

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JONATHAN D. KING

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Appeal 2007-1231  
Application 10/186,922<sup>1</sup>  
Technology Center 2100

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Decided: May 15, 2007

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*Before:* LANCE LEONARD BARRY, JAY P. LUCAS, and MARC S. HOFF, *Administrative Patent Judges.*

HOFF, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Appellant appeals from a final rejection of claims 1-14 under authority of 35 U.S.C. § 134. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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<sup>1</sup> Application filed July 2, 2002. The real party in interest is Maytag Corporation of Newton, Iowa.

Appellant's invention relates to a circuit for identifying which version of a user interface is attached to an appliance controller. In the words of the Appellant:

The user interface is identified by the controller through one or more shorts in a keypad matrix of the user interface. The controller executes a keypad matrix scan in order to detect the presence or absence of the one or more shorts in the keypad matrix. The shorts, or lack thereof, signal the identity of the particular user interface employed in the appliance. Based upon the identified user interface, the proper set of software or firmware associated with the particular model appliance is executed by the controller (Br. 2: 16-22).

Claims 1 and 10 are exemplary:

1. A method of identifying a select user interface connected to a universal controller for a domestic appliance comprising:

assembling the domestic appliance with the controller and the select user interface having an associated keypad matrix;

initiating a keypad matrix scan;

signaling shorts sensed during the keypad matrix scan to the controller; and

establishing a set of pre-stored operational firmware, corresponding to the select user interface, to be executed by the controller of the domestic appliance based on the shorts signaled in the keypad matrix.

10. A domestic appliance comprising:

a control panel including a predetermined user interface having a plurality of control elements for selecting a desired one of a plurality of available operating cycles for the appliance, said plurality of control elements defining a keypad matrix corresponding to the predetermined user interface;

a controller, linked to the control panel, for establishing the one of the plurality of desired operating cycles, said controller being configured to operate with a plurality of distinct user interfaces; and

means for performing a scan of and signaling shorts in the keypad matrix in order to automatically identify the predetermined user interface of the control panel.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Payne US 5,412,291 May 2, 1995

The rejections as presented by the Examiner are as follows:

Group I: Claims 1-13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Payne.

Group II: Claim 14 stands rejected under 35 U.S.C. § 103(a) as being obvious over Payne.

Appellant contends that the claimed subject matter is not anticipated by Payne, or rendered obvious by Payne alone, in that Payne does not teach scanning a keypad matrix and signaling shorts sensed during that scan, in an effort to identify the particular user interface attached to a universal controller for an appliance. The Examiner contends that each of the two groups of claims is properly rejected.

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made but chose not to

make in the Briefs have not been considered and are deemed to be waived.

*See 37 C.F.R. § 41.37(c)(1)(vii) (2004).*<sup>2</sup>

## ISSUE

The issue in the appeal before us is whether Payne teaches scanning a keypad matrix for an appliance, signaling the presence of shorts during the scan to a controller, and identifying the appliance's user interface based on the signals received during the keypad matrix scan.

## FINDINGS OF FACT

1. Appellant invented a system and method for identifying which version of a user interface is attached to an appliance controller (Specification 3: 1-3).
2. The controller executes a scan of the interface's keypad matrix upon initial power-up (Specification 3: 11-12).
3. The presence or absence of a shorted keypad key functions to signal to the controller the identity of the particular user interface employed (Specification 3: 12-14).
4. Payne teaches an appliance control system with automatic model determination (col. 10, l. 41 to col. 11, l. 48).

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<sup>2</sup> Appellant has not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii).

5. The appliances of Payne include a keypad (Fig. 2, “user selector switch” 42a-42d), by which a user selects such options as washer speed and water temperature (col. 6, ll. 65-68).

6. This keypad is monitored by a microcontroller using a ‘Read Keypad’ routine, in which the user’s selections are determined (col. 8, ll. 64-68).

7. Payne’s Read Keypad routine is meant to determine the appliance settings a user desires, which is distinct and apart from its Machine Type Determination routine, meant to identify the particular machine connected to the controller. The Read Keypad routine is performed during regular operation of the appliance, to effect control of the appliance based on user selections (col. 8, ll. 66-68).

8. The Read Keypad routine of Payne does not signal to the controller the presence or absence of any shorts sensed, nor does it establish a set of pre-stored operational firmware to be executed by the controller based on the shorts signaled in the keypad matrix.

9. In Payne, the Machine Type Determination routine identifies the particular appliance connected to the controller by driving certain lines attached to the appliance’s wiring harness to logic high or low, and sensing received signals on other lines (col. 10, l. 41 to col. 11, l. 48). The particular combination of received signals serves to identify the connected appliance (Id.).

10. Payne’s selector switches (any of 42a-42d) are always open during machine determination, and removing the selector switches entirely would

have no effect on the outcome of the Machine Type Determination routine (Reply Brief 3: 10-16).

11. The Examiner's principal argument is that Payne meets the claim because, as in Appellant's invention, Payne recites a process of determining machine type by initiating and performing a scan (Answer 10: 14-16).

12. The Examiner acknowledges that the keypad of Payne (Figs. 2-5, any of 42a-42d) corresponds to the "keypad matrix" claimed (Answer 3: 7).

13. The Examiner notes that Appellant's Specification explains that "a 'short' in accordance with the present invention can take various forms including an overall shorted keypad, the use of a zero-ohm jumper or other resistor or component that would simulate one or more permanently closed keys within keypad matrix 94" (Specification 6: 25 - 7: 3).

14. Because the term "short" is defined by Appellant to include a zero-ohm jumper or other resistor, the Examiner reads the jumpers taught by Payne (e.g., Figure 3, connecting pins C1.1 and C1.5, or Figure 4, connecting pins C1.2 and C1.3) as corresponding to the 'shorts' to be sensed during the claimed keypad matrix scan (Answer 11: 4-14).

15. The wiring harness connector of Payne (Figs. 2-5, any of C1a-C1d) contains no keys, buttons, switches, or other elements that a user may manipulate to select an option or enter data.

#### PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342,

1347, 51 USPQ2d 1943, 1946 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

## ANALYSIS

The Examiner contends that Payne meets the claimed invention because the jumpers taught by Payne correspond to the shorts to be sensed during the keypad matrix scan (Finding No. 14). In Payne, however, the Read Keypad routine takes place during normal operation of the appliance (Finding No. 7), and does not signal to the controller the presence or absence of any shorts sensed, nor establish a set of pre-stored operational firmware to be executed by the controller based on the shorts signaled in the keypad matrix (Finding No. 8).

Therefore, adopting the Examiner's reading of the selector switch of Payne onto the claimed "keypad matrix," we cannot find in Payne any teaching or suggestion of "signaling shorts sensed during the keypad matrix scan to the controller," nor of "establishing a set of pre-stored operational firmware ... to be executed by the controller of the domestic appliance based on the shorts signaled in the keypad matrix," as required by claim 1. Similarly, Payne does not teach or suggest "signaling a presence or absence of shorts during the keypad matrix scan to the controller," as required by claim 6, or "means for performing a scan of and signaling shorts in the keypad matrix," as required by claim 10.

The Examiner appears to suggest (Answer 10: 14-21) that one may read the wiring harness connector of Payne (Figs. 2-5, any of C1a-C1d, to which the aforementioned jumpers are connected) as corresponding to the claimed "keypad matrix." To interpret Payne in this way, however, would

be inconsistent with the meaning of “keypad” in the prior art<sup>3</sup>, i.e. a small set of keys (buttons to be pressed to indicate a selection) connected to a computer, terminal, or similar device. As noted in Finding No. 15, Payne contains no teaching of any keys or other elements a user might manipulate to select an option or enter data. As a result, we decline to equate the wiring harness connector of Payne with the “keypad matrix” recited in the claims.

Because Payne does not teach signaling a presence or absence of shorts sensed during the keypad matrix (claims 1, 6, and 10), establishing firmware to be executed by the appliance’s controller based on the shorts signaled in the keypad matrix (claim 1), or means for signaling shorts in the keypad matrix (claim 10) in order to automatically identify the predetermined user interface of the control panel (claims 6 and 10), we agree with Appellant that the Examiner has not established a *prima facie* case of anticipation for independent claims 1, 6, and 10, or for claims 2-5, 7-9, and 11-14 dependent therefrom.

#### CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner erred in rejecting claims 1-14. The rejection of those claims is reversed.

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<sup>3</sup> Appellant does not define “keypad” in his Specification.

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DECISION

The Examiner's rejections of claims 1-14 are Reversed.

REVERSED

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