Exhibit: UUSI-2002
Filed: April 23, 2019

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.
Petitioner

v.

UUSI, LLC dba NARTRON
Patent Owner

Case IPR2019-00355
Patent No. 5,796,183

DECLARATION OF DAVID W. CALDWELL
IN SUPPORT OF PATENT OWNER PRELIMINARY RESPONSE

I, David W. Caldwell, declare and state as follows:

1. I and co-inventor of U.S. Patent 5,572,205 on a "Touch Screen Control System. I make this declaration in support of Patent Owner UUSI, LLC d/b/a/ Nartron's Preliminary Response in this IPR proceeding.

2. At the time of invention that resulted in the '205 patent, I was employed by Donnelly Technology, Inc. in Holland, Michigan, together with my co-inventor, Nicholas W. Medendorp. Accordingly, we assigned the invention to Donnelly.

3. The '205 pertains to capacitance-responsive touch-control input devices on horizontal substrates, such as smooth-top induction, radiant, and halogen burner cooking appliances. In the specification, we illustrated the touch control in Figure 1:

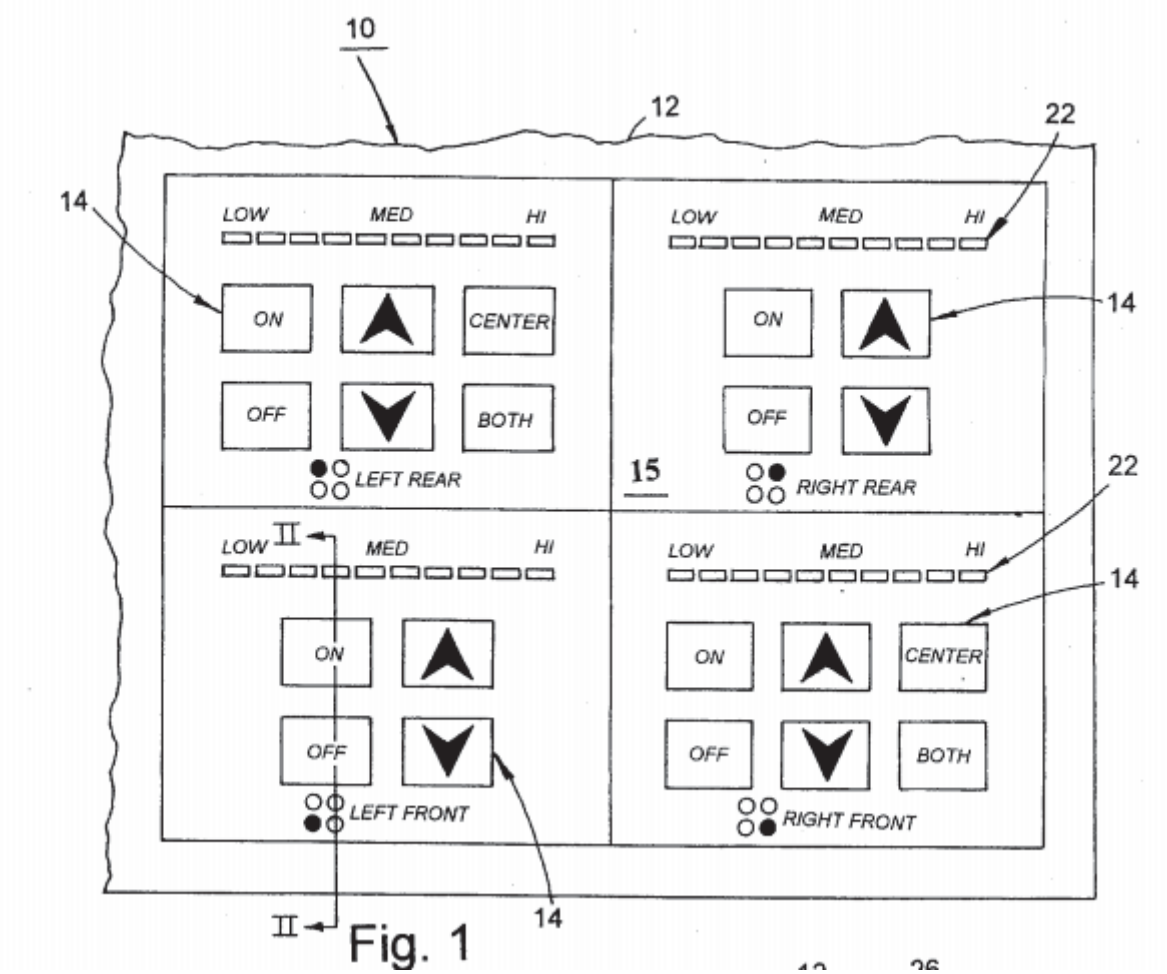

Fig. 1

4. The invention addresses issues unique to horizontal touch-control surfaces such as interference with the touch controls from liquids spilled on a cooktop. Rather than avoid interference from spills by separating the touch control from the cooking surface or by using guard rings around the touch-control, the patent teaches several alternative solutions. First, the invention uses a source signal generator that inputs a high frequency signal—a single frequency in the range between 150 kHz and 500 kHz—to the drive lines of the touch keypad sequentially from a demultiplexer at the direction of a microcontroller. Col 2, lns.

26-30; col. 6, ln 18.) Within a single touch pad, the touch pad couples the electrical signal to another portion of the touch pad in order to develop a detection signal, and responds to the presence of a user's capacitance to selectively attenuate the detection signal. A decoding circuit responds to the detection signal in order to determine the presence of the capacitance of a user. Col. 2, lns. 22-25. This circuit is illustrated in Figure 5:

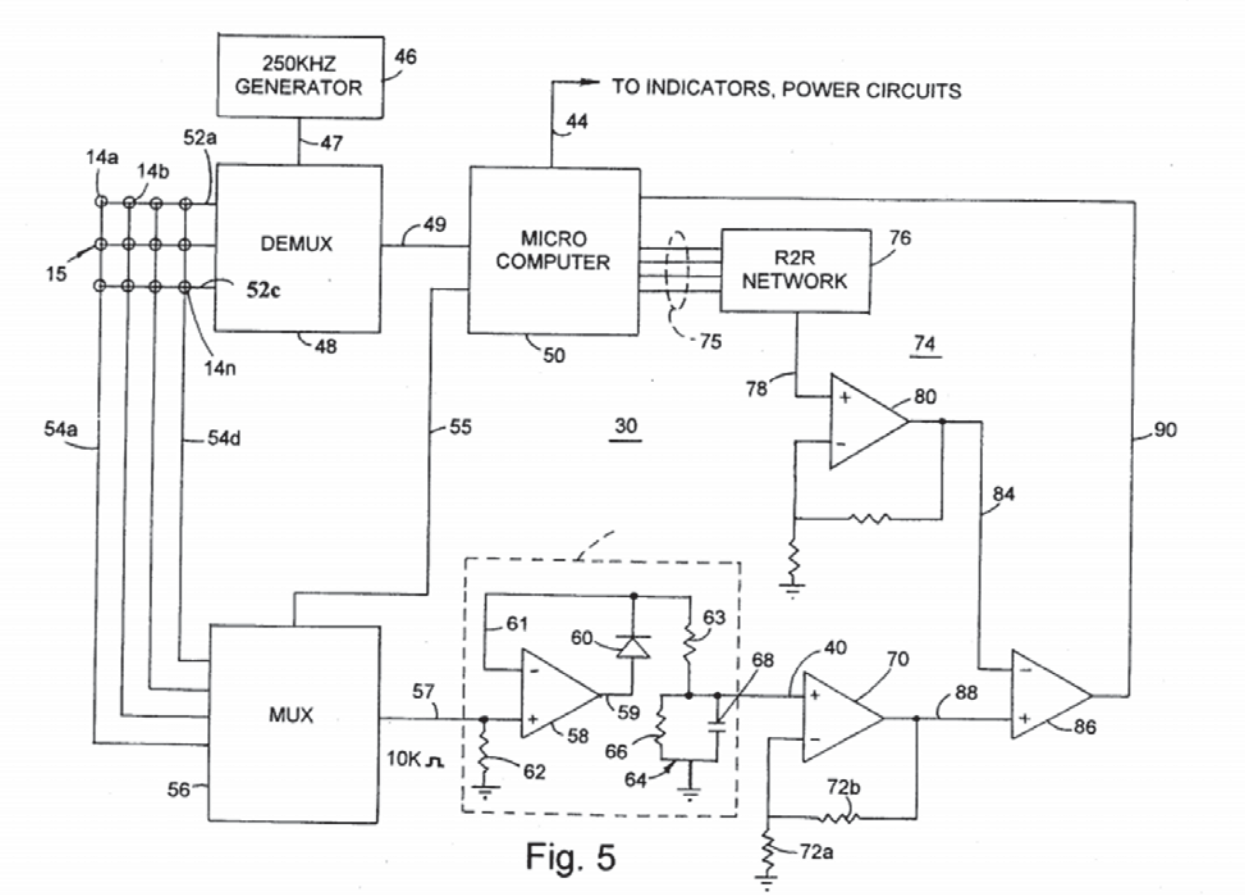

Fig. 5

5. Second, the invention juxtaposes the display with the substrate's modulated surface to provide visual indications to a user. Col. 3, lns. 3-12. An optical correction material is provided between the display and the substrate, which

corrects optical distortion of the visual indications of the display caused by the modulated surface. The optical correction material is a transparent adhesive that adheres a flexible carrier carrying the display device or the touch pad flexible conductor to the glass substrate. *Id*.

6. The invention uses a high frequency signal to address a problem particular to touch-control cooktops: "cross-coupling" that can occur between adjacent regions of a single touch pad (not adjacent touch terminals) when contaminants "spill on the support surface of a smooth-top cooking appliance causing erroneous operation of a touch control applied directly to the support surface…." Col 1, lns.11-38; Col 5, lns.13-23. The adjacent regions of a single touch pad 14 are shown as 16a and 16b in Figure 4:

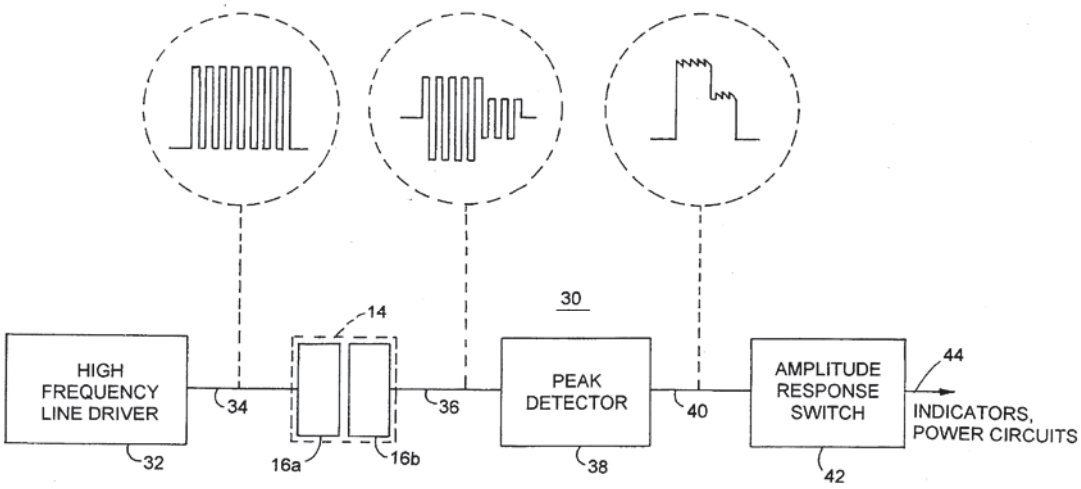

Fig. 4

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