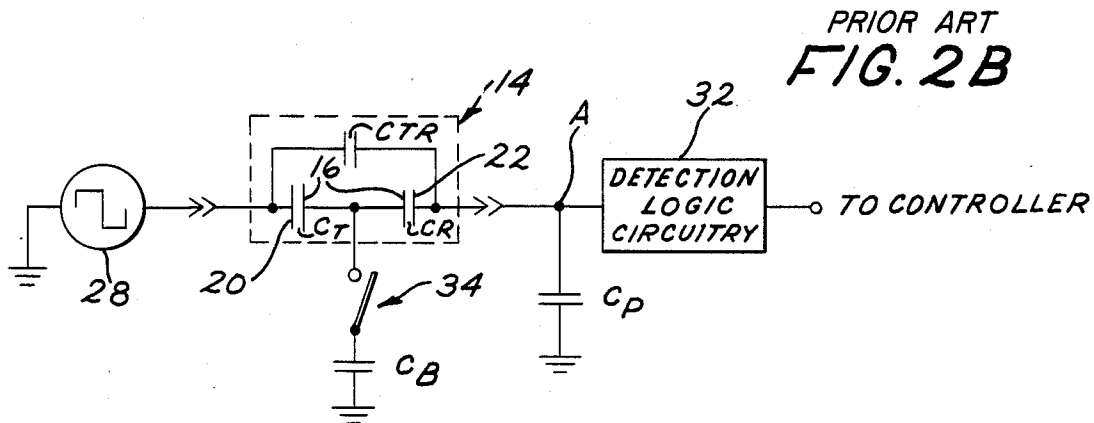
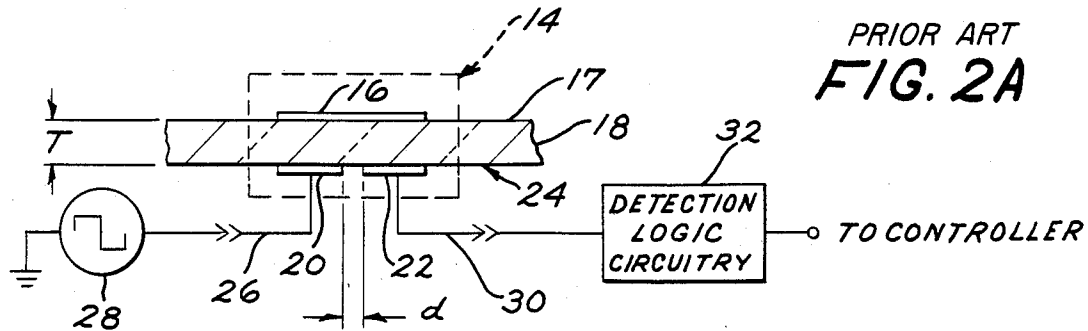


FIG. 7





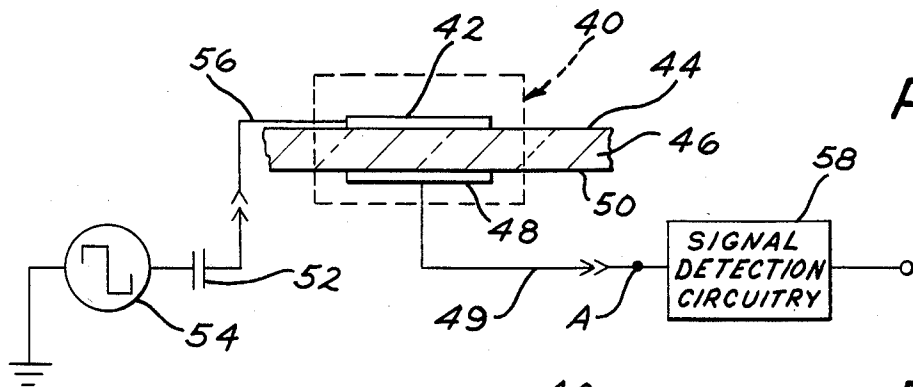


FIG. 4A

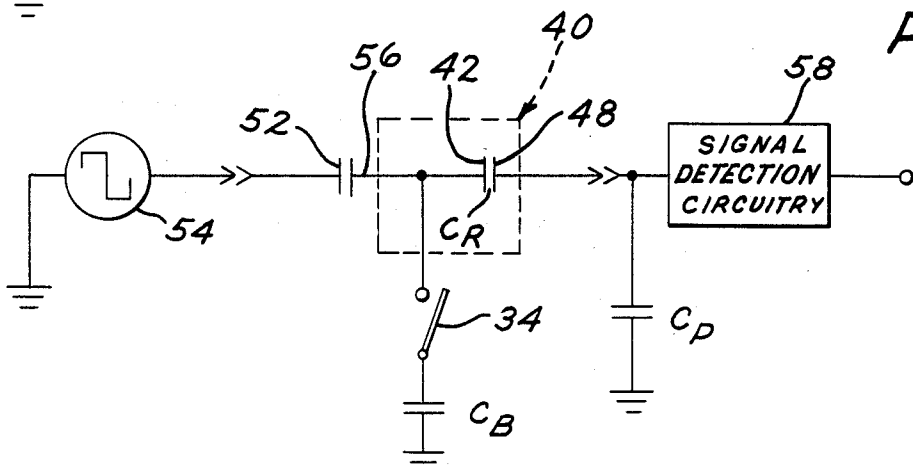


FIG. 4B

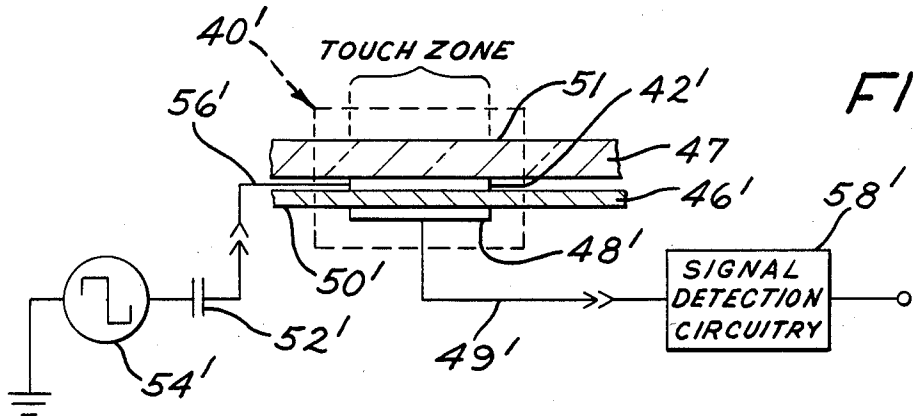


FIG. 8A

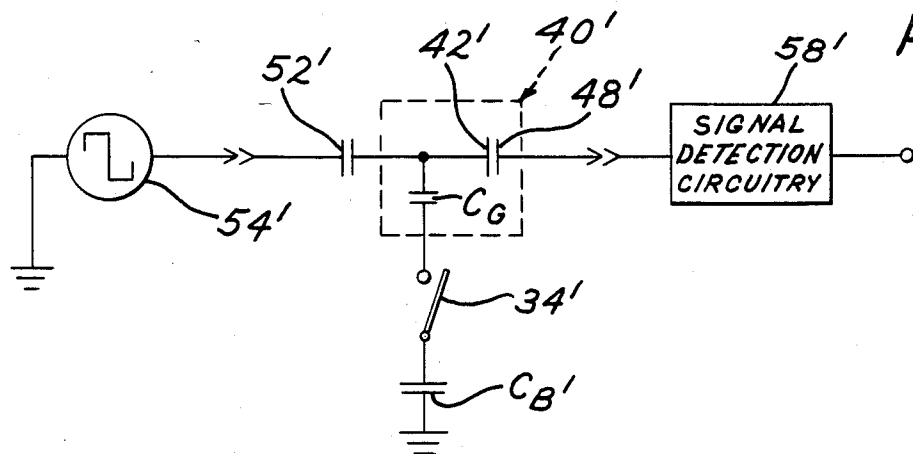


FIG. 8B

FIG. 5A

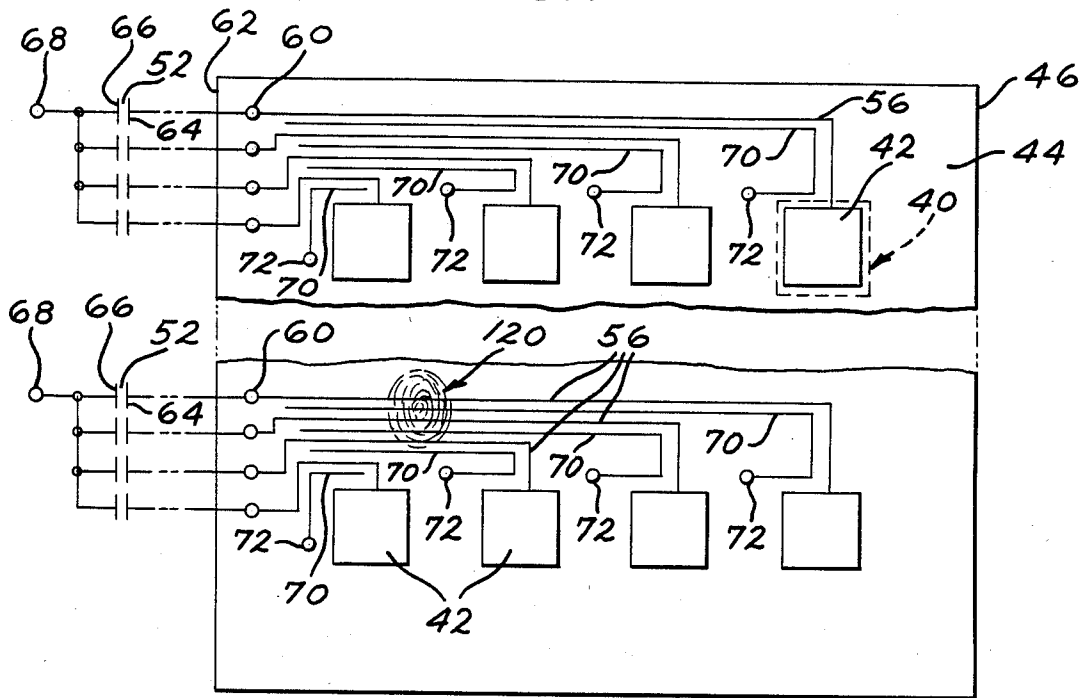
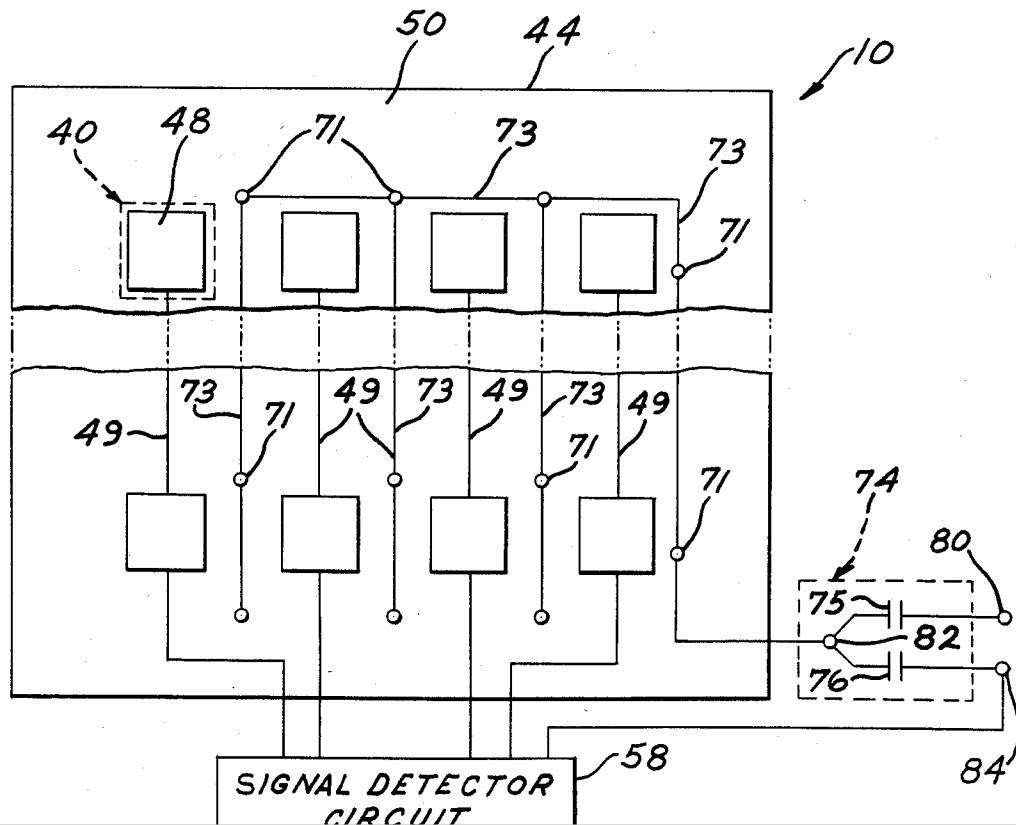


FIG. 5B



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