

Intirion DBA MicroFridge Demonstratives for Oral Argument

College Products, Inc. v. Intirion Corporation,
PGR2024-00003 (U.S. Patent No. 11,674,745B2)
PGR2024-00004 (U.S. Patent No. 11,674,746B2)
January 10, 2025



Fredrikson

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(10) Patent No.: US 11,674,745 B2
(45) Date of Patent: Jun. 13, 2023

- (58) **Field of Classification Search**
CPC H05B 6/642; H05B 6/6435; H05B 6/645;
H05B 6/6458; H05B 6/6461;
(Continued)
- (56) **References Cited**
U.S. PATENT DOCUMENTS
4,383,158 A 5-1983 Niwa
4,958,855 A * 9-1990 Shim F25D 23/12
219-486
(Continued)



U.S. Patent No.
11,674,745
("745 Patent")



(10) Patent No.: US 11,674,746 B2
(45) Date of Patent: Jun. 13, 2023

- (58) **Field of Classification Search**
CPC H05B 6/642; H05B 6/6435; H05B 6/645;
H05B 6/6458; H05B 6/6461;
(Continued)
- (56) **References Cited**
U.S. PATENT DOCUMENTS
4,383,158 A 5/1983 Niwa
4,958,055 A 9/1990 Shim F25D 23/12
219/716
(Continued)



U.S. Patent No.
11,674,746
("746 Patent")

'745 Patent, Claim 1

1. Apparatus comprising: an appliance including
a microwave oven,
a refrigerator,

at least one power control circuit, wherein the at least one power control circuit is in operative electrical connection with the microwave oven and the refrigerator,

a single power cord, wherein the single power cord is configured to be releasably connected to a source of electrical power, wherein the at least one power control circuit is supplied with electrical power only through the single power cord,

wherein the at least one power control circuit is operative to cause electrical power to be withheld from at least one component of the refrigerator when a magnetron of the microwave oven draws cooking power, and

electrical power to be delivered to the refrigerator when the magnetron does not draw cooking power,

wherein the microwave oven includes a smoke sensor, wherein the smoke sensor is positioned in operative connection with a cooking area inside the microwave oven,

is in operative connection with the at least one power control circuit,

wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session,

wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session.

'746 Patent, Claim 1

1. Apparatus comprising:

a microwave oven, wherein the microwave oven includes a magnetron, wherein the magnetron is configured to cook items in a cooking area within the microwave oven,

a smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area,

a power cord, wherein the power cord is configured to be releasably connected to a source of electrical power,

at least one externally accessible electrical connector, wherein each electrical connector is configured to deliver electrical power that is received through the power cord through the respective electrical connector to a respective electrically powered device that is outside of the microwave oven,

at least one power control circuit, wherein the at least one power control circuit is in operative electrical connection with each of the power cord, the at least one electrical connector, the magnetron, and the smoke sensor,

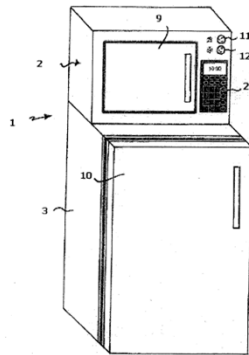
wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session, wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session

ISDU

- Unpublished student capstone project paper (Ex. 1012)
 - Date on document alone is not enough (and is contradicted by document itself)
 - No additional evidence of publication
 - More likely that date is simply the date the paper was submitted to the student's academic advisor
 - Petitioner's expert had no first-hand knowledge of when ISDU would have been made publicly available
 - Dr. Horenstein's testimony is contradicted by the email from Sarah Sweeney, a Northeastern University employee who could only say the paper was "not available in Iris before December 2009." Ex. 1025, 5.
- Petitioner fails to show ISDU was publicly accessible or ever published. *See* Paper 22, § III

ISDU does not qualify as prior art

(09) United States
 (12) Patent Application Publication
 Emma
 (30) Pub. No.: US 2009/0188911 A1
 (45) Pub. Date: Jul. 30, 2009
 (54) MULTIPLE LINKED APPLIANCES WITH
 AUXILIARY OUTLET
 (75) Inventor: Philip Emma, Topsheld, MA (US)
 Correspondence Address:
 LINDA WERATIN, ESQ., VP & GENERAL
 COUNSEL
 MAC-GRAY CORPORATION
 SUITE 406, 404 WYMAN STREET
 WALTHAM, MA 02451 (US)
 (73) Assignee: MAC-GRAY CORPORATION
 (21) Appl. No.: 12/017,532
 (22) Filed: Dec. 23, 2008
 Related U.S. Application Data
 (60) Provisional application No. 61/009,415, filed on Dec.
 28, 2007.
 Publication Classification
 (51) Int. Cl. (2006.01)
 H01B 6/06 (2006.01)
 (52) U.S. Cl. (2006.01)
 210/479; 210/482
 (57) ABSTRACT
 A combination microwave and refrigerator system is con-
 structed having a single plug input supply. The microwave
 oven is adapted to provide power to a refrigerator, and to
 auxiliary receptacles adapted for low power operation. The
 current to the low power receptacles and the refrigerator is
 controlled by the controller for the microwave oven according
 to the duty cycles of the connected appliances to avoid over-
 load conditions.



Petitioner Ex 1011, Page 1 of 15

(57)

ABSTRACT

A combination microwave and refrigerator system is constructed having a single plug input supply. The microwave oven is adapted to provide power to a refrigerator, and to auxiliary receptacles adapted for low power operation. The current to the low power receptacles and the refrigerator is controlled by the controller for the microwave oven according to the duty cycles of the connected appliances to avoid over-load conditions.

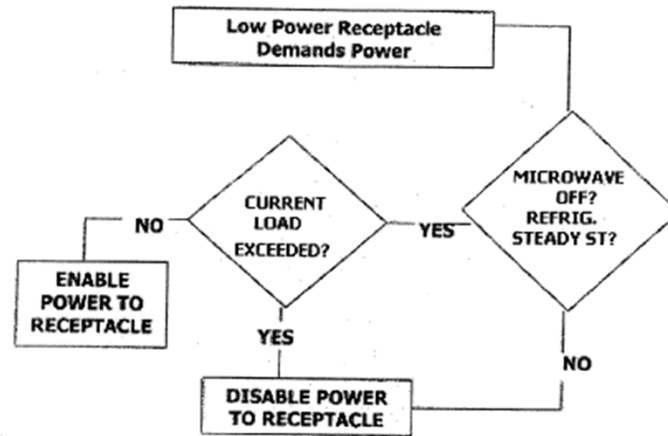
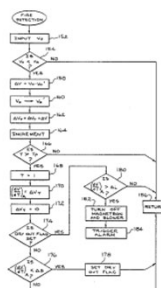


FIGURE 5

Ex. 1011, pg. 1 and Fig. 5

United States Patent [19]		[11] Patent Number:	4,496,817
Smith		[45] Date of Patent:	Jan. 29, 1985
[54] AUTOMATIC FIRE DETECTION FOR A MICROWAVE OVEN		4,331,855 5/1982 Tanabe	219/10.55 B
[75] Inventor: Peter H. Smith, Anchorage, Ky.		4,335,379 5/1982 Martin	340/634
[73] Assignee: General Electric Company, Louisville, Ky.		FOREIGN PATENT DOCUMENTS	
[21] Appl. No.: 511,586		31156 1/1981 European Pat. Off.	
[22] Filed: Jul. 7, 1983		52,13150 2/1977 Japan	219/10.55 B
[51] Int. Cl.		55,44839 6/1978 Japan	219/10.55 B
[52] U.S. Cl.		PRIMARY EXAMINER—P. H. Leung	
219/10.55 R; 340/578; 340/579; 236/44 C		Attorney, Agent, or Firm—H. Neil Houser; Ratford M. Beams	
[58] Field of Search		ABSTRACT	
219/10.55 M, 10.55 E, 510, 494, 497; 340/277; 578, 579, 588, 589, 628, 629, 236/44 C; 426/234, 241, 243, 242, 99/323, D302, 14		A method and apparatus for anticipating the occurrence of a fire in the cooking cavity of a microwave oven. The oven is provided with a blower for continuously circulating outside air through the cooking cavity to carry away gases by food loads being heated therein. A sensor responsive to the concentration of gases in the circulating air monitors the gas concentration level and generates an output signal representative thereof. Sensor monitoring circuitry responsive to the sensor output signal is operative to determine the gas concentration level, and a rate of change indicative of closely approaching its combustion of the characteristic rate of oven is turned off and and indic user that a combustion condition is imminent.	
References Cited		U.S. PATENT DOCUMENTS	
3,839,616 10/1974 Rasmussen		219/10.55 B	
4,097,597 6/1978 Kobayashi et al.		219/10.55 B	
4,133,995 1/1979 Buck		426/243	
4,154,855 5/1979 Buck		426/243	
4,162,881 7/1979 Buck		219/10.55 B	
4,166,137 8/1979 Buck		426/243	
4,175,282 10/1979 Buck		426/243	
4,221,549 9/1980 Minakawa		219/10.55 C	
4,281,222 7/1981 Buck		426/213	
4,295,028 10/1981 Tanabe		219/10.55 B	
4,311,895 1/1982 Tanabe		219/10.55 B	
4,316,068 2/1982 Tanabe		219/10.55 B	
4,319,110 5/1982 Tanabe et al.		219/10.55 B	

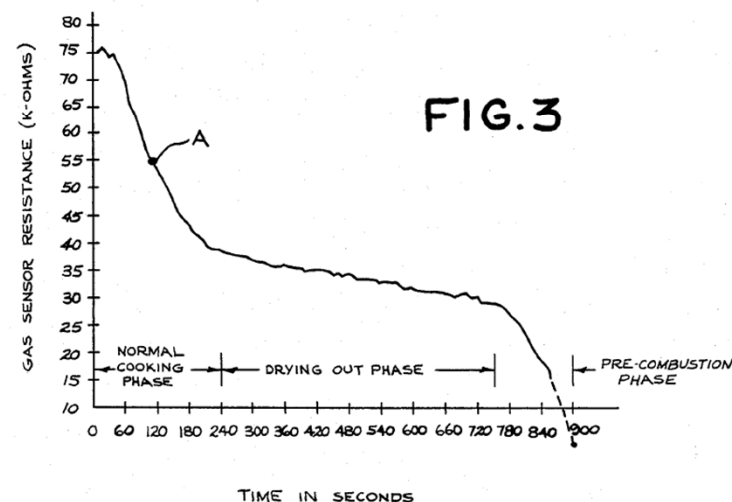


Petitioner Ex 1014, Page 1 of 11

[57]

ABSTRACT

A method and apparatus for anticipating the occurrence of a fire in the cooking cavity of a microwave oven. The oven is provided with a blower for continuously circulating outside air through the cooking cavity to carry away gases by food loads being heated therein. A sensor responsive to the concentration of gases in the circulating air monitors the gas concentration level and generates an output signal representative thereof. Sensor monitoring circuitry responsive to the sensor output signal is operative to determine the gas concentration level, and a rate of change indicative of closely approaching its combustion of the characteristic rate of oven is turned off and and indic user that a combustion condition is imminent.




US008446048B2

(12) **United States Patent**
Butt et al.

(10) **Patent No.:** **US 8,446,048 B2**
(45) **Date of Patent:** **May 21, 2013**

(54) **CONTROLLER FOR A SAFETY SHUT-OFF SYSTEM**

(56) **References Cited**
U.S. PATENT DOCUMENTS
4,032,288 A 6/1977 Kobayashi et al.
4,659,999 A 4/1987 Kamison
5,289,158 A 2/1994 Nevas
5,734,206 A 3/1998 Kozzer et al. 307/116
6,025,788 A 7/2000 Daback
6,946,441 A 4/2000 Dufflon
6,130,412 A 10/2000 Sweeney
6,380,852 B1* 4/2002 Hartman et al. 340/521
6,697,617 B2* 2/2004 Liebnow 455/425
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OTHER PUBLICATIONS
International Search Report of the International Searching Authority,
mailed Nov. 24, 2008, for corresponding International Application
No. PCT/CA2008/001462.
(Continued)
Prior Publication Data
US 2010/0238639 A1 Sep. 23, 2010
Related U.S. Application Data
(50) Provisional application No. 60/956,155, filed on Aug.
16, 2007.
(51) **Int. Cl.**
H02B 1/24 (2006.01)
H01H 35/00 (2006.01)
H01H 83/00 (2006.01)
(52) **U.S. Cl.** **307/116**
USPC
(58) **Field of Classification Search**
USPC 307/116, 117, 340/626, 361/807
See application file for complete search history.

(76) Inventors: **Marvin Dean Butt**, Brookside (CA);
Scott Christopher Kelly, Richmond
(CA)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 359 days.

(21) Appl. No.: **12/733,212**
(22) PCT Filed: **Aug. 18, 2008**
(86) PCT No.: **PCT/CA2008/001462**
§ 371 (c)(1),
(2), (4) Date: **Apr. 29, 2010**
(87) PCT Pub. No.: **WO2009/021330**
PCT Pub. Date: **Feb. 19, 2009**
(65) **Prior Publication Data**
US 2010/0238639 A1 Sep. 23, 2010
Related U.S. Application Data
(50) Provisional application No. 60/956,155, filed on Aug.
16, 2007.
(51) **Int. Cl.**
H02B 1/24 (2006.01)
H01H 35/00 (2006.01)
H01H 83/00 (2006.01)
(52) **U.S. Cl.** **307/116**
USPC
(58) **Field of Classification Search**
USPC 307/116, 117, 340/626, 361/807
See application file for complete search history.

(57) **ABSTRACT**
A controller for a safety shut-off system is taught. The controller is for a system that interrupts a supply of electricity to an electrical appliance upon detecting a trigger. The controller includes a housing having a cover with an electrical socket, which is configured to receive an electrical plug electrically coupled to the appliance. The controller also includes interrupter circuitry contained within the housing, which is electrically coupled to a power supply and to the socket, and which is configured to decouple the power supply from the socket upon receiving a trigger signal. The trigger signal is generated in response to a safety hazard associated with the electrical appliance.

Petitioner Ex 1015, Page 1 of 15

Ex. 1015, pg. 1 and Fig. 1B

(57)

ABSTRACT

A controller for a safety shut-off system is taught. The controller is for a system that interrupts a supply of electricity to an electrical appliance upon detecting a trigger. The controller includes a housing having a cover with an electrical socket, which is configured to receive an electrical plug electrically coupled to the appliance. The controller also includes interrupter circuitry contained within the housing, which is electrically coupled to a power supply and to the socket, and which is configured to decouple the power supply from the socket upon receiving a trigger signal. The trigger signal is generated in response to a safety hazard associated with the electrical appliance.

Figure 1B

8

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Ground 1

ISDU Based Obviousness Combinations

Paper 7, §§ IV(A), IV(B)(i); Paper 22, § VI.

Ground 1: Obviousness based on Emma and ISDU

Missing elements –

1. Withhold and deliver electrical power
2. Smoke sensor in operative connection with the cooking area and control circuit
3. Shut down function
4. Resent enable function

No motivation to combine.

Paper 22, § VI.A-B



Grounds 2-4 Emma, Smith, and Butt

Paper 7, § IV.B.i-iii; Paper 22, §§ VII-IX.

Ground 2: Emma and Smith

Missing elements –

1. Smoke sensor
2. Set end time
3. Reset enable

No motivation to combine.

Paper 22, § VII.A-B

Ground 3: Emma and Butt

Missing elements –

1. Smoke sensor
2. Shutdown function
3. Reset enable function
4. Control circuit

No motivation to combine.

Paper 22, § VIII.A-C

Ground 4: Emma, Smith and Butt

Missing elements –

1. Smoke sensor
2. Shutdown function
3. Reset enable function

No motivation to combine.

Paper 22, § IX.A-B

Claim requirement: Smoke sensor

'745 Patent

wherein the microwave oven includes a smoke sensor, wherein the smoke sensor is positioned in operative connection with a cooking area inside the microwave oven, is in operative connection with the at least one power control circuit, (claim 1)

a smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area, wherein the smoke sensor is in operative connection with the at least one electrical power control circuit, (claim 15)

wherein the microwave oven includes a smoke sensor, wherein the smoke sensor is positioned in operative connection with a cooking area inside the microwave oven, is in operative connection with the at least one power control circuit, (claim 24)

'746 Patent

a smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area, (claim 1)

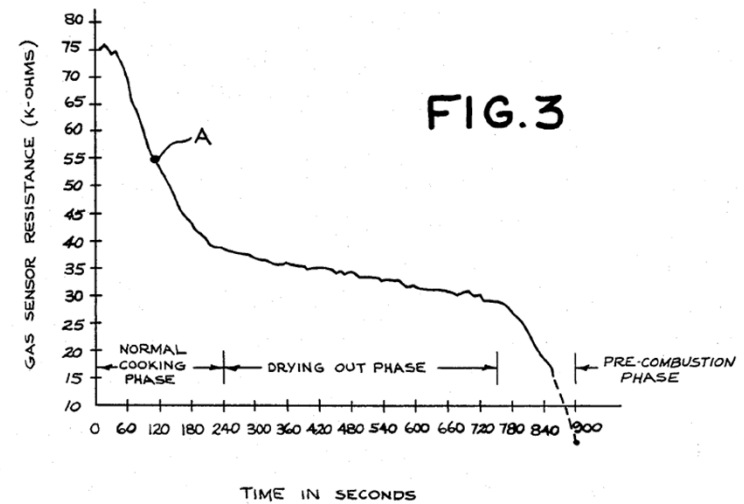
at least one smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area, (claim 15)

at least one smoke sensor, wherein the at least one smoke sensor is positioned in operative connection with the cooking area, (claim 22)

Smith discloses a humidity sensor.

One commonly used approach to the cavity fire de-
tection problem is to provide a thermal cutout switch
on the oven cavity ceiling which cuts off the magnetron
when the oven cavity ceiling temperature exceeds a
predetermined level. This arrangement works satisfac-
torily but is relatively costly and has a relatively slow
response time. An alternative approach is disclosed in
U.S. Pat. No. 4,133,995 to Buck. In the Buck arrange-
ment a humidity sensor and a temperature sensor are
employed to monitor the relative humidity and temper-
ature in the cavity. A microprocessor is programmed to
detect a fire condition when both the temperature rises
and the humidity falls by predetermined amounts within
a prescribed time period, on the order of 10-30 seconds,
and to de-energize the oven upon detecting such a con-
dition.

40



Ex. 1014, 6:25-40

Ex. 1014, pg. 2

Paper 22, § VII.A.i; Paper 34, § II.B.1

Smith directed to automatic cooking sensor.

typically begins a matter of minutes before actual combustion in the cavity. Thus, detection of the transition 60 from the drying out phase to the pre-combustion phase provides an advance warning that a combustion condition in the cavity is imminent. Hence, according to the

the cooking cavity. In addition to providing an anticipatory warning of an imminent fire condition, this arrangement eliminates the need for the relatively costly 50 thermal cutout switch and also eliminates the need for the "in situ" temperature sensor of the Buck method.

Smith teaches detection of the rate of change in humidity between food "drying out" phase and pre-combustion

55 of the potato. Thus, by detecting the rate of change of the gas concentration level characteristic of the pre-combustion phase early in this phase, it is possible to anticipate a combustion condition in the cavity at least 2 to 3 minutes in advance. By turning off the power to

Ex. 1014, 1:48-52, 4:60-63; 5:55-59;
Paper 22, § VII.A.i; Paper 34, § II.B.1

Figaro 186, NOT 816, is discussed in Smith.

Foods heated in the microwave oven to water vapor and other gases as the food gases mix with the air circulating in the cavity removed from the cavity by the circulating air leaving the cavity is provided in the food sensor 52 disposed in the air flow path between cavity wall 28 and vent opening 48 in net wall 20. Sensor 52 is supported proximate to cavity wall 28. Sensor 52 in the embodiment of FIG. 2 is a gas sensor readily available from Figaro Engineering, Inc. as Model TGS No. 186. This sensor is responsive to the cumulative concentration of water vapor and various organic gases. Use of such a sensor in a microwave oven for automatic cooking control is known in the art. One example of such a control arrangement is described in U.S. Pat. No. 4,311,895.

The sensor resistance versus time curve of FIG. 3 shows the change in resistance of the sensing element of sensor 52 during the cooling cycle for a whole potato heated in cooking cavity 24 of oven 10 in response to the changing gas concentration level in the air exiting the cooking cavity as the potato is heated to its combustion point. The potato was chosen for purposes of illustration because, as described briefly in the Background discussion, it is one of the foods most easily overcooked to the point of combustion. Also, the basic shape of the response curve is fairly representative of all food loads of the type conducive to ignition when overcooked.

The resistance R_s of the TGS 186 sensor varies with gas concentration level in the air to which it is exposed in accordance with the formula

$$R_s = A \times C^{-\alpha}$$

TGS 186 gas sensor 52 includes heater element 104 as an integral component of the sensor package to maintain sensing element 80 at an appropriate temperature for satisfactory operation. For stable sensor operation, the voltage applied to sensor heater element 104 should be closely regulated. To this end, heater circuit 62 includes, in addition to sensor heater element 104, a voltage regulator integrated circuit 106. Heater element 104 is serially connected between the output of voltage regulator 106 and system ground. Voltage regulator 106 regulates the -9 volt dc signal from line 72 of power

Ex. 1014, 3:3-21, 4:4-20; 5:58-68; Paper 22, § VII.A.i; Paper 34, § II.B.1

Dr. Horenstein did not evaluate Figaro 186.

[168]. After reviewing Figaro Engineering's product data sheet for the TGS-861 and Smith's description of sensor 52, I have concluded the Model TGS No. "186" disclosed by Smith was a typographical error that is referring to the Model TGS No. 816 sensor from Figaro Engineering Inc. A data sheet for Model TGS No. 816 is enclosed as Appendix C.¹¹

See Ex. 1002, ¶¶ 167-169; Paper 22, § VII.A.i

Dr. Horenstein did not evaluate Figaro 186.

[169]. As discussed above at ¶¶[159-64] in the context of Ueda, the Model TGS No. 816 sensor detects a variety of gases found in smoke; it can also detect changes in humidity. (See “Sensitivity Characteristics” and “Temperature/Humidity Dependency” plots presented in the section on Ueda *supra*. These characteristics of the TGS No. 816 confirm that it functions as a smoke sensor.

See Ex. 1002, ¶¶ 167-169; Paper 22, § VII.A.i

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The resistance R_s of the TGS 186 sensor varies with the gas concentration level in the air to which it is exposed in accordance with the formula

$$R_s = A \times C^{-\alpha}$$

TGS 186 gas sensor 52 includes heater element 104 as an integral component of the sensor package to maintain sensing element 80 at an appropriate temperature for satisfactory operation. For stable sensor operation, the voltage applied to sensor heater element 104 should be closely regulated. To this end, heater circuit 62 includes, in addition to sensor heater element 104, a voltage regulator integrated circuit 106. Heater element 104 is serially connected between the output of voltage regulator 106 and system ground. Voltage regulator 106 regulates the -9 volt dc signal from line 72 of power

Ex. 1014, 3:3-21, 4:4-20; 5:58-68; Paper 22, § VII.A.i

Dr. Horenstein did not evaluate Figaro 186.

Q What search engine did you use?

A Google. I think that's what I recall.

Q I see. So your Google search results did not produce any documents showing a Figaro sensor 186 from 1983; is that correct?

A Or from any time period.

Q Did you contact anyone at Figaro?

A No.

Q So instead, you assume it's a typo, correct?

A That's right.

See Ex. 2002, 119:1-11; Paper 22, § VII.A.i

Undisclosed 816's specification cannot supplement Smith.

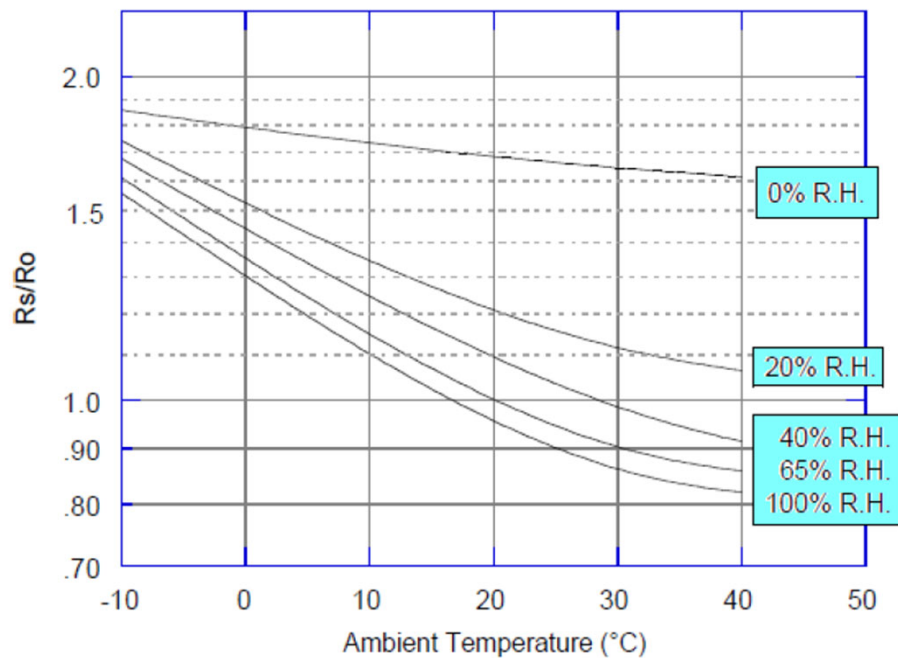
Reliance on Ex. 1002, Appx. C (1999 specification of “Figaro 816”) is improper:

- Not shown available when Smith published (1983)
- Not aimed at goal of Smith (humidity sensing)
- Incompatible
- No showing a POSITA would have looked to this 816 specification

E.g., Paper 22, § VII.A.i, VII.C

TGS 816 is inconsistent with Smith

Temperature/Humidity Dependency:



Preheating period before testing: More than 7 days

See Ex. 1002, Appx. C; Paper 22, § VII.A.i

Butt discloses a typical residential smoke detector

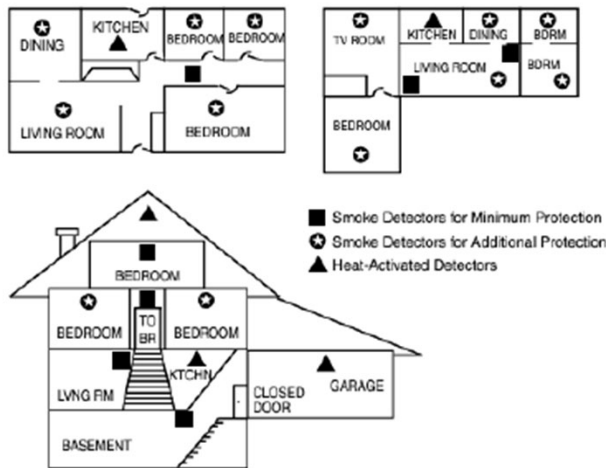
While in this embodiment the use of a smoke detector is taught, other hazard detectors, such as tremor detectors that detect earthquakes, could also be used. During normal operation, the appliance **18** is plugged into the circuit box **26** and the controller **20** allows electricity to be conducted from AC power supply A to the appliance **18**. The housing of the controller **20** comprises a standard Leviton™ circuit box, or any other suitable and commercially available circuit box, fits within a wall and is flush with the exterior of the wall. Characteristics of a suitable circuit box include that it should satisfy any applicable building regulatory requirements and should have a front cover that is removable and that allows for easy access to the interior of the box. An exemplary circuit box is a Leviton™ 1279-001 receptacle, which measures 4^{11/16}" long×4^{11/16}" wide×2^{1/8}" deep. Exemplary wireless smoke detectors **14** include the ADEMCO 5806 detector, the SecureLinc (73942) detector, and the Wisdom 433 Mhz Wireless Smoke Detector.

See Ex. 1015, Butt, 4:35-52; Paper 22, § VIII.A-B, IX.B.i; Paper 34, § II.C.1

Butt's smoke sensor is nonfunctional in a microwave.

- **UNHEATED BUILDINGS** - Temperature limits are 40°–100°F (5°–38°C). The detector will not function properly in locations where the normal ambient temperature exceeds these limits.
- **INSECT INFESTED AREAS** - Insects entering the sensing chamber may cause a nuisance alarm.

IF YOU EXPERIENCE NUISANCE ALARMS, CAREFULLY CHECK YOUR DETECTOR'S LOCATION FOR POSSIBLE CAUSES AS LISTED ABOVE. RELOCATE AND CLEAN YOUR DETECTOR, IF NECESSARY. REMEMBER THAT THE MAJOR CAUSES OF NUISANCE ALARMS ARE DIRTY OR IMPROPERLY LOCATED DETECTORS.



False alarms occur when smoke detectors are installed where they will not work properly. To avoid false alarms, do not install smoke detectors in the following situations:

- Combustion particles are by-products of something burning. Do not install smoke detectors in or near areas where combustion particles are present, such as kitchens with few windows or poor ventilation, garages where there may be vehicle exhaust, near furnaces, hot water heaters and space heaters.
- Do not install smoke detectors less than 6 meters (20 feet) away from places where combustion particles are normally present, like kitchens. If a 20-foot distance is not possible, e.g. in a mobile home, try to install the detector as far away from the combustion particles as possible, preferably on the wall. To prevent false alarms, provide good ventilation in such places.



IMPORTANT:

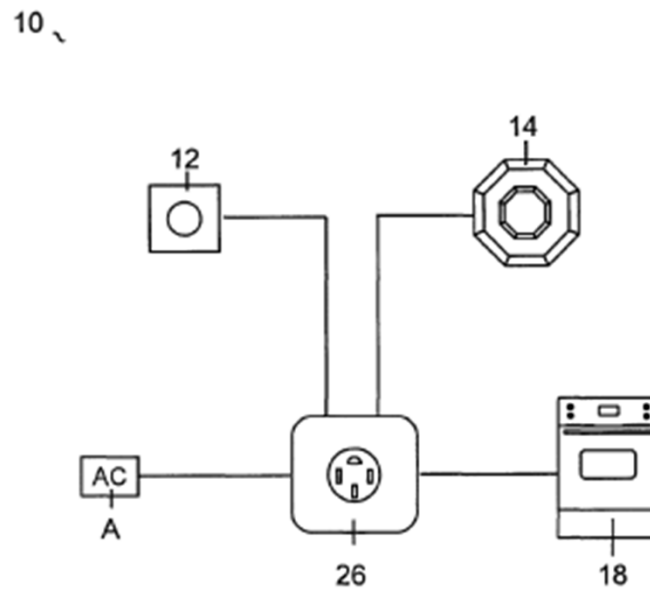
Never try to avoid false alarms by disabling the detector.

- Do not mount smoke detectors in the path of fresh air intake. The flow of fresh air in and out can drive smoke away from the smoke detector; thus reducing its efficiency. Figure 6 indicates the correct and incorrect locations concerning this problem.
- Near paint thinner fumes.
- In close proximity to an automobile exhaust pipe; this will damage the detector.
- In damp or very humid areas or near bathrooms with showers. Moisture in humid air can enter the sensing chamber, then turns into droplets upon cooling, which can cause false alarms. Install smoke detectors at least 3 meters (10 feet) away from bathrooms.

See Ex. 1002, Appx. E, also available at <https://advancedsecurityllc.com/wpcontent/uploads/Honeywell%205806%20Installation-Instructions-Manual.pdf>; Paper 22, § VIII.B-C

Butt's smoke sensor is not “in operative connection” with cooking area

Figure 1B



See Ex. 1015, Fig. 1B; Paper 22, § VIII.A

Grounds 2-4

Missing elements –

1. **Smoke sensor**
2. Shutdown function
3. Reset enable function



AND No motivation to combine.

Claim requirement: Shut-down function

'745 Patent

wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session, (claim 1)

and wherein the at least one electrical power control circuit is configured to cause cooking power to be withdrawn from a magnetron of the microwave oven prior to a set end time of a current cooking session responsive at least in part to the smoke sensor sensing an amount of smoke, (claim 15)

wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session, (claim 24)

'746 Patent

wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session, (claim 1)

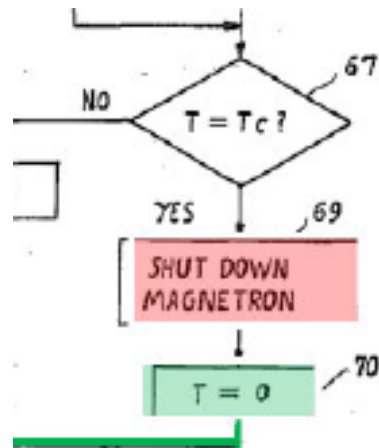
wherein the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end the cooking session responsive at least in part to sensing the level of smoke continuously for a predetermined time. (claim 10)

wherein responsive at least in part to a level of smoke sensed by the at least one smoke sensor during a cooking session, the at least one power control circuit is operative to cause power to the magnetron to be withdrawn to end the cooking session prior to a set end time, (claim 15)

wherein the at least one power control circuit is operative to cause responsive at least in part to a level of smoke sensed by the at least one smoke sensor, cooking power being currently delivered to the magnetron to be withdrawn whereby a current cooking session is ended prior to a set end time, (claim 22)

Smith's automatic cooking $\neq$ a “set end time.”

- Not expressly disclosed, *see* Paper 10 at 31
- No inherency argument
- Automatic cooking stops power when food is done—not when an end time is achieved. *See* Ex. 2001, ¶154-55; *see also* Ex. 1002, ¶147 (discussion of Ueda)



Paper 22, § VII.A.ii

Butt fails to teach or suggest shutting down a microwave.

- No microwave.
- No removal of power to magnetron.
- No set end time of current cooking session.

If the detector 14 detects the presence of smoke, then in the wireless embodiment illustrated in FIG. 1 an RF signal 15 is
55 transmitted and is received by the controller 20. Upon receiving the signal, the controller interrupts the AC power supply to the appliance 18 and consequently shuts the appliance 18 off. With the appliance 18 shut off, the energy that would otherwise act as an accelerant for the fire is eliminated, and
60 the progress of the fire is slowed. While the fire is not actively extinguished by the safety shut-off system, by slowing the progress of the fire the system helps to minimize fire damage. In the case of a false alarm, or when the danger posed by the fire has passed, a user can press the panic/reset button 12,
65 which will transmit an RF signal 13 to the controller 20, and the controller 20 will restore the AC power supply to the appliance 18.

See Ex. 1015 at 4:27-53; Paper 22, § VIII.B

Claim requirement: Reset Enable

'745 Patent

wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session. (claim 1)

wherein the at least one electrical power control circuit is configured such that after ending the current cooking session prior to the set end time due to sensing the amount of smoke, to enable cooking power to again be available to the magnetron in a next subsequent cooking session, (claim 15)

wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session. (claim 24)

'746 Patent

wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session. (claim 1)

wherein after the cooking session has been caused to end based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive power to commence a next subsequent cooking session. (claim 15)

wherein the at least one power control circuit is operative to cause ...after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, cooking power to be delivered to the magnetron to commence a next subsequent cooking session. (claim 22)

Smith's "de-energizing" is not enabling power in next cooking session.

Upon detection of a rate of change greater than reference ΔL , (Yes to

59

Inquiry 180) *a signal is provided at output port R12 causing power control relay 68 to open, thereby de-energizing magnetron 40 and the blower motor 67 (Block 182) . . . The de-energizing of both the magnetron and the blower motor using either technique in effect turns off power to the oven.*

Ex. 1014 at 9:17-28 (emphasis added); Ex. 1002 ¶¶[196-97, 289]; Ex. 1023 ¶[230].

See '745 Paper 1 at 58-59; '746 Paper 1 at 59-60.

Dr. Horenstein admits Smith does not disclose a reset.

Q But there is no disclosure of a reset relay in Smith, correct?

A That's correct.

Ex. 2002, 128:8-18; Paper 22, § VII.A.iii

Butt does not disclose a reset enable.

- No microwave.
- No current cooking session.
- No ending a current cooking session based on sensed smoke.
- No enablement of power to magnetron in next subsequent cooking session.

Paper 22, § VIII.B

Butt does not disclose the “reset enable function”.

Alternatively, in the embodiment shown in FIG. 1B, the controller 20, detector 14, and panic/reset button 12 are all wired together. The wiring takes the place of the RF signals 13, 15 illustrated in FIG. 1A. The wiring can be performed by the user alone, by a professional in a completed home, or by a professional during the construction of the home.

While in this embodiment the use of a smoke detector is taught, other hazard detectors, such as tremor detectors that detect earthquakes, could also be used. During normal operation, the appliance 18 is plugged into the circuit box 26 and the controller 20 allows electricity to be conducted from AC power supply A to the appliance 18. The housing of the controller 20 comprises a standard Leviton™ circuit box, or any other suitable and commercially available circuit box, fits within a wall and is flush with the exterior of the wall. Characteristics of a suitable circuit box include that it should satisfy any applicable building regulatory requirements and should have a front cover that is removable and that allows for easy access to the interior of the box. An exemplary circuit box is a Leviton™ 1279-001 receptacle, which measures 4^{11/16}" long×4^{11/16}" wide×2^{1/8}" deep. Exemplary wireless smoke detectors 14 include the ADEMCO 5806 detector, the SecureLinc (73942) detector, and the Wisdom 433 Mhz Wireless Smoke Detector.

See Ex. 1015, Butt, 4:35-52, 5:1-6; Paper 22, § VIII.A-B, IX.B.i.

Butt does not disclose the “reset enable function”.

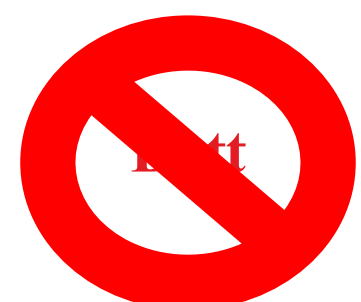
- No microwave.
- No current cooking session.
- No ending a current cooking session based on sensed smoke.
- No enablement of power to magnetron in next subsequent cooking session.

Paper 22, § VIII.A-B, IX.B.i.

Grounds 2-4

Missing elements –

1. Smoke sensor
2. Shutdown function
3. Reset enable function



AND No motivation to combine.

Grounds 2-4: No Motivation to Combine.

“The showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence.”

- *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1334 (Fed. Cir. 2002)

A change to a “principle of operation” is unlikely to be a motivation to combine.

- *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App’x 755, 759 (Fed. Cir. 2015)

Paper 22, § VII.B, VIII.C, IX. A-B; Paper 34, § II.D.2

No motivation to combine Emma and Smith.

- That a functionality could be added to Emma is not motivation to combine *found in the references*. Ex. 2002, 65:18-70:7, 71:12-74:16.
- VOC sensor $\neq$ smoke sensor.
- Combination of Emma and Smith exceeds maximum allowed power consumption for microwaves.

Ex. 2001, ¶ 166, Ex. 2002, 124:8-20;

Paper 22, § VII.B

No motivation to combine Emma and Butt.

- That a functionality could be added to Emma is not motivation to combine *found in the references*. Ex. 2002, 65:18-70:7, 71:12-74:16.
- Emma and Butt are incompatible to arrive at the claimed invention. *See* Ex. 1015, 6:19-21; Ex. 2001, ¶191.
- Butt and Emma have incompatible goals. Ex. 1015, 1:26-27
- Combining Butt and Emma renders Butt inoperable for its intended purpose.

Paper 22, § VIII.C

No motivation to combine Emma, Smith and Butt.

- No basis to combine Emma's microwave with *two sensors* that would not be combined with Emma to begin with.
- Smith and Butt combined is inoperative.
 - Butt's complete shutdown of power would cause Smith to fail to function.
 - Smith's alleged sensor is either a simple humidity sensor or it must be preheated; Butt's smoke detector must be away from heat, air duct, and kitchen.
- Smith is directed to "low cost" humidity sensor; Butt's detector is not low cost

No showing how Emma, Butt, and Smith combination could exist

Paper 22, § VII.B, VIII.C, IX. A-B; Paper 34, § II.D.2

Grounds 2-4 Fail

Missing elements –

1. Smoke sensor
2. Shutdown function
3. Reset enable function



AND No motivation to combine.

Grounds 5-8: Emma, ISDU, Smith, Knowledge of a POSITA or Quezada

- Grounds 5-8 rely on ISDU, and thus fail.
- All the failures of grounds 1-4, with not gaps filled.
- No attempt to show a POSITA would have selected USB ports from a “finite” number of options. *Virtek Vision Int'l ULC v. Assembly Guidance Sys., Inc.*, 97 F.4th 882, 888 (Fed. Cir. 2024)
 - *Does not address power control limitations for USB ports.*
- No alleged motivation to combine references with Quezada *found in references themselves.*

Paper 22, § X

Fredrikson



Grounds 1-8 Objective Indicia / Secondary Considerations

Paper 22, § XII

Secondary Indicia of Non-Obviousness

Objective evidence of non-obviousness “may often be the most probative and cogent evidence in the record.”

- *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012).

Secondary Indicia of Non-Obviousness

- Nexus
- Commercial success
- Long felt need
- Failure of Others (including Petitioner)
- Teaching away and unexpected results
- Petitioner's copying

Secondary Indicia of Non-Obviousness: Nexus

- Presumption of nexus if evidence is tied to a specific product and that the product “embodies the claimed features and is coextensive with them.”
 - *Fox Factory, Inc. v. SRAM, LLC*, 994 F.3d 1366, 1373 (Fed. Cir. 2019)
- Here, MicroFridge products embody the claimed features and are coextensive with the claims.
 - Tanbour Declaration, Ex. 2001 (Paper 23-1), ¶ 244, Appendix B
- No other product in the prior art has the claimed combination of features.
 - Tanbour Declaration, Ex. 2001 (Paper 23-1), ¶ 249

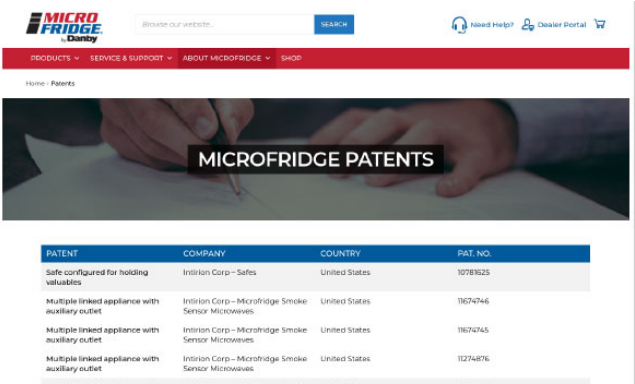
Paper 22, § XII.A

Intirion Ex. 2005
Intirion v. College Products
PGR2024-00004

MF004430

*Indice Corporation and its affiliates are not responsible for false and / or actual fire alarms caused by the proper or ill-proper use of MicroFridge products.

Secondary Indicia of Non-Obviousness: Nexus



The screenshot shows the MicroFridge Patents website. At the top is the MicroFridge logo and a search bar. Below the logo is a navigation menu with links for PRODUCTS, SERVICE & SUPPORT, ABOUT MICROFRIDGE, and SHOP. A banner image shows hands writing on a document with the text "MICROFRIDGE PATENTS". Below the banner is a table of patents.

PATENT	COMPANY	COUNTRY	PAT. NO.
Safe configured for holding valuables	Intirion Corp – Safes	United States	10781625
Multiple linked appliance with auxiliary outlet	Intirion Corp – Microfridge Smoke Sensor Microwaves	United States	11674746
Multiple linked appliance with auxiliary outlet	Intirion Corp – Microfridge Smoke Sensor Microwaves	United States	11674745
Multiple linked appliance with auxiliary outlet	Intirion Corp – Microfridge Smoke Sensor Microwaves	United States	11748796

PATENT	COMPANY	COUNTRY	PAT. NO.
Safe configured for holding valuables	Intirion Corp – Safes	United States	10781625
Multiple linked appliance with auxiliary outlet	Intirion Corp – Microfridge Smoke Sensor Microwaves	United States	11674746
Multiple linked appliance with auxiliary outlet	Intirion Corp – Microfridge Smoke Sensor Microwaves	United States	11674745

Document title: Patents | MicroFridge
Capture URL: <https://www.microfridge.com/patents/>
Capture timestamp (UTC): Fri, 28 Jun 2024 15:57:07 GMT

Intirion Ex. 2017
Intirion v. College Products
PGR2024-00004

Page 1 of 2

Ex. 2017; Paper 22, § XII.A

Secondary Indicia of Non-Obviousness: Commercial Success

- Commercial success is strong evidence of non-obviousness.
 - *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317k 1337 (Fed. Cir. 2016)
- Intirion produced extensive evidence of both volume and revenue based on the patented products.
 - *Amy Declaration, Ex. 2004 (Paper 23-4)*, ¶¶ 3, 6

Paper 22, § XII.B

Secondary Indicia of Non-Obviousness: Commercial Success

- Academic market began requiring MicroFridge's claimed combination of features
 - Amy Declaration, Ex. 2004 (Paper 23-4), ¶ 9
 - *Penn State, Ex. 2008*;
 - *Mississippi State University, Ex. 2010*;
 - *Concord Community College, Ex. 2014*;
 - *Christopher Newport University, Ex. 2011*;
 - *Southern Methodist University, Ex. 2009*;
 - *University of Georgia, Ex. 2012*;
 - *Clemson, Ex. 2013*.

Paper 22, § XII.B

Secondary Indicia of Non-Obviousness: Failure of Others/Long Felt Need

- Evidence of long-felt need and failure of others demonstrates non-obviousness.
 - *See In re Piasecki*, 745 F.2d 1468, 1475 (Fed. Cir. 1984)
- Long- felt need: to improve safety and reliability of combination appliances in dormitories, offices, and apartments.
 - Ex. 2001, ¶ 252
- Failure by others: teaching away from putting a smoke sensor in a microwave because of false alarms.
 - Ex. 1002, 306.

Paper 22, § XII.C

Secondary Indicia of Non-Obviousness: Failure of Others/Long Felt Need



Intirion submitted evidence that Petitioner tried, and *failed*, to implement the patented invention.

Ex. 2021, at 2-3; Ex. 2022, at 1; Ex. 2024, at 7

Paper 22, § XII.C

Secondary Indicia of Non-Obviousness: Teaching Away/Unexpected Results

- Evidence of teaching away and unexpected results demonstrates non-obviousness.
 - *See In re Kumar*, 418 F.3d 1361, 1368 (Fed. Cir. 2005)
- Teaching away:
 - Smoke alarms / sensors should be outside of the cooking area.
 - *ISDU, Ex. 1012 at 3*;
 - Sensor in the microwave would give too many false alarms
 - *Ex. 1002, App'x E at 306*.
 - Sensor in the microwave would use too much power
 - *Ex. 2035, ¶ 9*.

Paper 22, § XII.D

Secondary Indicia of Non-Obviousness: Petitioner's Copying

- Evidence of copying is “strong evidence of nonobviousness.”
 - *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1213 (Fed. Cir. 2023)
- Intirion submitted evidence that Petitioner copied the patented MicroFridge product:
 - Ex. 2015 at 1.
 - Ex. 2016 at 2.
 - Ex. 2024 at 4.
 - Ex. 2027.
 - Ex. 2023.
 - Ex. 2028
 - Ex. 2001, ¶¶ 266-268

Paper 22, § XII.D



Grounds 9; 9-11 §112 Allegations

Petitioner's '745 Ground 9

Ground	Challenged Claims	Claim Term	Basis
9	1-28	“in operative connection”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2

Petitioner's '746 Grounds 9-11

Ground	Challenged Claims	Claim Term	Basis
9	1-24	“in operative connection”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2
10	10	“sensing the level of smoke <i>continuously</i> for a predetermined time”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2 Enablement – 35 U.S.C. 112, ¶ 1
11	14	“wherein at least one power control circuit is operative to cause electrical power to be unavailable to the at least one electrical connector while the magnetron is operative and for at least <i>a present minimum period after the magnetron becomes inoperative.</i> ”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2

Indefiniteness

A specification provides adequate written description when it “reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010)(en banc).

Reasonable certainty is all that is required. *Nautilus, Inc. v. Biosig Instruments, Inc.* 572 U.S. 898, 901 (2014).

Terms at issue are not technical, are supported by the Patents’ specifications, and are easily understood by a POSITA

Paper 22, § XI



(10) Patent No.: US 11,674,745
(45) Date of Patent: Jun. 13, 2017

(58) Field of Classification Search
CPC H05B 6/642; H05B 6/6435; H05B 6/
H05B 6/6458; H05B 6/
(Continued)

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4,958,055 A * 9/1990 Shim I/25D

(Continued)

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DE	197 06 186 A1	8/1998

Primary Examiner—Hung D Nguyen
(74) *Attorney, Agent, or Firm*—Ralph E. Jocke; Wal-
& Jocke

ABSTRACT
A combination microwave and refrigerator system is provided. The microwave oven is connected to a control

power and has a control circuit for controlling the operation of the microwave oven. A first power supply outlet provided on the microwave oven. A refrigerator is connected to the source of power by connection to the first power supply outlet. The control circuit is configured to dis-

cooling operation of the refrigerator, when the microwave demands cooking power, and enable the cooling operation of the refrigerator when the microwave oven is drawing cooking power. A safety sensor is provided in microwave oven, and is configured to cause cooking

28 Claims, 25 Drawing Sheets

28 Claims, 25 Drawing Sheets



emitted during the cooking or heating of food or beverages will not cause the infrared sensor 326 to deactivate cooking operation. The exemplary infrared sensor 326 would not require interaction from the microwave user. The exemplary safety sensor may be operative to cause an initial transmissivity level of sensor radiation that reaches the sensor receiver from the sensor emitter early in the cooking session to be stored in a data store or other memory associated with

to FIG. 26, in another exemplary arrangement, sensor 360 may include an optical motion sensor 336, a sensor 338, a sensor 340, a sensor 342, a sensor 344 and a sensor receiver. The optical motion sensor 336 is positioned in the microwave cavity 332 adjacent air passage 334. The sensor 338 is positioned in the air passage that connects an area where food is cooked in microwave oven to the air outside the housing of the microwave oven 342. The sensor 340 is positioned in the air passage 342 that is sealed due to the presence of smoke below fan 342 of the microwave oven 2 through the air passage 342. The sensor 344 is positioned in the air passage connected to the microwave cavity, the air passage 342, the air passage 340, the air passage 338, the air passage 336, the sensor emitter and sensor receiver. The sensor 338 is positioned in the air passage between the sensor emitter and the receiver in a straight line. The optical motion sensor 336 has a tri-axial threshold that corresponds to the presence of rotation, vibration, or movement of the microwave oven 2. The transmission that is indicative of a dangerous condition is detected by the sensor 336. When the trip point is reached, the optical motion sensor 336 sends a signal to the sensor receiver. The element of the microwave oven to be tripped off, if it is detected that the exemplary optical motion sensor is positioned in the air passage, is the microwave oven 2, a turntable thereto, since the turntable itself may fall alone in some configurations. Of course it is possible that the microwave oven 2 may be tripped in air passages in other alternative arrangement.

5 alternative arrangements may include other types of sensors. For example, some arrangements may include sensors that are operative to detect smoke by determining the level of volatile organic compounds (VOCs) in the air in the microwave oven cooking area. In some exemplary arrangements such VOC sensors may be positioned to sense air in at least a portion of the microwave cooking area. In some cases such VOC sensors may be positioned in an air passage that extends between the microwave cooking area and the air in the atmosphere outside the

Petitioner Ex 1001, Page 35 of 42

Ex. 1001(Paper 1-1), 16:62-17:5; Paper 22, § XI

Ground 9 – “in operative connection” – ’745 Patent

1. Apparatus comprising:
an appliance including
a microwave oven,
a refrigerator,
at least one power control circuit, wherein the at least one power control circuit is *in operative electrical connection* with the microwave oven and the refrigerator,
a single power cord, wherein the single power cord is configured to be releasably connected to a source of electrical power, wherein the at least one power control circuit is supplied with electrical power only through the single power cord,
wherein the at least one power control circuit is operative
to cause
electrical power to be withheld from at least one component of the refrigerator
when a magnetron of the microwave oven draws cooking power, and
electrical power to be delivered to the refrigerator when the magnetron does not draw cooking power,
wherein the microwave oven includes a smoke sensor,
wherein the smoke sensor
is positioned *in operative connection* with a cooking area inside the microwave oven,
is *in operative connection* with the at least one power control circuit,
wherein responsive at least in part to a level of smoke sensed by the smoke sensor,
the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session,
wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session.

- Ex. 1001 24:32-67 (emphasis added)

“Simply reading the claims, we do not find that this limitation would be particularly unclear to a person of ordinary skill in the art. Claim 1 recites ‘a smoke sensor, wherein the smoke sensor is positioned in operative connection with a cooking area.’ Ex. 1001, 24:31–32.”

- ’745 Institution Decision (Paper 10), 42

Ground 9 – “in operative connection” – ’746 Patent

1. Apparatus comprising:
a microwave oven, wherein the microwave oven includes a magnetron,
wherein the magnetron is configured to cook items in a cooking area within
the microwave oven,
a smoke sensor, wherein the smoke sensor is positioned *in operative
connection* with the cooking area,
a power cord, wherein the power cord is configured to be releasably
connected to a source of electrical power,
at least one externally accessible electrical connector, wherein each electrical
connector is configured to deliver electrical power that is received through
the power cord through the respective electrical connector to a respective
electrically powered device that is outside of the microwave oven,
at least one power control circuit, wherein the at least one power control
circuit is *in operative electrical connection* with each of the power cord,
the at least one electrical connector, the magnetron, and the smoke sensor,
wherein responsive at least in part to a level of smoke sensed by the smoke
sensor, the at least one power control circuit is operative to cause cooking
power to the magnetron to be withdrawn to end a current cooking session
prior to a set end time of the current cooking session, wherein after the
current cooking session has been caused to end prior to the set end time
based on the sensed level of smoke, the at least one power control circuit is
operative thereafter to enable the magnetron to receive cooking power in a
next subsequent cooking session.

- Ex. 1001, 24:26-58 (emphasis added)

“Simply reading the claims, we do not find that this limitation would be particularly unclear to a person of ordinary skill in the art. Claim 1 recites ‘a smoke sensor, wherein the smoke sensor is positioned in operative connection with a cooking area.’ Ex. 1001, 24:31–32.”

- ‘746 Institution Decision (Paper 10), 42

“Accordingly, the following analysis mirrors our decision with respect to the ’745 patent. *See NTP Inc., v. Research in Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir. 2005) (When construing claims in patents that derive from the same parent application and share common terms, ‘we must interpret the claims consistently across all asserted patents.’).”

- ‘746 Institution Decision (Paper 10), 43

Ground 9 – “in operative connection”

“A person of ordinary skill in the art, reading the specification and claims of the ’745 patent, would undoubtedly understand that a smoke sensor *inside* the microwave oven, as opposed to outside, would be more likely to provide a fast and accurate detection of smoke or fire during a cooking operation. *See, e.g.*, Ex. 1023 (Dr. Horenstein testifying that ‘the POSITA would have had a reasonable expectation of success in detecting smoke more quickly compared to attempting to detect smoke using a smoke detector positioned further away from the cooking area.’).”

- ‘745 Institution Decision (Paper 10), 45

Ground 9 – “in operative connection”

“In other words, reading the claims in light of the specification, reveals that ‘operative connection’ appears to mean that the smoke sensor is either within, i.e., ‘inside’ the interior cooking area of the microwave or, in a connecting air passage or interior region of the microwave oven connected to the interior cooking area. Indeed, this makes sense because a microwave oven is only turned on to cook food when the door is shut and mostly sealed from the outside environment. A person of ordinary skill in the art, reading the specification and claims of the ’746 patent, would undoubtedly understand that a smoke sensor *inside* the microwave oven, as opposed to outside, would be more likely to provide accurate detection of smoke or fire during a cooking operation.”

- ‘746 Institution Decision (Paper 10), 44

Petitioner's '746 Grounds 9-11

Ground	Challenged Claims	Claim Term	Basis
~~9~~	~~1-24~~	~~“in operative connection”~~	~~Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2~~
10	10	“sensing the level of smoke <i>continuously</i> for a predetermined time”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2 Enablement – 35 U.S.C. 112, ¶ 1
11	14	“wherein at least one power control circuit is operative to cause electrical power to be unavailable to the at least one electrical connector while the magnetron is operative and for at least <i>a present minimum period after the magnetron becomes inoperative.</i> ”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2

Indefiniteness

A specification provides adequate written description when it “reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010)(en banc).

Reasonable certainty is all that is required. *Nautilus, Inc. v. Biosig Instruments, Inc.* 572 U.S. 898, 901 (2014).

Terms at issue are not technical, are supported by the Patents’ specifications, and are easily understood by a POSITA in this predictable art

Paper 22, § XI

'746 Ground 10 – “sensing the level of smoke *continuously* for a predetermined time”

10. The apparatus according to claim 1 wherein the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end the cooking session responsive to at least in part to **sensing the level of smoke *continuously* for a predetermined time.**

Ex. 1001, 25:52-57 (emphasis added)

“With respect to claim 10, it appears that the phrase ‘sensing the level of smoke continuously for a predetermined time’ could mean that there is a time domain within which some level of smoke or gas is sensed that would trigger ending the cooking session. See Ex. 1001, 25:52–57, see also, *id.* at 17:36–38 (‘Combinations of absolute and relative values and rates of change thereof may be detected for purposes of evaluating possible alarm conditions.’).”

'746 Institution Decision (Paper 10), 45

'746 Ground 10 – “sensing the level of smoke *continuously* for a predetermined time”

10. The apparatus according to claim 1 wherein the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end the cooking session responsive to at least in part to **sensing the level of smoke *continuously* for a predetermined time.**

Ex. 1001, 25:52-57 (emphasis added)

- “Continuously” is a well understood term with no technical definition
- Phrase means to sense a smoke level throughout a predetermined time period
- Claims are not indefinite merely because they are broad
- *G.I. Sportz, Inc. v. Valken, Inc.*, 2019 WL 2724081, at *9 (D.N.J. June 30, 2019) (finding “configured to continuously be exposed to compressed gas” requires no construction and applying plain and ordinary meaning).

Paper 22, § XII

Enablement



A specification meets the enablement requirement when it teaches a POSITA how to make and use the invention without undue experimentation, which considers multiple factors. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

Petitioner has made no showing of lack of possession or of undue experimentation and therefore its enablement and written description arguments should be rejected. See Ex. 1001, 17:36-38, 25:52-57.

Paper 22, § XI

Petitioner's '746 Grounds 9-11

Ground	Challenged Claims	Claim Term	Basis
~~9~~	~~1-24~~	~~“in operative connection”~~	~~Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2~~
~~10~~	~~10~~	~~“sensing the level of smoke <i>continuously</i> for a predetermined time”~~	~~Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2 Enablement – 35 U.S.C. 112, ¶ 1~~
11	14	“wherein at least one power control circuit is operative to cause electrical power to be unavailable to the at least one electrical connector while the magnetron is operative and for at least <i>a present minimum period after the magnetron becomes inoperative.</i> ”	Written Description / Indefiniteness – 35 U.S.C. 112, ¶ 2

Indefiniteness

A specification provides adequate written description when it “reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010)(en banc).

Reasonable certainty is all that is required. *Nautilus, Inc. v. Biosig Instruments, Inc.* 572 U.S. 898, 901 (2014).

Terms at issue are not technical, are supported by the Patents’ specifications, and are easily understood by a POSITA in this predictable art

Ground 11 – “wherein at least one power control circuit is operative to cause electrical power to be unavailable to the at least one electrical connector while the magnetron is operative and for at least a present minimum period after the magnetron becomes inoperative.”

14. The apparatus according to claim 1 wherein the at least one power control circuit is operative to cause electrical power to be unavailable to the at least one electrical connector while the magnetron is operative and for at least *a preset minimum period after the magnetron becomes inoperative.*

- Ex. 1001, 26:25-30 (emphasis added)

“[T]he specification clearly discloses withdrawing power from the refrigerator compressor ‘for a preset minimum period.’ Prelim. Resp. 53 (quoting Ex. 1001, 6:43–51). We appreciate that the specification discloses disabling the compressor for a present time, but it is not entirely clear that the present time delay is determined relative to when the magnetron becomes inoperative, as claim 14 appears to require.”

- ‘746 Institution Decision (Paper 10), 45

Thank you!



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