

**Apple Inc., et al.,**  
*Petitioners*

**v.**

**Global Touch Solutions, LLC,**  
*Patent Owner*

IPR2015-01171 (U.S. Patent No. 7,994,726 B2)\*

IPR2015-01172 (U.S. Patent No. 7,498,749 B2)\*\*

IPR2015-01603 (U.S. Patent No. 7,498,749 B2)\*\*\*

IPR2015-01173 (U.S. Patent No. 7,329,970 B2)\*\*

IPR2015-01174 (U.S. Patent No. 7,781,980 B2)\*

IPR2015-01175 (U.S. Patent No. 8,288,952 B2)\*

**Trial Hearing**

August 3, 2016

\* Petitioners Apple Inc.; Motorola Mobility, LLC

\*\* Petitioners Apple Inc.; Motorola Mobility, LLC; Toshiba America Information Systems, Inc.

\*\*\* Petitioners Apple Inc.; Toshiba America Information Systems, Inc.

## **I. Brief Overview of the Patents**

## **II. Brief Overview of the Prior Art References**

## **III. Undisputed Issues**

## **IV. Purported Deficiencies Raised By Patent Owner**

# The Patents Are Directed To Portable Electronic Devices With Touch Sensors And Exhaustible Power Sources

**United States Patent**  
**Bruwer**

**(10) Patent No.: US 7,994,726 B2**  
**(45) Date of Patent: \*Aug. 9, 2011**

**(54) INTELLIGENT USER INTERFACE INCLUDING A TOUCH SENSOR DEVICE**

**(75) Inventor: Frederick J. Bruwer, Pearl (ZA)**

**(73) Assignee: Anateq Pty Ltd., Pearl (ZA)**

**(\*) Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.  
This patent is subject to a terminal disclaimer.

**(21) Appl. No.: 12/855,006**

**(22) Filed: Aug. 12, 2010**

**(65) Prior Publication Data**  
US 2010/0309015 A1 Dec. 9, 2010

**(60) Related U.S. Application Data**  
Continuation of application No. 12/239,369, filed on Sep. 25, 2008, now Pat. No. 7,781,980, which is a continuation of application No. 11/961,723, filed on Dec. 20, 2007, now Pat. No. 7,443,101, which is a division of application No. 11/060,329, filed on Feb. 17, 2005, now Pat. No. 7,336,037, which is a continuation of application No. 10/690,423, filed on Oct. 21, 2003, now Pat. No. 6,952,084, which is a continuation of application No. 10/365,042, filed on Feb. 12, 2003, now Pat. No. 6,650,066, which is a continuation of application No. 09/793,303, filed on Feb. 26, 2001, now Pat. No. 6,621,225, which is a continuation of application No. 09/169,395, filed on Oct. 9, 1998, now Pat. No. 6,249,089.

**(51) Int. Cl. H05B 37/00 (2006.01)**

**(52) U.S. Cl. 315/200 A; 315/129; 315/291**

**(58) Field of Classification Search** 315/129, 315/136, 200 A, 200 R, 291, 307, 360, 362, 362/202, 205, 307/87, 119, 126, 139  
See application file for complete search history.

**(56) References Cited**

**U.S. PATENT DOCUMENTS**  
2,338,078 A 12/1941 Wood 240/10.66  
2,630,517 A 3/1953 Hincar 219/266  
2,748,290 A 3/1956 Reichert 280/83.6  
2,784,290 A 3/1957 Ashton 219/220  
(Continued)

**FOREIGN PATENT DOCUMENTS**  
DE 322557 1/1984  
(Continued)

**OTHER PUBLICATIONS**  
Scheiner, Henry; "Can You Patent an LED Flashlight?"; 2 pages, Jan. 2003.  
(Continued)

**(57) ABSTRACT**  
The present invention, according to a preferred embodiment, is directed to portable electronic devices which operate on exhaustible power sources, for example, batteries. The electronic devices of the present invention comprise at least one signal switch and a microchip in communication with the switch wherein the switch is only capable of transmitting a signal to the microchip that the switch has been activated or deactivated. The microchip is in communication with the exhaustible power source of the electronic device and controls (i) the power on/off function of the device, (ii) at least one other function of the device in response to activation and deactivation signals from the switch, and (iii) an automatic shut off function in response to the receipt of an activation signal from the switch.

**30 Claims, 6 Drawing Sheets**

**(101)** **(113)** **(114)** **(105)**

Apple Inc., et al.  
Exhibit 1001  
Apple Inc., et al. v. Global Touch Solutions, Inc.  
IPR2015-01171  
Exhibit 1001, Page 001

**(10) Patent No.: US 7,994,726 B2**  
**(45) Date of Patent: \*Aug. 9, 2011**

**(54) INTELLIGENT USER INTERFACE INCLUDING A TOUCH SENSOR DEVICE**

**(22) Filed: Aug. 12, 2010**

Ex. 1001 ('726 Patent)

# The Patents Are Directed To Portable Electronic Devices With Touch Sensors And Exhaustible Power Sources

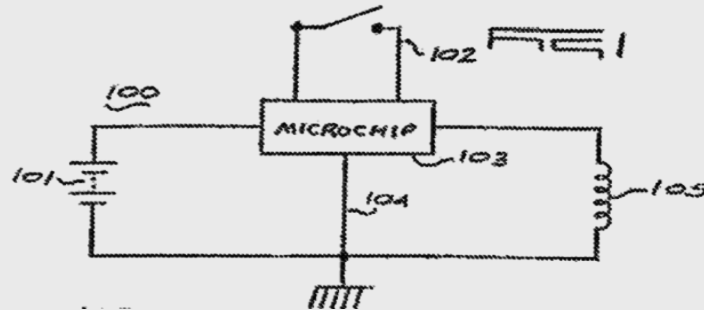
## '726 Patent

(57)

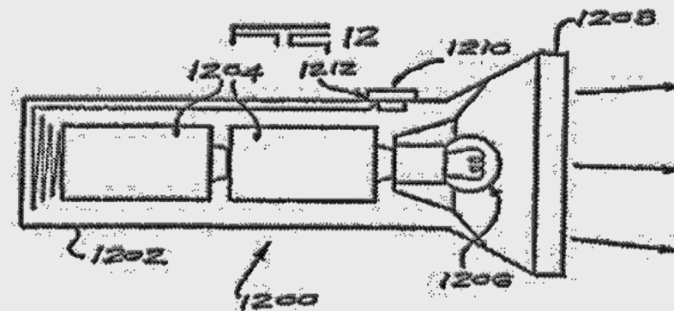
### ABSTRACT

The present invention, according to a preferred embodiment, is directed to portable electronic devices which operate on exhaustible power sources, for example, batteries. The elec-

IPR2015-01171 Ex. 1001 ('726 Patent), Abstract



IPR2015-01171 Ex. 1001 ('726 Patent), Fig. 1



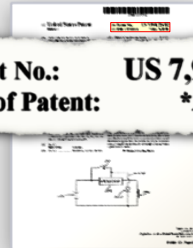
IPR2015-01171 Ex. 1001 ('726 Patent), Fig. 12



# The Patents Are Directed To Portable Electronic Devices With Touch Sensors And Exhaustible Power Sources

IPR2015-01171 Ex. 1001

(10) Patent No.: **US 7,994,726 B2**  
(45) Date of Patent: **\*Aug. 9, 2011**



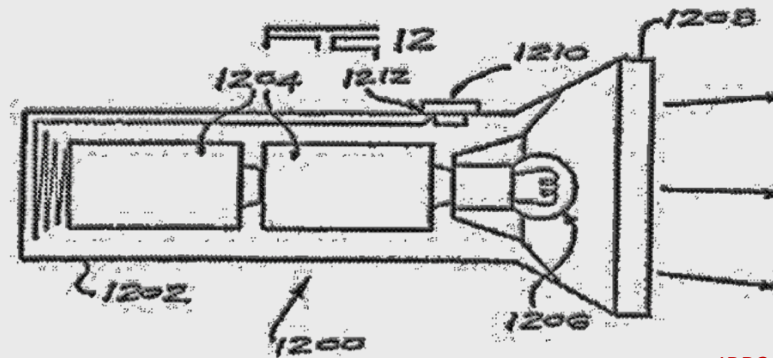
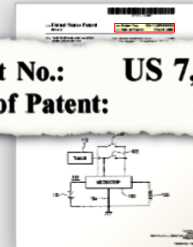
IPR2015-01172,  
IPR2015-01603 Ex. 1001

(10) Patent No.: **US 7,498,749 B2**  
(45) Date of Patent: **\*Mar. 3, 2009**



IPR2015-01173 Ex. 1001

(10) Patent No.: **US 7,329,970 B2**  
(45) Date of Patent: **Feb. 12, 2008**



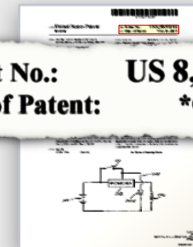
IPR2015-01174 Ex. 1001

(10) Patent No.: **US 7,781,980 B2**  
(45) Date of Patent: **\*Aug. 24, 2010**

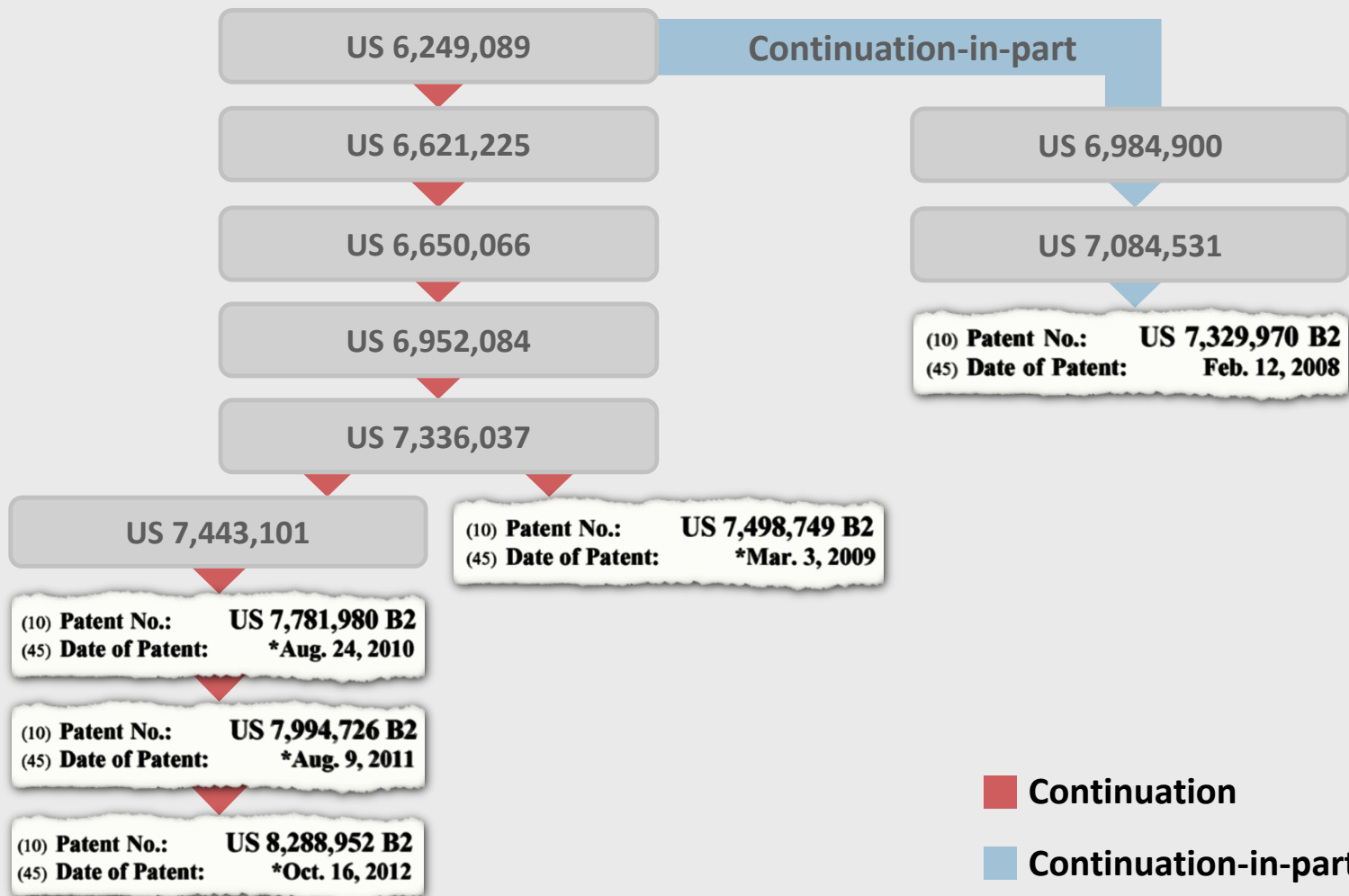


IPR2015-01175 Ex. 1001

(10) Patent No.: **US 8,288,952 B2**  
(45) Date of Patent: **\*Oct. 16, 2012**



# The Patents Are Directed To Portable Electronic Devices With Touch Sensors And Exhaustible Power Sources



## The Patents Are Directed To Portable Electronic Devices With Touch Sensors And Exhaustible Power Sources

### '726 Patent Claim 1

1. A method for controlling a product comprising a power source, or a connection for a power source, and an energy consuming load, said method including the step of providing an electronic module comprising an electronic circuit including a microchip and a touch sensor forming part of a user interface, said microchip adapted to control the activation of a visible indication in response to an activation signal received from the user interface while operation of the load is unaffected.

IPR2015-01171 Ex. 1001 ('726 Patent), Claim 1

**I. Brief Overview of the Patents**

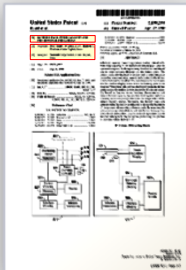
**II. Brief Overview of the Prior Art References**

**III. Undisputed Issues**

**IV. Purported Deficiencies Raised By Patent Owner**

# The Prior Art References

**Ex. 1005**



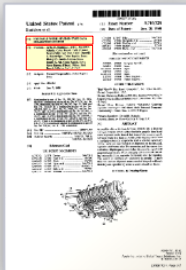
*Beard '290 Patent; IPR2015-01171 Ex. 1005*

[54] **BATTERY PACK WITH CAPACITY AND PRE-REMOVAL INDICATORS**

[75] Inventors: **Paul Beard**, Milpitas, Calif.; **Robert J. Grabon**, Cedar Rapids, Iowa

[73] Assignee: **Norand Corporation**, Cedar Rapids, Iowa

**Ex. 1007**



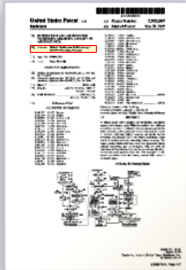
*Danielson '728 Patent; IPR2015-01171 Ex. 1007*

[54] **PORTABLE WORK STATION-TYPE DATA COLLECTION SYSTEM**

[75] Inventors: **Arvin D. Danielson**, Solon; **Darald R. Schultz**, Cedar Rapids, both of Iowa; **Dennis Silva**, San Jose, Calif.; **Darrell L. Boatwright**, Cedar Rapids, Iowa; **Rickey G. Austin**, Lisbon, Iowa; **Daniel E. Alt**, Cedar Rapids, Iowa; **Steve Darren Friend**, Felton; **Paul Beard**, Milpitas, both of Calif.

[73] Assignee: **Norand Corporation**, Cedar Rapids, Iowa

**Ex. 1006**



*Rathmann '869 Patent; IPR2015-01171 Ex. 1006*

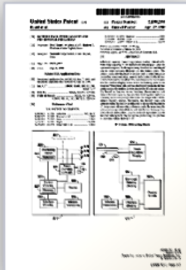
[54] **BATTERY PACK AND A METHOD FOR MONITORING REMAINING CAPACITY OF A BATTERY PACK**

[76] Inventor: **Roland Rathmann**, Raiffeisenweg 3, B-85375 Neufahrn, Germany

The smart battery device of the present invention, referred to as a **Duracell** Battery Operating System (DBOS), is

# Beard '290 Patent Discloses A Battery Pack And Terminal

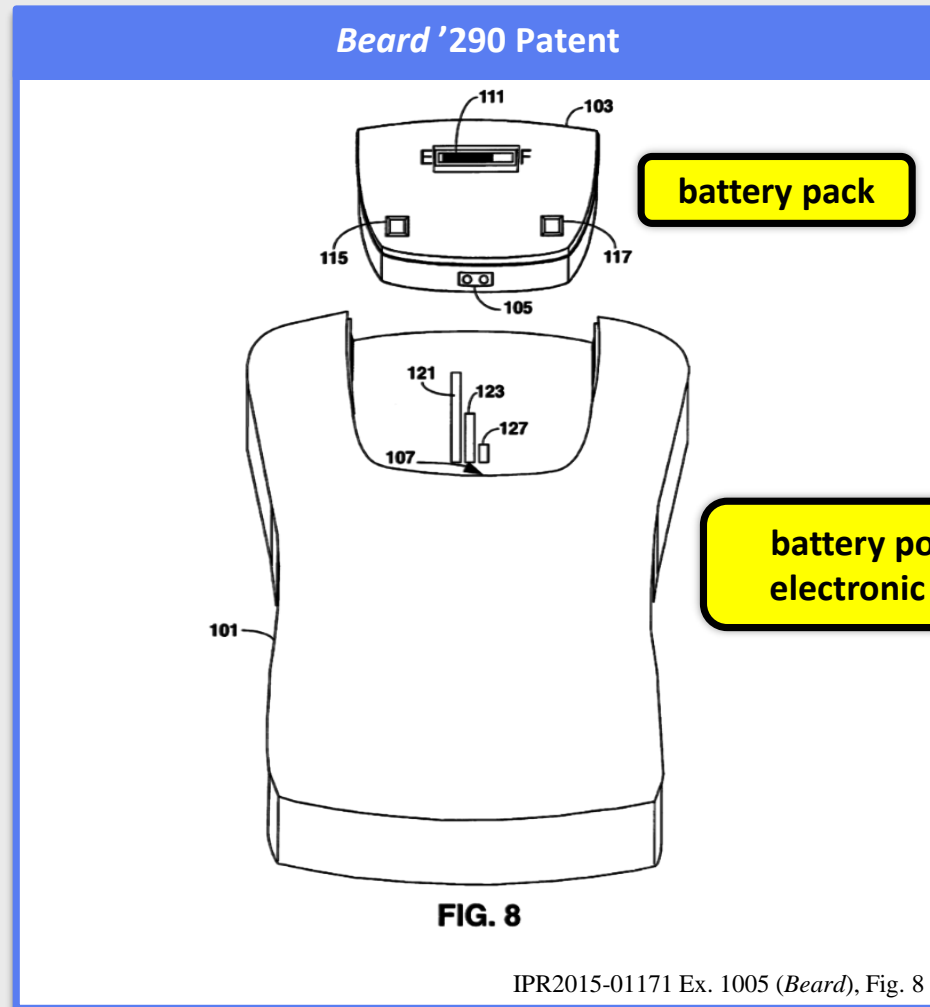
Ex. 1005



Ex. 1007



Ex. 1006



**battery pack**

**battery powered electronic device**

See, e.g., IPR2015-01171 Pet. at 11, 31; IPR2015-01172 Pet. at 10, 26; IPR2015-01173 Pet. at 11, 29; IPR2015-01174 Pet. at 11, 30; IPR2015-01175 Pet. at 10, 29; IPR2015-01603 Pet. at 13, 33

# Beard '290 Patent Discloses A Battery Pack And Terminal

## Beard '290 Patent

The battery pack 103 comprises an LCD display 111 that, upon request, provides an indication of current battery capacity. To request the indication, a user merely places one finger on a contact 115 and one finger on a contact 117 to complete a pathway monitored by a sensing circuit within the battery pack 103. In response, the display 111 is activated to display the current battery capacity. As illustrated, the battery capacity is represented in a fuel-gauge type display with "E" and "F" designating "empty" and "full", respectively.

IPR2015-01171 Ex. 1005 (*Beard*) at 9:16-33

## Beard '290 Patent

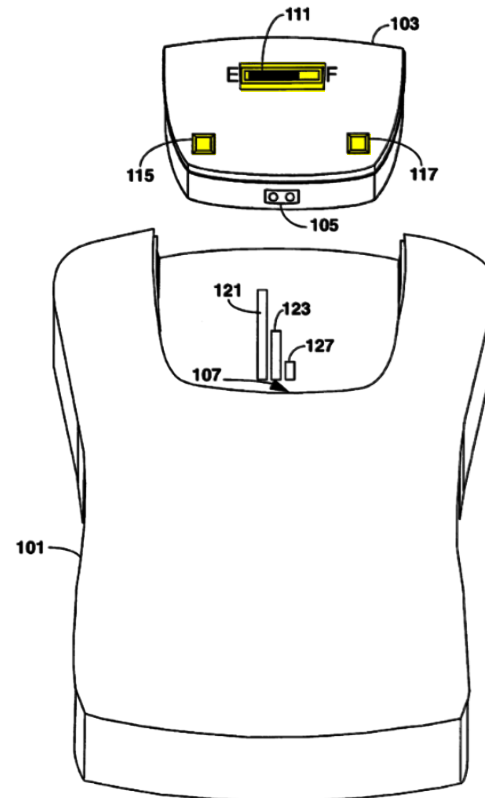


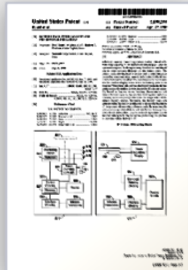
FIG. 8

IPR2015-01171 Ex. 1005 (*Beard*), Fig. 8



# Beard '290 Patent Discloses A Battery Pack And Terminal

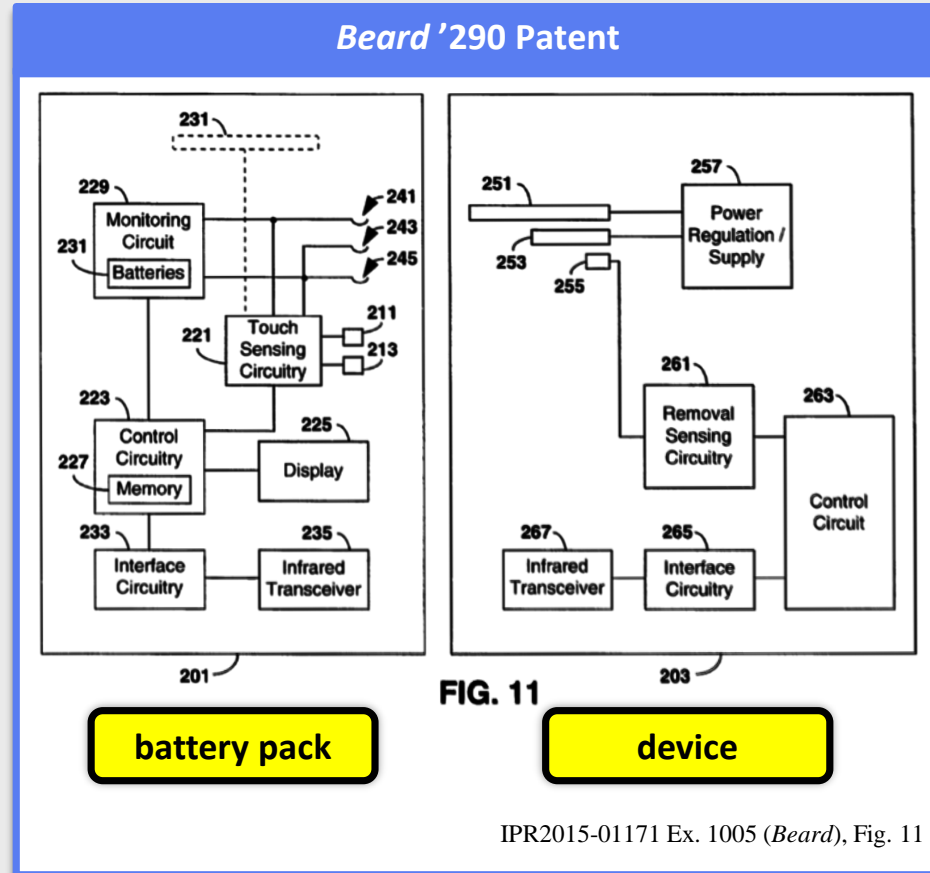
Ex. 1005



Ex. 1007



Ex. 1006



IPR2015-01171 Ex. 1005 (*Beard*), Fig. 11

See, e.g., IPR2015-01171 Pet. at 17, 31; IPR2015-01172 Pet. at 19, 26; IPR2015-01173 Pet. at 17, 29; IPR2015-01174 Pet. at 17, 30; IPR2015-01175 Pet. at 16, 29; IPR2015-01603 Pet. at 18, 33



# Beard '290 Patent Discloses A Battery Pack And Terminal

## Beard '290 Patent

When the device 303 is operational, the processor 351 periodically communicates to the battery pack 301 to retrieve **battery capacity information**. The processor 351 uses such information along with information regarding the peak, typical and minimum loading characteristics of the device 303 to estimate the **remaining operational time** achievable with the presently installed battery pack. Such

IPR2015-01171 Ex. 1005 (*Beard*) at 12:59-65

battery life. Instead of (or in addition) displaying **the percentage of available battery capacity**, the control circuitry 223 interacts with the display 225 to deliver the **time estimates** to the operator. With peak, typical and low power

IPR2015-01171 Ex. 1005 (*Beard*) at 11:45-48

## Beard '290 Patent

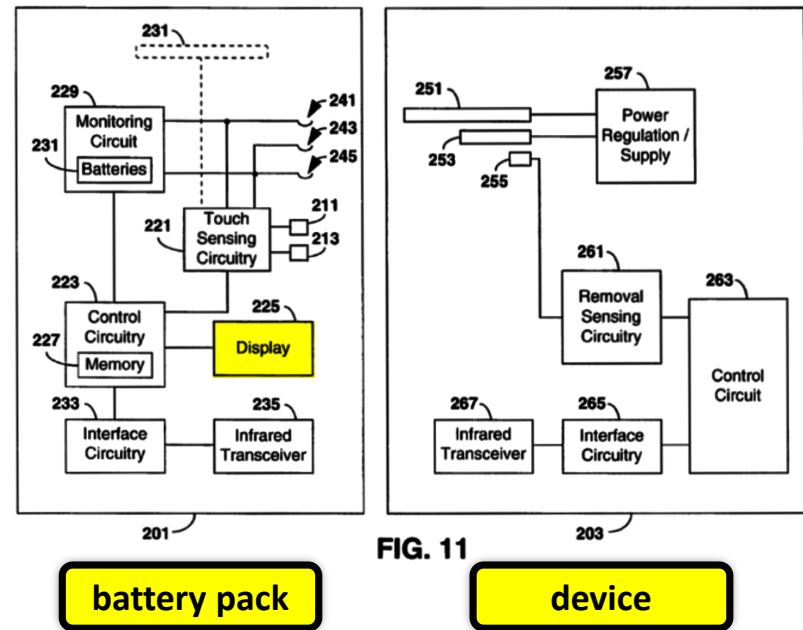


FIG. 11

IPR2015-01171 Ex. 1005 (*Beard*), Fig. 11

# Beard '290 Patent Discloses A Battery Pack And Terminal

## Beard '290 Patent

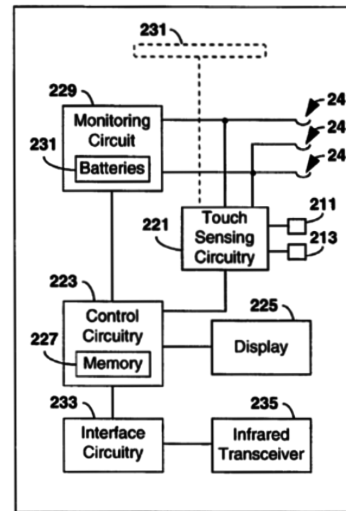
FIGS. 8–10. A battery pack 201 provides an operator with an indication of battery capacity whether or not it is inserted into a portable electronic device 203. To initiate the display

IPR2015-01171, Ex. 1005 (*Beard*) at 11:10-12

pack contact 245. When fully inserted, the battery pack contacts 241, 243 and 245 engage the corresponding contacts 251, 253 and 255, and, if sufficient power is available, the device 203 may enter a fully operational state when the operator so desires. Upon beginning to remove the battery

IPR2015-01171, Ex. 1005 (*Beard*) at 11:67-12:4

## Beard '290 Patent



201  
**battery pack**

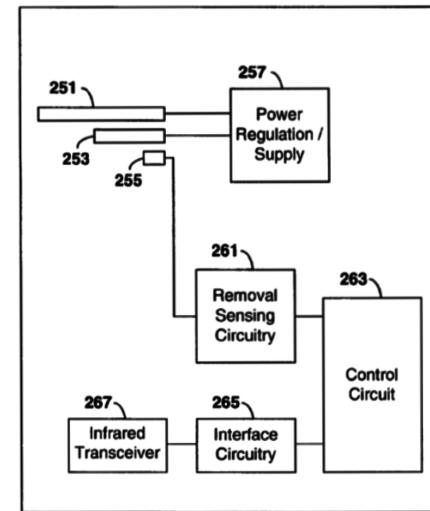
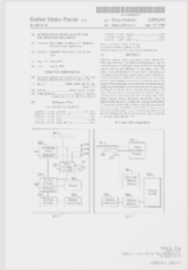


FIG. 11  
203  
**device**

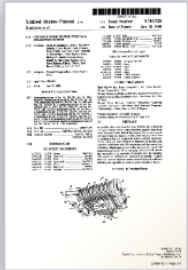
IPR2015-01171 Ex. 1005 (*Beard*), Fig. 11

# Danielson '728 Patent Discloses More Detail About The Terminal

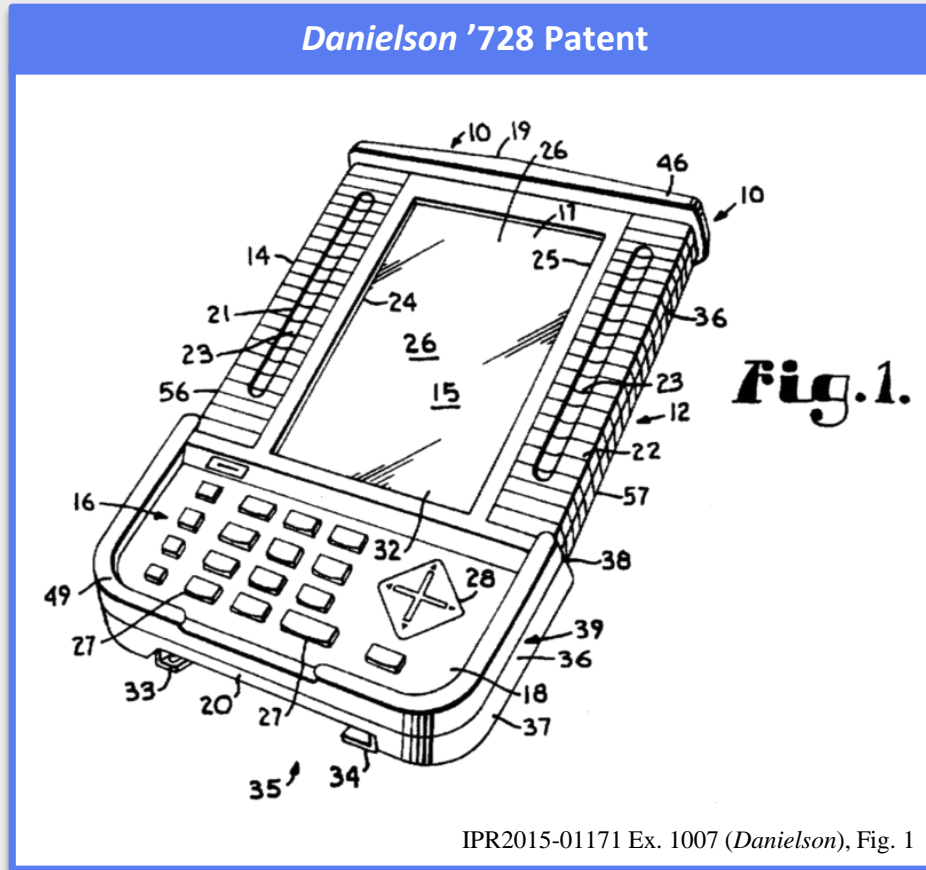
Ex. 1005



Ex. 1007



Ex. 1006



# Rathmann '869 Patent Discloses The Duracell Battery Operating System

Ex. 1005



Ex. 1007



Ex. 1006



## Rathmann '869 Patent

The smart battery device of the present invention, referred to as a **Duracell Battery Operating System (DBOS)**, is initially described in the following overview which includes the following sequential topics, ASIC Hardware, Architecture, CPU, A/D Converter, Current Measurement, Temperature Measurement, Pack Voltage Measurement, Cell Voltage Measurements, ROM, RAM, RAM Data Backup Circuit, 12C/SMBus Interface, Clock generation circuit, Wake-up comparator circuit, LED Drivers, Interface circuits, Hardware Modes of Operation, Run Mode: Entry/Exit, Sample Mode: Entry/Exit and Sleep Mode: Entry/Exit.

IPR2015-01171 Ex. 1006 (*Rathmann*) at 5:48-58

**I. Brief Overview of the Patents**

**II. Brief Overview of the Prior Art References**

**III. Undisputed Issues**

**IV. Purported Deficiencies Raised By Patent Owner**

## No Dispute Re Prior Art Priority Dates

No dispute *Beard* '290 is prior art under at least 35 U.S.C. § 102(e)

No dispute *Rathmann* is prior art under at least 35 U.S.C. § 102(e)

No dispute *Danielson* is prior art under at least 35 U.S.C. §§ 102(a) and 102(e)

## Unrebutted Testimony Re Motivation To Combine

### Beard, Petitioners' Expert

#### VIII. MOTIVATIONS TO COMBINE THE PRIOR ART

##### A. Motivation to Combine Beard with Rathmann

95. In my opinion, a POSITA would have been strongly motivated to combine the teachings of Beard with Rathmann because both patents are directed to the same problem—enabling the user of a portable, battery-pack to readily determine the current state of battery charge. A POSITA would have looked to both complementary disclosures to obtain advantages when combined, as further discussed below. *See, e.g.*, Beard at 2:29-31 (“Thus, there lies *a need* for the

\* \* \*

##### B. Motivation to Combine Beard and Rathmann with Danielson

106. Likewise, a POSITA would be highly motivated to combine Beard and Rathmann with Danielson. Beard and Rathmann disclose the hardware, software, and operation of intelligent battery packs with capacity indicators, but do not describe in detail the host products that use these intelligent battery packs, or how the host products may interact with the battery packs.

IPR2015-01171 Ex. 1003 (Beard Decl.) at ¶¶95, 103

### Morley, Patent Owner's Expert

**NO  
REBUTTAL**

## **I. Brief Overview of the Patents**

## **II. Brief Overview of the Prior Art References**

## **III. Undisputed Issues**

## **IV. Purported Deficiencies Raised By Patent Owner**



## IV. Purported Deficiencies Raised By Patent Owner

- (1) *Beard* In View Of *Rathmann* Does Not Disclose  
The Claimed “Energy Consuming Load” ('726, '749, '952, '980)
- (2) *Beard* And *Rathmann* In View Of *Danielson* Does Not Disclose  
Microchip Control Of Both The “Energy Consuming Load” And The Indicator ('970)
- (3) *Beard* In View Of *Rathmann* Does Not Disclose  
Deactivation Of A “Function” In Addition To The Visible Indicator (All Patents)
- (4) *Beard* In View Of *Rathmann* Does Not Disclose  
A Different Activation Signal For The Function ('726, '952, '970)
- (5) *Beard* In View Of *Rathmann* Does Not Disclose  
A Power Source Enclosed In The Product Housing ('726, '952, '980)
- (6) *Beard* And *Rathmann* In View Of *Danielson* Does Not Disclose  
A Touch Sensor And On/Off Switch In The Same User Interface ('726, '980)
- (7) *Beard* In View Of *Rathmann* Does Not Disclose  
The Claimed “Location Indicator” ('970)
- (8) *Beard* In View Of *Rathmann* Does Not Disclose  
Activation Of A Visible Indication Without Activating Load ('980)

## IV. Purported Deficiencies Raised By Patent Owner

Argument	'726 Patent IPR2015-01171	'749 Patent IPR2015-01172	'749 Patent IPR2015-01603	'970 Patent IPR2015-01173	'980 Patent IPR2015-01174	'952 Patent IPR2015-01175
(1) <i>Beard</i> In View Of <i>Rathmann</i> Does Not Disclose The Claimed "Energy Consuming Load"	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>
(2) <i>Beard</i> And <i>Rathmann</i> In View Of <i>Danielson</i> Does Not Disclose Microchip Control Of Both The "Energy Consuming Load" And The Indicator				<b>X</b>		
(3) <i>Beard</i> In View Of <i>Rathmann</i> Does Not Disclose Deactivation Of A "Function" In Addition To The Visible Indicator	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
(4) <i>Beard</i> In View Of <i>Rathmann</i> Does Not Disclose A Different Activation Signal For The Function	<b>X</b>			<b>X</b>		<b>X</b>
(5) <i>Beard</i> In View Of <i>Rathmann</i> Does Not Disclose A Power Source Enclosed In The Product Housing	<b>X</b>				<b>X</b>	<b>X</b>
(6) <i>Beard</i> And <i>Rathmann</i> In View Of <i>Danielson</i> Does Not Disclose A Touch Sensor And On/Off Switch In The Same User Interface	<b>X</b>				<b>X</b>	
(7) <i>Beard</i> In View Of <i>Rathmann</i> Does Not Disclose The Claimed "Location Indicator"				<b>X</b>		
(8) <i>Beard</i> In View Of <i>Rathmann</i> Does Not Disclose Activation Of A Visible Indication Without Activating Load					<b>X</b>	

## Patent Owner's Consistent Errors

**Patent Owner impermissibly reads limitations from embodiments in the specification into the claims**

**Patent Owner misreads the claim language to add new limitations not required by the claims**

**Patent Owner misreads the plain disclosure of the prior art**

## IV. Purported Deficiencies Raised By Patent Owner

- (1) *Beard In View Of Rathmann Does Not Disclose The Claimed "Energy Consuming Load" ('726, '749, '952, '980)*
- (2) *Beard And Rathmann In View Of Danielson Does Not Disclose Microchip Control Of Both The "Energy Consuming Load" And The Indicator ('970)*
- (3) *Beard In View Of Rathmann Does Not Disclose Deactivation Of A "Function" In Addition To The Visible Indicator (All Patents)*
- (4) *Beard In View Of Rathmann Does Not Disclose A Different Activation Signal For The Function ('726, '952, '970)*
- (5) *Beard In View Of Rathmann Does Not Disclose A Power Source Enclosed In The Product Housing ('726, '952, '980)*
- (6) *Beard And Rathmann In View Of Danielson Does Not Disclose A Touch Sensor And On/Off Switch In The Same User Interface ('726, '980)*
- (7) *Beard In View Of Rathmann Does Not Disclose The Claimed "Location Indicator" ('970)*
- (8) *Beard In View Of Rathmann Does Not Disclose Activation Of A Visible Indication Without Activating Load ('980)*

## Claims Require “Energy Consuming Load”

### '726 Patent Claim 1

1. A method for controlling a product comprising a power source, or a connection for a power source, and **an energy consuming load**, said method including the step of providing an electronic module comprising an electronic circuit including a microchip and a touch sensor forming part of a user interface, said microchip adapted to control the activation of a visible indication in response to an activation signal received from the user interface while operation of the load is unaffected.

IPR2015-01171 Ex. 1001 ('726 Patent), Claim 1

## Plain Meaning Of “Energy Consuming Load” Undisputed

### Beard, Petitioners' Expert

116. A POSITA would have understood this plain and ordinary meaning to be “any part of the product that consumes energy when the product is used.” The '726 patent uses the term “energy consuming load” consistently with this plain and ordinary meaning. The '726 patent specification identifies the load in two embod-

IPR2015-01171 Ex. 1003 (Beard Decl.) at ¶116

### Morley, Patent Owner's Expert

A. Okay. So I believe that something could be an energy-consuming load whether, in general, whether it's under control of a micro or not. If it's a load and it consumes energy, it's an energy-consuming load, generically speaking, yes.

IPR2015-01171 Ex. 1036 (Morley Microsoft Tr.) at 102:1-5

# PO Argues Petitioners' Construction Is Improperly Broad

## PO's Response

Petitioners and Petitioners' expert (Paul Beard) point to "any of the exemplary energy consuming components depicted in device 203 in Figure 11" of Beard for an alleged teaching of the claimed load. Paper 3 at p. 31, and Ex. 1003 at ¶ 129. **This is because the Petition relies on an improperly broad construction of "load" that entirely dissociates the load from the claimed microchip.** Ex. 2002 at ¶ 51. Consistent with this improper construction, Petitioners cite to the components

IPR2015-01171 Paper 14 (PO Resp.) at 25

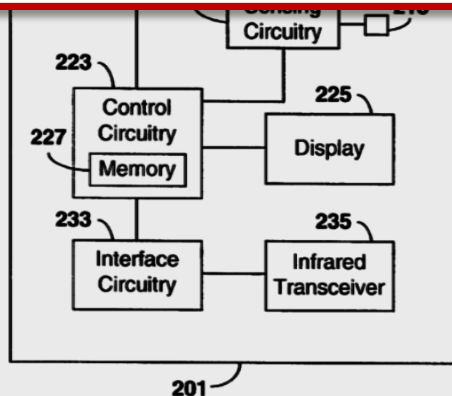
# Patent Owner Admits That *Beard* '290 Discloses "Energy Consuming Load" Under Plain And Ordinary Meaning

## Morley, Patent Owner's Expert

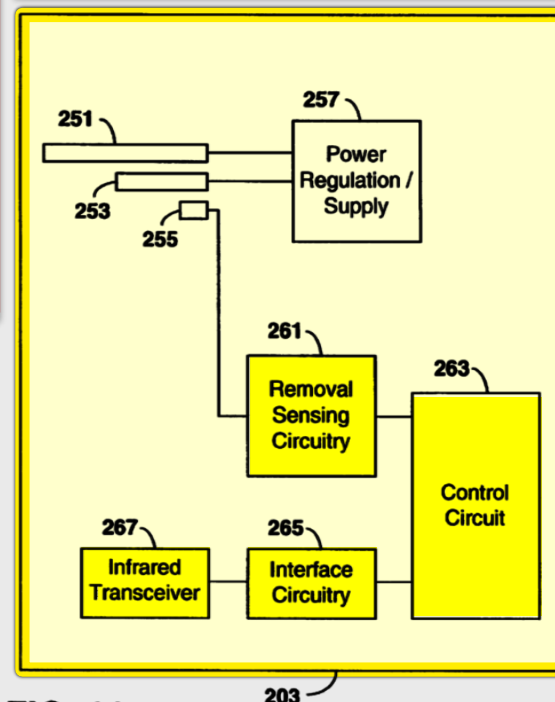
Q. So if the board does not adopt your construction of energy consuming load, but it views it as energy consuming component of the device, *Beard* would disclose that claim limitation, correct?

A. Yes.

IPR2015-01171 Ex. 1035 (Morley Tr.) at 170:2-7



## *Beard* '290 Patent



**FIG. 11**

IPR2015-01171 Ex. 1005 (*Beard*) at Fig. 11



# PO's Proposed Construction Should Be Rejected

Term	Petitioner's Proposed Construction	Patent Owner's Proposed Construction
<b>“Energy Consuming Load”</b>	plain meaning;  (“any part of the product that consumes energy when the product is used”)	“an energy-consuming component <u>that receives power from the power source under the control of the microchip</u> ”

**The issue is whether the specification disclaims or deviates from the plain and ordinary meaning**

*See, e.g.,* IPR2015-01171 Pet. at 8, Resp. at 20; IPR2015-01172 Pet. at 9, Resp. at 12; IPR2015-01173 Pet. at 9; IPR2015-01174 Pet. at 8, Resp. at 20; IPR2015-01175 Pet. at 8, Resp. at 31; IPR2015-01603 Pet. at 10, Resp. at 11

## Board Declined To Construe “Energy Consuming Load”

### Petition

#### 1. “energy consuming load”

The term “energy consuming load” is used in challenged independent claims 1 and 27. Beard Decl. at ¶ 114. A POSITA would have generally understood “energy consuming load,” as used in the claims of the ’726 patent, to have its plain and ordinary meaning. *Id.* at ¶ 115.

IPR2015-01171 Paper 3 (Petition) at 8

### Institution Decision

Petitioner proposes constructions for “energy consuming load” and “mains.” Pet. 8–10. For purposes of this decision, we determine that only “mains” requires express construction.

IPR2015-01171 Paper No. 8 (Inst. Dec.) at 4

## Claims Do Not Require Microchip To Control Power To The Load

### '726 Patent, Claim 1

1. A method for controlling a product comprising a power source, or a connection for a power source, and an energy consuming load, said method including the step of providing an electronic module comprising an electronic circuit including a microchip and a touch sensor forming part of a user interface, said microchip adapted to control the activation of a visible indication in response to an activation signal received from the user interface while operation of the load is unaffected.

IPR2015-01171 Ex. 1001 ('726 Patent), Claim 1

**The claims do not require microchip to control power to the load**

## Claims Do Not Require Microchip To Control Power To The Load

### Morley, Patent Owner's Expert

Q. There's nothing in the language of claim 1 that requires the energy consuming load to receive power under the control of the microchip, is there?

THE WITNESS: There is no specific mention of controlling that.

IPR2015-01171 Ex. 1035 (Morley Tr.) at 91:22-93:7 (objection omitted)

## Features Found In Every Embodiment Should Still Not Be Read Into The Claims

### PO's Response

Every single embodiment disclosed in the '726 Patent includes such a microchip-controlled switch that manages conducting of current to the load. *See, e.g.,* Ex. 1001 at 3:61-66, 6:66-7:4, 7:17-31, 8:56-63, 9:4-12, and FIGS. 1-7, 8A-8B, and 9-17. For example, in the embodiment of FIG. 1, the "[m]icrochip 103...

IPR2015-01171 Paper 14 (PO Resp.) at 19



**Thorner:**

“It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must ‘clearly express an intent’ to redefine the term.”

*Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362, 1365 (2012)

# PO Attempts To Limit Claims To Specific Embodiments

**PO's Response**

Namely, the "very character of the invention" disclosed in the '726 Patent is a microchip-controlled switch that manages conducting of current to the load using a man-machine interface (MMI) device (e.g., touch sensor) that itself does not conduct the current to the load. *See, e.g., Ex. 1001 at 3:61-66 and FIGS. 1-7, 8A-*  
 IPR2015-01171 Paper 14 (PO Resp.) at 16

**SUMMARY OF THE INVENTION**

According to one embodiment of the present invention, there is provided a microchip controlled switch to manage both the current conducting functions and the MMI functions in an electronic device, such as a flashlight, on a low current basis i.e. without the MMI device having to conduct or switch high current. According to one aspect of the invention, the

IPR2015-01171 Ex.1001 ('726 Patent) at 3:61-66

- 1) No mention nor definition of "energy consuming load"
- 2) Does not say microchip controls power to load

# '726 Patent Summary Of The Invention

## According to a still further embodiment

IPR2015-01171 Ex.1001 ('726 Patent) at 5:6

US 7,994,726 B2

3 determined in part determined by the memory characteristics of the section cup, after which the connection is automatically broken.

4 U.S. Pat. No. 5,138,538 discloses a flashlight having the usual components of a battery, and on-off mechanical switch, a bulb, and a hand-held housing, to which there is added a timing means and a circuit-breaking means responsive to the timing means for cutting off the flow of current to the bulb, which further has a by-pass means, preferably child-proof, to direct electric current to the light bulb regardless of the state of the timing means. The patent also provides for the operation of the device may be further enhanced by making the by-pass means a mechanical switch connected so as to leave it in series with the mechanical on-off switch. Furthermore, the patent discloses a lock or other "child-proofing" mechanism may be provided to ensure that the by-pass is disarmed when the flashlight is switched off.

5 Most conventional flashlights, like those described above, are actuated by mechanical push or slide button-type switches requiring, of course, mechanical implementation by an operator. Over time, the switch suffers "wear and tear" which impairs operation of the flashlight as a result of, for example, repeated activations by the operator and/or due to the fact that the switch has been left "on" for a prolonged period of time. In addition, such mechanical switches are vulnerable to the effects of corrosion and oxidation and contact-said switches to deteriorate and to become non-functioning. In addition, these prior art devices having these mechanical switches are generally "dumb", i.e. they do not provide the user with convenient, reliable, and affordable functionalities which today's consumers now demand and expect.

6 using touch pads, or carbon coated membrane type switches. These low current signal switches of the present invention can be smaller, more reliable, less costly, easier to seal and less vulnerable to the effects of corrosion and oxidation. Moreover, since the switch is a solid state component, it is, according to the present invention, possible to control the functions of the device in an intelligent manner by the same microchip which provides the MMI functions. Thus, by practicing the teachings of the present invention, more reliable, intelligent, and efficient electrical devices can be obtained which are cheaper and easier to manufacture than prior devices.

7 **According to another embodiment of the invention,** there is provided a microchip which can be embedded in a battery that will lend intelligence to the battery and thus, the device it is inserted into, so that many functions, including but not limited to, delayed switching, dimming, automatic shut-off, and intermittent activation may be inexpensively realized in an existing (non-intelligent) product, for example a prior art flashlight.

8 **According to a further embodiment,** the invention provides a power saving microchip which, when operatively associated with an electronic device, will adjust the average electric current through a current switch, provide an on and off sequence which, for example, but not limited to, in the case of a flashlight, can be determined by an operator and may represent either a flash code sequence or a simple on/off oscillation, provide an indication of battery strength, and/or provide a gradual oscillating current flow to lengthen the life of the operating switch and the power source.

9 **According to one embodiment of the invention,** an intelligent flashlight, having a microchip controlled switch in its pre-embodiment as set forth for controlling the on/off function of the flashlight, part of the invention, an intelligent microchip controlled switch is provided for sending activating/deactivating means, and a microchip for and at least one other function.

10 **A further embodiment of the invention** flashlight having a microchip for controlling an input means for a flashlight a microchip for controlling an input means for one and one other function of the flashlight, together in the microchip control circuit may further comprise a control-reset means, a clock means, a current switch, and/or any one or combination of the same.

11 **According to another embodiment of the invention,** there is provided a battery for use with an electrical device comprising a microchip embedded in the battery. According to still a further embodiment of the invention, a battery for use with an electronic device is provided comprising a microchip embedded in the battery wherein said microchip is adapted such that an input means external to the microchip can select the on/off function and at least one other function of the electronic device.

12 **According to one embodiment of the present invention,** there is provided an intelligent battery for use with an electronic device; the battery having positive and negative terminals and comprising a microchip embedded in the battery, preferably in the positive terminal end, for controlling off-function and at least one other function of the electronic device.

13 **According to another embodiment of the invention,** there is provided a microchip controlled switch for use in an electronic device, such as a flashlight, on a low current basis, i.e. without the MMI device having to conduct or switch high current. According to one aspect of the invention, the MMI functions are controlled by very low current signals,

14 **According to another embodiment,** the present invention is directed to a battery comprising an energy storage section, a processor, e.g. a microchip and first and second terminal ends. The first terminal end being connected to the energy storage section, the second terminal end being connected to the processor, and the processor being connected to the second terminal end and the energy storage section. The processor controls the connection of the second terminal end to the energy storage section.

15 **According to another embodiment,** the present invention provides an electronic apparatus which includes an electrical device comprising a power source, an activating/deactivating means, and a processor. The activating/deactivating means is connected to the processor and the processor is connected to the power supply. The processor controls the on/off function of the device and at least one other function of the device in response to signals received from the activating/deactivating means.

16 **While the present invention is primarily described in this application with respect to either a flashlight or a battery, therefore, the embodiments discussed herein should not be considered restrictive of the invention, and many other variations of the use of the intelligent devices of the present invention will be obvious to one of ordinary skill in the art.**

17 **BRIEF DESCRIPTION OF THE DRAWINGS**

18 FIG. 1 is a schematic of a device having a microchip controlled push button or sliding type input activation/deactivation switch according to one embodiment of the present invention.

19 FIG. 2 is a block diagram of a microchip for use in association with a push button or sliding input activation/deactivation switch according to one embodiment of the invention.

20 FIG. 3 is a schematic of a second type of intelligent device having a microchip controlled push button or sliding type input activation/deactivation switch, according to another embodiment of the invention.

21 FIG. 4 is a schematic of a device having a microchip controlled touch pad or carbon coated membrane activation/deactivation switch according to a still further embodiment of the invention.

22 FIG. 5 is a block diagram of a microchip for use in association with a touch pad or carbon coated membrane activation/deactivation switch according to one embodiment of the invention.

23 FIG. 6 is a schematic of a second type of device having a microchip controlled touch pad or carbon coated membrane activation/deactivation switch according to one embodiment of the invention.

24 FIG. 7 is a schematic of a battery having embedded therein a microchip according to a further embodiment of the invention.

25 FIG. 8A is a block diagram of a microchip for use in a battery according to one embodiment of the present invention.

26 FIG. 8B is a block diagram of a second type of microchip for use in a battery according to another embodiment of the present invention.

27 FIG. 9 is a schematic of a device having a microchip controlled switch according to one embodiment of the invention.

28 FIG. 10 is a schematic of a device having a microchip controlled switch according to one embodiment of the invention.

29 FIG. 11 is a schematic of a device having a microchip controlled switch according to one embodiment of the present invention.

30 FIG. 12 is a schematic of a flashlight having therein a microchip controlled switch according to one embodiment of the present invention.

31 FIG. 13 illustrates a possible position, according to one embodiment of the present invention of a microchip in a battery.

32 FIG. 14 is a schematic of one embodiment of the present invention of a low current switching device suitable for lighting systems in buildings.

33 FIG. 15 is a block diagram of one embodiment of the present invention, i.e. microchip 100 of FIG. 14.

34 FIG. 16 is a flow diagram for a microchip as shown in FIGS. 4 and 5 for a delayed shut-off function embodiment of one embodiment of the present invention; and

35 FIG. 17 is a flow diagram for a microchip as shown in FIGS. 7 and 8 for a delayed shut-off function embodiment of one embodiment of the present invention.

36 **DETAILED DESCRIPTION OF THE INVENTION**

37 According to one embodiment or aspect of the present invention, and referring to FIG. 1, a schematic depiction of main circuit 100 of an electronic device, for example, a flashlight, is provided, wherein the device has a microchip 100 and a microchip controlled input activator/deactivator 102. For example, a push button or sliding switch. Main circuit 100 of the device is powered by a current supplied by power source 101. Power source 101 may be any power source, e.g. a DC battery, as is well known to those of ordinary skill in the art. While the following discussion is limited to specific electronic devices, that in the flashlights, it is to be understood that the following description is equally applicable to other electronic devices including, but not limited to, toys, for example but not limited to battery operated cars, boats, planes, and/or other electrically powered toys.

38 Referring to FIG. 1, when an operator activates input push button or sliding command switch 102 to the "on" position, the microchip 100 receives a signal. Switch 102 is a direct electrical input to microchip 100. Microchip 100 is grounded by grounding means 104. Microchip 100 is in series between power source 101 and load 105. Microchip 100 also transfers

Exhibit 1001, Page 011

Exhibit 1001, Page 012

## According to another embodiment

IPR2015-01171 Ex.1001 ('726 Patent) at 4:47

## According to one embodiment

IPR2015-01171 Ex.1001 ('726 Patent) at 3:61

37 Also, currently the electrical switches used in buildings for control of lighting systems are of the conventional type of switches which must conduct, i.e. close the circuit, upon command, thus also providing the MMI. These prior art switches suffer from the same disadvantages as the switches described above in relation to portable electronic devices, i.e. flashlights. Moreover, the switches are relatively dumb in most cases and do not provide the user with a variety of functions, e.g. but not limited to timing means to enable a user, for example, a shop owner or house owner to designate a predetermined shut off or turn on point in time.

38 There is a need for inexpensive, reliable, and simple intelligent electronic devices which provide increased functionality and energy conservation.

### SUMMARY OF THE INVENTION

39 **According to one embodiment of the present invention,** there is provided a microchip controlled switch to manage both the current conducting functions and the MMI functions in an electronic device, such as a flashlight, on a low current basis, i.e. without the MMI device having to conduct or switch high current. According to one aspect of the invention, the MMI functions are controlled by very low current signals,

40 using touch pads, or carbon coated membrane type switches. These low current signal switches of the present invention can be smaller, more reliable, less costly, easier to seal and less vulnerable to the effects of corrosion and oxidation. Moreover, since the switch is a solid state component, it is, according to the present invention, possible to control the functions of the device in an intelligent manner by the same microchip which provides the MMI functions. Thus, by practicing the teachings of the present invention, more reliable, intelligent, and efficient electrical devices can be obtained which are cheaper and easier to manufacture than prior devices.

41 **According to another embodiment of the invention,** there is provided a microchip which can be embedded in a battery that will lend intelligence to the battery and thus, the device it is inserted into, so that many functions, including but not limited to, delayed switching, dimming, automatic shut-off, and intermittent activation may be inexpensively realized in an existing (non-intelligent) product, for example a prior art flashlight.

42 **According to a further embodiment,** the invention provides a power saving microchip which, when operatively associated with an electronic device, will adjust the average electric current through a current switch, provide an on and off sequence which, for example, but not limited to, in the case of a flashlight, can be determined by an operator and may represent either a flash code sequence or a simple on/off oscillation, provide an indication of battery strength, and/or provide a gradual oscillating current flow to lengthen the life of the operating switch and the power source.

43 **According to one embodiment of the invention,** an intelligent flashlight, having a microchip controlled switch in its pre-embodiment as set forth for controlling the on/off function of the flashlight, part of the invention, an intelligent microchip controlled switch is provided for sending activating/deactivating means, and a microchip for and at least one other function.

44 **A further embodiment of the invention** flashlight having a microchip for controlling an input means for a flashlight a microchip for controlling an input means for one and one other function of the flashlight, together in the microchip control circuit may further comprise a control-reset means, a clock means, a current switch, and/or any one or combination of the same.

45 **According to another embodiment of the invention,** there is provided a battery for use with an electrical device comprising a microchip embedded in the battery. According to still a further embodiment of the invention, a battery for use with an electronic device is provided comprising a microchip embedded in the battery wherein said microchip is adapted such that an input means external to the microchip can select the on/off function and at least one other function of the electronic device.

46 **According to one embodiment of the present invention,** there is provided an intelligent battery for use with an electronic device; the battery having positive and negative terminals and comprising a microchip embedded in the battery, preferably in the positive terminal end, for controlling off-function and at least one other function of the electronic device.

47 **According to another embodiment of the invention,** there is provided a microchip controlled switch for use in an electronic device, such as a flashlight, on a low current basis, i.e. without the MMI device having to conduct or switch high current. According to one aspect of the invention, the MMI functions are controlled by very low current signals,

Exhibit 1001, Page 011

Exhibit 1001, Page 012



## PO's Support Does Not Describe Microchip Control Of Power To The Load

### PO's Response

Thus, unlike conventional MMI switches that directly connect a power source to a load, central to the invention of the '726 Patent is its explicit distinction over this conventional configuration by virtue of providing a low-current MMI switch that does not itself conduct current to the load:

It is important to recognize, however, that it is control circuit 201 which activates current switch 202 upon acting on an input from MMI switch 102. Unlike heretofore known prior art devices, activating switch 102 does not conduct current to load 105, but is only a command input mechanism which can, according to the invention, operate on very low current.

*Id.* at 7:23-29.

IPR2015-01171 Paper 14 (PO Resp.) at 18

**This passage  
does not require  
the microchip to  
control power  
to the load**



## PO's Support Describes Exemplary Embodiment In Fig. 2

### '726 Patent

The structure and operational parameters of such a microchip 103 are explained in greater detail below with respect to FIG. 2. As shown in FIG. 1, power is supplied to microchip 103 by power source 101. When an operator activates input switch 102 to the "on" position it represents a command which is communicated to microchip 103. Input means 102 requires very low current in preferred embodiments. **In one embodiment of the invention,** microchip control/reset means 201 simply allows the current switch 202 to pass current provided from power source 101 to load 105 in an unimpeded manner when the MMI switch 102 is activated, and, in the case of a flashlight, illumination is obtained. It is important to recognize, however, that it is control circuit 201 which activates current switch 202 upon acting on an input from MMI switch 102. Unlike heretofore known prior art devices, activating switch 102 does not conduct current to load 105, but is only a command input mechanism which can, according to the invention, operate on very low current. For example, according to the invention, touch sensor input or carbon coated membrane type switch devices are preferred.

IPR2015-01171 Ex.1001 ('726 Patent) at 7:12-31

### '726 Patent

**FIG. 2** is a block diagram of a microchip for use in association with a push button or sliding input activation/deactivation switch according to one embodiment of the invention;

IPR2015-01171 Ex.1001 ('726 Patent) at 5:57-59

This is not the  
"very character"  
of the invention

## PO's Expert Testimony Should Be Given No Weight

### Morley, Patent Owner's Expert

A. To paraphrase that because, as you read it, it looked a little bit on the clumsy side, I would say that back to my -- I think I said this earlier -- what I think the patent teaches is an energy consuming load is a load whose power supply is controlled by the microchip. So there has to be a switch in series between the power supply, or exhaustible power supply if it's a battery -- there's the switch that is controlled by the microchip, and then there's the load downstream so that in order for power to come from the power source and get to the load, it has to go through that switch that is controlled by the microchip.

①

②

③

④

IPR2015-01171 Ex. 1035, "Morley Tr." at 88:4-19

## Applying PO's Construction Consistently Would Add A Microchip To Claims That Do Not Require One

### Claim requires a microchip:

#### '726 Patent

1. A method for controlling a product comprising a power source, or a connection for a power source, and an **energy consuming load**, said method including the step of providing an electronic module comprising an electronic circuit including a **microchip** and a touch sensor forming part of a user interface, said **microchip adapted to control the activation of a visible indication** in response to an activation signal received from the user interface while operation of the load is unaffected.

IPR2015-01171 Ex. 1001 ('726 Patent), Claim 1

### Claim DOES NOT require a microchip:

#### '749 Patent (sibling of the '726 Patent)

21. A method of implementing a user interface for a product comprising connections for a power supply and at least one **energy consuming load**, using at least a touch sensor user interface switch and a visible indicator, wherein the method includes the steps of:

- (a) activating the indicator in response to a user interface switch activation signal;
- (b) activating the indicator when the load is not activated by the user;
- (c) performing an automatic delayed deactivation of a function that was activated in response to an activation signal received via the user interface switch.

IPR2015-01171 Ex. 1041 ('749 Patent), Claim 21

**Applying PO's construction to this claim would add a microchip that is nowhere in the claim language**

## When Patentee Wished To Include A Requirement That The Microchip Control Power To The Load, It Did So

### '726 Patent

1. A method for controlling a product comprising a power source, or a connection for a power source, and an **energy consuming load**, said method including the step of providing an electronic module comprising an electronic circuit including **a microchip** and a touch sensor forming part of a user interface, said microchip adapted to control the activation of **a visible indication** in response to an activation signal received from the user interface while operation of the load is unaffected.

IPR2015-01171 Ex. 1001 ('726 Patent), Claim 1

### '970 Patent (CIP sibling of the '726 Patent)

52. A method of operating a product which includes a visible luminous indicator, an **energy consuming load** and a power source for powering the load, the method including the steps of operating a user interface switch, that is a touch sensor type switch which is not a serial link in a circuit from the power source to the load to power the load, to control the operation of **a microchip**, **using the microchip to control the connection of the power source to the load and the activation of the indicator**, and to activate the indicator to show at least one of the following when the load is not activated: a condition of the product, an activation of the switch, and a power level of the power source.

IPR2015-01171 Ex. 1037 ('970 Patent), Claim 52

## PO's Construction Contradicts Controlling Law

### '726 Patent

1. A method for controlling a product comprising a power source, or a connection for a power source, and an **energy consuming load**, said method including the step of providing an electronic module comprising an electronic circuit including a microchip and a touch sensor forming part of a user interface, said microchip adapted to control the activation of a visible indication in response to an activation signal

### '970 Patent (CIP sibling of the '726 Patent)

52. A method of operating a product which includes a visible luminous indicator, an **energy consuming load** and a power source for powering the load, the method including the steps of operating a user interface switch, that is a touch sensor type switch which is not a serial link in a circuit from the power source to the load to power the load, to control the operation of a microchip, **using the microchip to control the**



### *In re Rambus Inc.:*

“[U]nless otherwise compelled the same claim term in the same patent or related patents carries the same construed meaning.”

*In re Rambus Inc.*, 694 F.3d 42, 48 (Fed. Cir. 2012) (internal quotations and alterations omitted)

# PO Avoids Construing “Energy Consuming Load” For The '970 Patent

## '726 Patent

1. A method for controlling a product comprising a power source, or a connection for a power source, and an **energy consuming load**, said method including the step of providing an electronic module comprising an electronic circuit including a microchip and a touch sensor forming part of a user interface, said microchip adapted to control the activation of a visible indication in response to an activation signal

### Patent Owner's Proposed Construction

“an energy-consuming component that receives power from the power source under the control of the microchip”

IPR2015-01171 Paper 14 (PO Resp.) at 20

## '970 Patent (CIP sibling of the '726 Patent)

52. A method of operating a product which includes a visible luminous indicator, an **energy consuming load** and a power source for powering the load, the method including the steps of operating a user interface switch, that is a touch sensor type switch which is not a serial link in a circuit from the power source to the load to power the load, to control the operation of a microchip, using the microchip to control the

### Patent Owner's Proposed Construction

IPR2015-01171 Ex. 1039 (IPR2015-01173 PO Resp.)



## Applying PO's Construction Consistently Would Make Claim 52 Redundant

### '970 Patent (CIP sibling of the '726 Patent)

52. A method of operating a product which includes a visible luminous indicator, an energy consuming load and a power source for powering the load, the method including the steps of operating a user interface switch, that is a touch sensor type switch which is not a serial link in a circuit from the power source to the load to power the load, to control the operation of a microchip, **using the microchip to control the connection of the power source to the [energy-consuming component that receives power from the power source under the control of the microchip]** and the activation of the indicator, and to activate the indicator to show at least one of the following when the load is not activated: a condition of the product, an activation of the switch, and a power level of the power source.

IPR2015-01171 Ex. 1037 ('970 Patent), Claim 52

## PO's Reliance On *Alloc* Is Misplaced

### *Alloc*:



“[I]t is impermissible to read the one and only disclosed embodiment into a claim without other indicia that the patentee so intended to limit the invention.”

*Alloc, Inc. v. International Trade Commission*, 342 F.3d 1361, 1370 (Fed. Cir. 2003)

### Here:

**There is no ‘other indicia’ needed to limit the claims**



## PO's Reliance On *Alloc* Is Misplaced

### *Alloc*:



“The applicant expressly disavowed systems without play during prosecution of the parent '621 application. *See Middleton, 311 F.3d at 1388.*”

*Alloc, Inc. v. International Trade Commission*, 342 F.3d 1361, 1373 (Fed. Cir. 2003)

### Here:

**PO points to no express disavowal during prosecution**

## PO's Reliance On *Alloc* Is Misplaced

### *Alloc*:



“Moreover, unlike the patent-at-issue in *Sunrace*, the '907 specification also distinguished the prior art on the basis of play. *Id.*”

*Alloc, Inc. v. International Trade Commission*, 342 F.3d 1369 IPR2015-01171 (Fed. Cir. 2003)

### Here:

**'726 Patent distinguishes the prior art based on “activating switch 102 does not conduct current to the load 105,” not based on the microchip controlling power to the load**

## PO's Reliance On *Alloc* Is Misplaced

### *Alloc*:



“Here, the '907 specification indicates that the invention is indeed exclusively directed toward flooring products including play.”

*Alloc, Inc. v. International Trade Commission*, 342 F.3d 1369 IPR2015-01171 (Fed. Cir. 2003)

### Here:

**'726 Patent indicates that the disclosure is only exemplary embodiments**

IPR2015-01171 Ex.1001 ('726 Patent) at Abstract; 3:61-66; 4:12, 20, 30, 47, 56, 63; 5:6, 16, 25, 34-35, 44-49, 57-59; 7:14, 18-23; 12:21-25

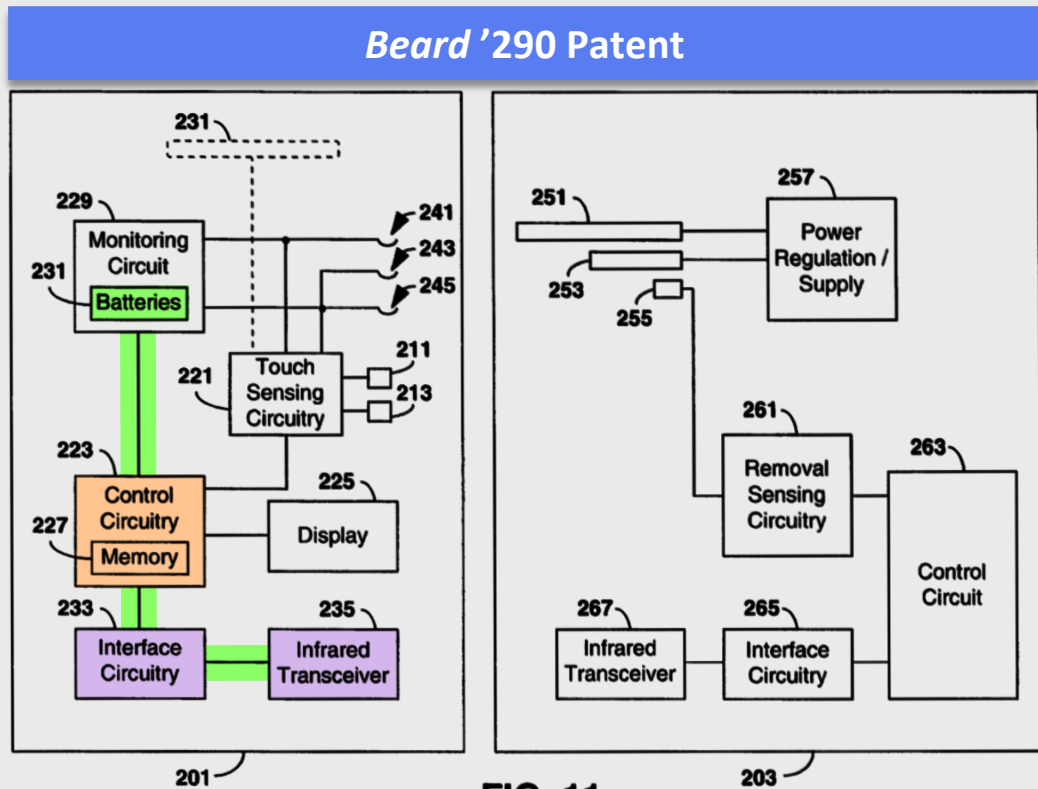
**Even Under PO's Incorrect Construction,  
*Beard* '290 Discloses An "Energy Consuming Load"**

# Even Under PO's Incorrect Construction, *Beard* '290 Discloses An "Energy Consuming Load"

**Patent Owner's Proposed Construction**

"an energy-consuming component that receives power from the power source under the control of the microchip"

IPR2015-01171 Paper 14 (PO Resp.) at 20



IPR2015-01171 Ex. 1005 (*Beard*) at Fig. 11

# Even Under PO's Incorrect Construction, *Beard* '290 Discloses An "Energy Consuming Load"

**Patent Owner's Proposed Construction**

"an energy-consuming component that receives power from the power source under the control of the microchip"

IPR2015-01171 Paper 14 (PO Resp.) at 20

**Morley, Patent Owner's Expert**

Q. Okay. Continuing along the diagram, beneath the control circuitry there's interface circuitry and an infrared transceiver that you mentioned a moment ago, right?

A. Yes.

Q. Both of those also consume energy, correct?

A. Yes.

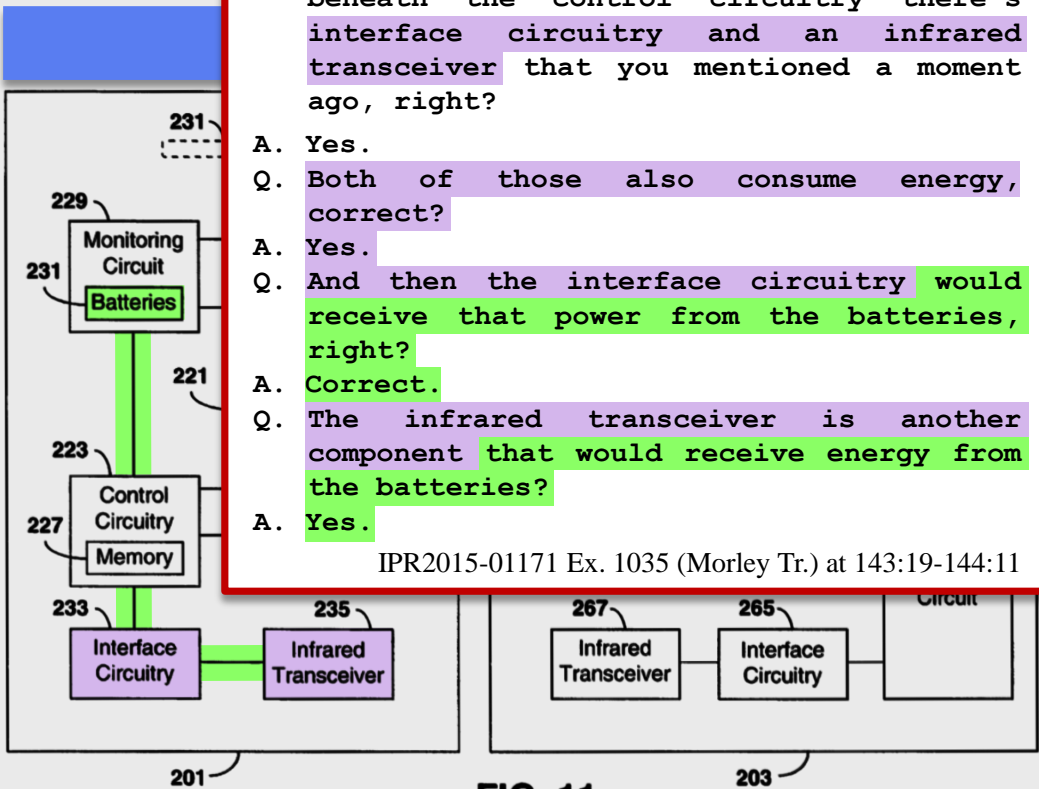
Q. And then the interface circuitry would receive that power from the batteries, right?

A. Correct.

Q. The infrared transceiver is another component that would receive energy from the batteries?

A. Yes.

IPR2015-01171 Ex. 1035 (Morley Tr.) at 143:19-144:11



**FIG. 11**

IPR2015-01171 Ex. 1005 (*Beard*) at Fig. 11

# Even Under PO's Incorrect Construction, Beard '290 Discloses An "Energy Consuming Load"

**Patent Owner's Proposed Construction**

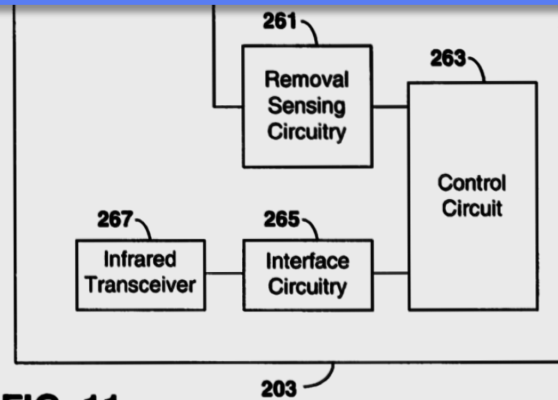
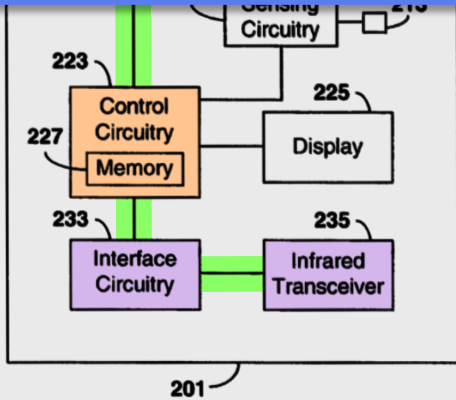
"an energy-consuming component that receives power from the power source under the control of the microchip"

IPR2015-01171 Paper 14 (PO Resp.) at 20

**Beard, Petitioners' Expert**

6. A person of ordinary skill in the art reviewing Figure 11 and the associated text in columns 11 and 12 would understand that, while not a claimed feature in the Beard patent, the arrangement of the control circuitry, batteries, infrared transceiver and interface circuitry indicates that the control circuitry controls power from the batteries to the transceiver and interface.

IPR2015-01171 Ex. 1034 (Beard Suppl. Decl.) at ¶6



**FIG. 11**

IPR2015-01171 Ex. 1005 (Beard) at Fig. 11

## IV. Purported Deficiencies Raised By Patent Owner



~~*Beard In View Of Rathmann Does Not Disclose  
The Claimed "Energy Consuming Load" ('726, '749, '952, '980)*~~

- (2) *Beard And Rathmann In View Of Danielson Does Not Disclose  
Microchip Control Of Both The "Energy Consuming Load" And The Indicator ('970)*
- (3) *Beard In View Of Rathmann Does Not Disclose  
Deactivation Of A "Function" In Addition To The Visible Indicator (All Patents)*
- (4) *Beard In View Of Rathmann Does Not Disclose  
A Different Activation Signal For The Function ('726, '952, '970)*
- (5) *Beard In View Of Rathmann Does Not Disclose  
A Power Source Enclosed In The Product Housing ('726, '952, '980)*
- (6) *Beard And Rathmann In View Of Danielson Does Not Disclose  
A Touch Sensor And On/Off Switch In The Same User Interface ('726, '980)*
- (7) *Beard In View Of Rathmann Does Not Disclose  
The Claimed "Location Indicator" ('970)*
- (8) *Beard In View Of Rathmann Does Not Disclose  
Activation Of A Visible Indication Without Activating Load ('980)*



## '970 Patent Claim 52 Expressly Requires Microchip Control Of Power To Load In Addition To Indicator

### '970 Patent, Claim 52

52. A method of operating a product which includes a visible luminous indicator, an **energy consuming load** and a power source for powering the load, the method including the steps of operating a user interface switch, that is a touch sensor type switch which is not a serial link in a circuit from the power source to the load to power the load, to control the operation of a microchip, **using the microchip to control the** <sup>1</sup>**connection of the power source to the load** and <sup>2</sup>**the activation of the indicator**, and to activate the indicator to show at least one of the following when the load is not activated: a condition of the product, an activation of the switch, and a power level of the power source.

IPR2015-01173 Ex. 1001 ('970 Patent), Claim 52

# No Dispute *Danielson* Discloses Using Microchip To Control Power To The Load

1

## Danielson '728 Patent

Pursuant to the unique power management procedure which is enabled by the described circuit function, power to the data terminal 10 may be shut down any time the data terminal 10 is not in use, or during any of a number of alarm or defect conditions. Such defect condition may occur when

IPR2015-01173 Ex. 1007 (*Danielson*) at 23:18-25

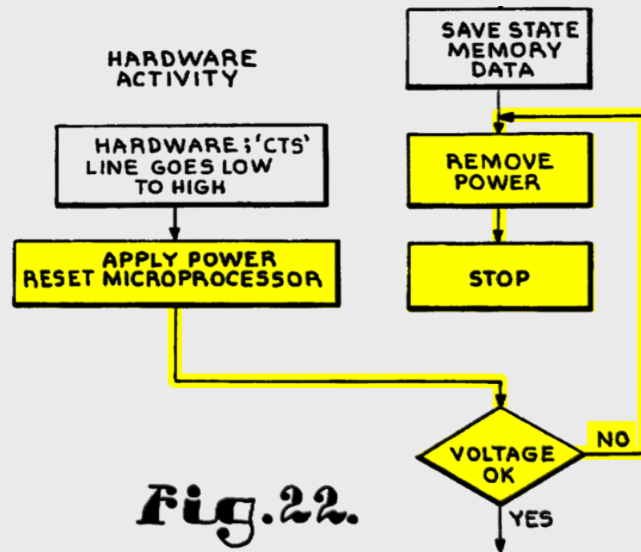


Fig. 22.

IPR2015-01173 Ex. 1007 (*Danielson*), Fig. 22 (excerpt)

## Patent Owner's Response

**NO  
DISPUTE**

# No Dispute *Beard* '290 Discloses Using Microchip To Control Activation Of The Indicator

2

## *Beard* '290 Patent

battery life. Instead of (or in addition) displaying the percentage of available battery capacity, the control circuitry 223 interacts with the display 225 to deliver the time estimates to the operator. With peak, typical and low power

IPR2015-01173 Ex. 1005 (*Beard*) at 11:45-48

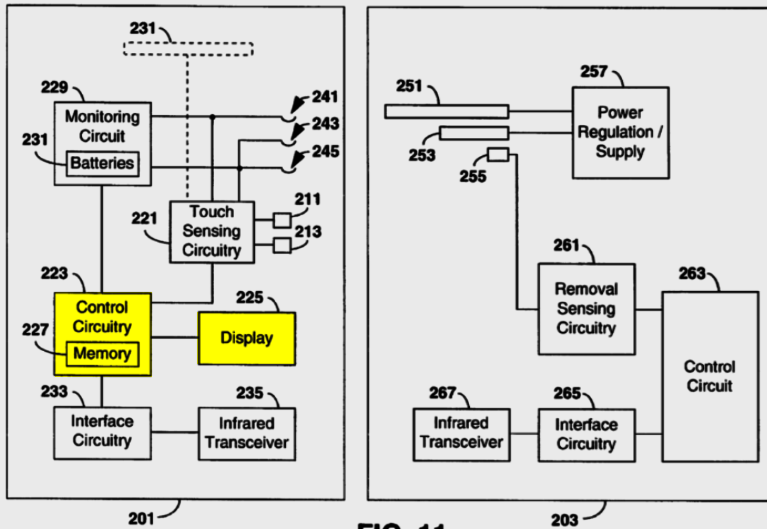


FIG. 11

IPR2015-01173 Ex. 1005 (*Beard*) at Fig. 11

## Patent Owner's Response

**NO  
DISPUTE**

**PO Contends It Would Not Have Been Obvious  
To Combine These Features In The Same Microchip**

# Beard '290 And Danielson Both Describe Starting Device Only If Sufficient Power Is Available, But Danielson Provides More Detail

POSITA needed only to use more detailed startup procedures from *Danielson* in the control circuit 223 of *Beard* '290

IPR2015-01173 Ex. 1003 (Beard Decl.) at ¶250-254

## Beard '290 Patent

pack contact 245. When fully inserted, the battery pack contacts 241, 243 and 245 engage the corresponding contacts 251, 253 and 255, and, if sufficient power is available, the device 203 may enter a fully operational state when the operator so desires. Upon beginning to remove the battery

IPR2015-01173 Ex. 1005 (*Beard*) at 11:67-12:4

## Danielson '728 Patent

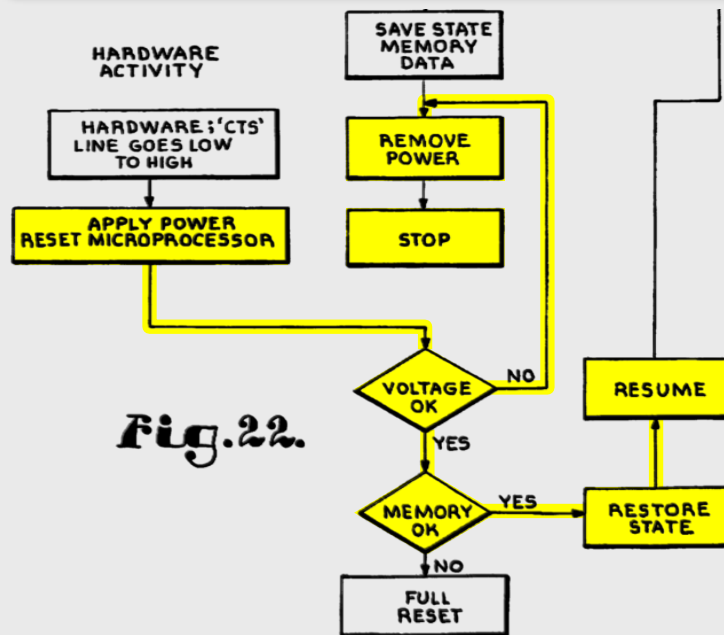


Fig. 22.

IPR2015-01173 Ex. 1007 (*Danielson*), Fig. 22 (excerpt)

## Obvious To Combine Features From Two Microchips Into One Microchip

### *Beard* '290 Patent

functions. The microcontroller 64 is preferably a Microchip PIC 16C71 microcontroller. The array of contact terminals

IPR2015-01173 Ex. 1005 (*Beard*) at 7:44-48

### Beard, Petitioners' Expert

255. Third, both Danielson and Beard are concerned with allowing a device to become fully operational only if sufficient power is available, because a device that attempts to start up without sufficient power available could crash unexpectedly without a safe shutdown. Finally, the microchip control circuit 223 in Beard would be the natural place to implement the functionality described in Danielson because, as described above in ¶ 77, this was a well-known general purpose programmable microchip capable of performing numerous functions, and as the microchip connected to the battery power source, it is the obvious choice to control the connection of the battery power source to the device load.

IPR2015-01173 Ex. 1003 (Beard Decl.) at ¶255