

CLAIM CHART

US Patent 11,274,876

Priority Date: April 25, 2014

Claim 1

Apparatus comprising:
an appliance including

MicroChill Features

MicroChill is an appliance.

MicroChill
3.2 cu. ft. **Dual USB Port MicroChill**
with **Internal Smoke Sensor**
www.collegeproducts.com
(712) 226-3250

Signature Features
- **REFRIGERATOR FEATURES:**
1 Adjustable Glass Shelf
1 Glass Crisper Shelf
2 Door Shelves
2-Liter Bottle Storage
1 In-Door Can Rack
Clear Crisper Drawer
Temperature Control
Automatic Defrost
Interior Light
- **MICROWAVE FEATURES:**
Stainless Steel Door Handle
Dual USB Charging Station
2 - 2.0 Amp Ports
Internal Smoke Sensor
Electronic Control Panel
One Touch Cooking Programs
Kitchen Timer
6 7/8" Power Cord
Available Color: Black
- **FREEZER FEATURES:**
True 0 degree freezer
Manual Defrost
1 Ice Cube Tray
- **CABINET FEATURES:**
Textured Finish
Low Profile Recessed Handles
Reversible Door Hinges
5 5/8" Power Cord
Available Colors: Black
- **ELECTRICAL REQUIREMENTS:**
Power: 115V/60 Hz
Start-Up Amps: 2.56
Running Amps: 0.76
Energy kWh/year: 199

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EXTERIOR DIMENSIONS:
Height: 44 5/8"
Width: 18 9/16"
Width with door open 18 3/4"
Depth: 19 3/8"
Depth with door open 9 1/4"

-INTERIOR VOLUME-
3.2 cu. ft.
Fridge Volume: 2.3 cu. ft.
Freezer Volume: .90 cu. ft.
- **INTERIOR DIMENSIONS:**
Oven Capacity: 0.8 cu. ft.

Only Power from Bridge when MicroChill is in use to conserve energy and stop overheating. Power is returned to bridge when microwave door is open. (Do not hold bridge open.)

MicroChill
Smart Stop - Internal Smoke Sensor
Reduce hall evacuations and calls to the fire department with our Internal Smoke Sensor.
Tamper Resistant Strap (R. Certified) Ensures proper use of MicroChill design.

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Cabinet Features
Black Textured Finish
Low Profile Recessed Handles
Reversible Door Hinges
5 5/8" Power Cord

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sales@collegeproducts.com

Dual USB PORT
Free up outlets and charge your phones, bluetooth speakers and many other devices with our Dual USB Ports.

Interior Dimensions:
Oven Capacity: 0.8 cu. ft.
- **Interior Volume:**
3.2 cu. ft.
Fridge Volume: 2.3 cu. ft.
Freezer Volume: .90 cu. ft.
- **Exterior Dimensions:**
Height: 44 5/8"
Width: 18 9/16"
Width with door open 18 3/4"
Depth: 19 3/8"
Depth with door open 9 1/4"

-MICROWAVE FEATURES-
Dual USB Charging Station
2 - 2.0 Amp Ports
Internal Smoke Sensor
Electronic Control Panel
One Touch Cooking Programs
Kitchen Timer
- **REFRIGERATOR FEATURES-**
1 Adjustable Glass Shelf
1 Glass Crisper Shelf
2 Door Shelves
2-Liter Bottle Storage
1 In-Door Can Rack
Clear Crisper Drawer
Temperature Control
Automatic Defrost
Interior Light
Chill White Interior
- **FREEZER FEATURES-**
True 0 degree freezer
Manual Defrost
1 Ice Cube Tray
- **Electrical Requirements-**
Power: 120V/60 Hz
Power Output, Cook: 700 watts
Start-Up Amps: 8.5

Only Power from Bridge when MicroChill is in use to conserve energy and stop overheating. Power is returned to bridge when microwave door is open. (Do not hold bridge open.)

(Source: MicroChill advertising literature – unless otherwise indicated)

MicroChill includes a microwave oven.

Smart Stop - Internal Smoke Sensor



Reduce fire evacuations and calls to the fire department with our Internal Smoke Sensor.



ENERGYGUIDE

Estimated Annual Energy Cost: \$24

100% Energy Star Qualified

Cabinet Features
 Black Textured Finish
 Low Profile Recessed Handles
 Reversible Door Hinges
 56" Power Cord

Dual USB PORT



Free up outlets and charge your phones, bluetooth speakers and many other devices with our Dual USB Ports.

-Interior Dimensions-
 Oven Capacity: 0.8 cu. ft.

-Interior Volume-
 3.2 cu. ft.
 Fridge Volume: 2.3 cu. ft.
 Freezer Volume: .90 cu. ft.

Exterior Dimensions

Open 180°: 34 3/4"
 Down 90°: 35 1/4"

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-MICROWAVE FEATURES-

Dual USB Charging Station

2 - 2.0 Amp Ports

Inter-Elc On Programs

Kitchen Timer

-Electrical Requirements-

Power: 115V/60 Hz

Start-Up Amps: 2.56

Running Amps: 0.76

Energy kWh/year: 199

-MICROCHILL FEATURES-

-Refrigerator Features-

1 Adjustable Glass Shelf

-Freezer Features-

True 0 degree freezer

-MICROWAVE FEATURES-

1 In-Door Can Rack

Clear Crisper Drawer

Temperature Control

Automatic Defrost

Interior Light

Chill White Interior

-Electrical Requirements-

Power: 120V/60 Hz

Power Output, Cook: 700 watts

Start-Up Amps: 8.5

MicroChill™

-MICROWAVE FEATURES-

3.2 cu. ft.

with Internal Smoke Sensor

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-REFRIGERATOR FEATURES-

- Adjustable Glass Shelf
- Glass Crisper Shelf
- 2 Door Shelves
- 2 Liter Bottle Storage
- 1.1 cu. ft. 100% R600a

-MICROWAVE FEATURES-

- Stainless Steel Door Handle
- Dual USB Charging Station
- 2 - 2.0 Amp Ports
- Internal Smoke Sensor
- Electronic Control Panel
- 10 Cooking Programs
- Timer
- Power Cord
- 5 Colors: Black

-FINISH FEATURES-

- Stainless Steel Recessed Handles
- Stainless Steel Door Hinges
- 5 Colors: Black

- CAL. REQUIREMENTS**
120V/60 Hz
Output, Cook: 700 watts
Power Amps: 8.5

Signature Features

Longer Resistant Strap (UL Certified)

2.0 Amp 2.0 Amp

USB CHARGING PORTS

Dual USB Charging Stations
Conveniently located on the interior control panel
for easy access while using the microwave

Energy Guide
Energy Input: 1000W
Energy Output: 1000W

EXTERIOR DIMENSIONS

- Height: 44 5/8"
- Width: 18 9/16"
- Width with door open 180°: 34 3/4"
- Depth: 19 3/8"
- Depth with door open 90°: 35 1/4"

-INTERIOR VOLUME-

- 3.2 cu. ft.
- Freeze Volume: 2.3 cu. ft.
- Fridge Volume: .90 cu. ft.

-INTERIOR DIMENSIONS-

- Oven Capacity: 0.8 cu. ft.

Cycle Power from Fridge when Microwave is on to save energy and only uses Power is restored to Fridge when microwave door is open.
EPA Compliant R600a refrigerant

a refrigerator,

MicroChill includes a refrigerator.

Smart Stop - Internal Smoke Sensor

Reduce hall evacuations and calls to the fire department with our Internal Smoke Sensor.

Dual USB PORT

Free up outlets and charge your phones, blue-tooth speakers and many other devices with our Dual USB Ports.

ENERGYGUIDE

199 kWh/year

Tamper-Resistant Strap (UL Certified)
Ensures proper use of MicroChill design.

Cabinet Features
Black Textured Finish
Low Profile Recessed Handle
Reversible Door Hinges
5'6" Power Cord

Interior Dimensions
Oven Capacity: 0.8 cu. ft.
Interior Volume: 3.2 cu. ft.
Fridge Volume: 2.3 cu. ft.
Freezer Volume: .90 cu. ft.

Exterior Dimensions
Height: 44 5/8"
Width: 18 9/16"
Width with door open 180°: 34 3/4"
Depth: 19 3/8"
Depth with door open 90°: 35 1/4"

199 kWh
HIGHEST EFFICIENCY AVAILABLE

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-MICROWAVE FEATURES-
Dual USB Charging Station
2 - 2.0 Amp Ports
Internal Smoke Sensor
Electronic Control Panel
One Touch Cooking

-MICROCHILL FEATURES-
-Refrigerator Features-
1 Adjustable Glass Shelf
1 Glass Crisper Shelf
2 Door Shelves
2 Liter Bottle Storage
1 In-Door Can Rack
Clear Crisper Drawer
Temperature Control
Automatic Defrost
Interior Light

-Freezer Features-
True 0 degree freezer
Manual Defrost
1 Ice Cube Tray

Electrical Requirements:
Power: 120V/60 Hz
Power Output, Cook: 700 W
Start-Up Amps: 8.5

-Refrigerator Features-

MicroChill

-REFRIGERATOR FEATURES-

Signature Features

199 kWh
HIGHEST EFFICIENCY AVAILABLE

ENERGYGUIDE

199 kWh/year

Tamper-Resistant Strap (UL Certified)

Dual USB Charging Station
Conveniently located on the front control panel for easy access and quick charging.

EXTERIOR DIMENSIONS
Height: 44 5/8"
Width: 18 9/16"
Width with door open 180°: 34 3/4"
Depth: 19 3/8"
Depth with door open 90°: 35 1/4"

INTERIOR VOLUME
3.2 cu. ft.
Fridge Volume: 2.3 cu. ft.
Freezer Volume: .90 cu. ft.
Oven Capacity: 0.8 cu. ft.

INTERIOR DIMENSIONS

Electrical Requirements:
Power: 115V/60 Hz
Start-Up Amps: 2.56
Running Amps: 0.76
Energy kWh/year: 199

Electrical Requirements:
Power: 120V/60 Hz
Power Output, Cook: 700 watts
Start-Up Amps: 8.5

-MICROWAVE FEATURES-
Stainless Steel Door Handle
Dual USB Charging Station
2 - 2.0 Amp Ports
Internal Smoke Sensor
Electronic Control Panel
One Touch Cooking Programs
Kitchen Timer
6'7" Power Cord
Available Color: Black

-CABINET FEATURES-
Textured Finish
Low Profile Recessed Handles
Reversible Door Hinges
5'6" Power Cord
Available Colors: Black

wherein the refrigerator is in fixed operative connection with the microwave oven,

The refrigerator and the microwave oven of the MicroChill are in fixed operative connection. This is shown by the fixed strap which holds the power cord of the refrigerator clamped in the plug receptable on the microwave oven.



Further the “microwave is attached directly to the fridge using a metal bracket and screw system that is UL approved.” (Source: College Products Response to RFP: S21-0110 University of Wisconsin – Milwaukee dated April 19, 2021, page 3)

at least one power control circuit,

The MicroChill includes at least one power control circuit.

The “MicroChill Combination Appliance has internal power cycling circuitry.” (Source: College Products Response to RFP: S21-0110 University of Wisconsin – Milwaukee dated April 19, 2021, page 3)

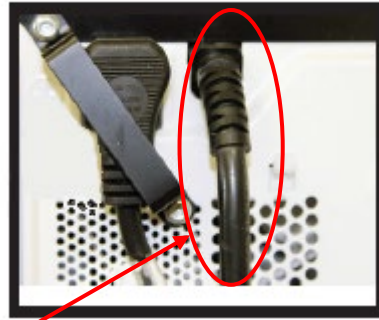
wherein the at least one power control circuit is in operative connection with the microwave oven and the refrigerator,

The at least one power control circuit of the MicroChill is in operative connection with both the microwave oven and the refrigerator.

The “MicroChill Combination Appliance has internal power cycling circuitry. Cycles power from fridge while microwave is in use so only one appliance runs at a time.” (Source: College Products Response to RFP: S21-0110 University of Wisconsin – Milwaukee dated April 19, 2021, page 3)

a single power cord,

The MicroChill has a single power cord that is used to supply power.



A single power cord supplies both the microwave oven and the refrigerator.

“The combination appliance has an outlet on the back of the microwave where the fridge is plugged in, making the microwave the only part of the unit that has to be plugged into the wall.” (Source: College Products website www.collegeproducts.com/microchill/ 6/15/2022)

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

The single power cord has a plug that can be releasably connected to a 120 V / 60 Hz household current outlet, which is a source of electrical power.



“The combination appliance has an outlet on the back of the microwave where the fridge is plugged in, making the microwave the only part of the unit that has to be plugged into the wall.” (Source: College Products website www.collegeproducts.com/microchill/ 6/15/2022)

wherein the at least one power control circuit is supplied with electrical power only through the single power cord,	The single power cord supplies power to the at least one power control circuit of the MicroChill. “The combination appliance has an outlet on the back of the microwave where the fridge is plugged in, making the microwave the only part of the unit that has to be plugged into the wall.” (Source: College Products website www.collegeproducts.com/microchill/ 6/15/2022)
wherein the microwave oven includes a smoke sensor,	The microwave oven of the MicroChill includes a smoke sensor.
wherein the smoke sensor,	The MicroChill Smart Stop smoke sensor is in
is positioned in operative connection with a cooking area inside the microwave oven,	operative connection with a cooking area inside the microwave oven. 
is in operative connection with the at least one power control circuit,	The MicroChill smoke sensor 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 microwave oven to be withdrawn to end a cooking session prior to a set end time of the current cooking session,	When the MicroChill Smart Stop smoke sensor senses a level of smoke, the at least one power control circuit stops a microwave cooking session prior to the set end time when the cooking session would have otherwise ended. “Microwave with Internal Smoke Sensor Circuitry – Shuts off power to the microwave at the first detection of smoke and alerts the user.” (Source: College Products MicroChill Proposal to Clemson University RFP: SB#96090635 dated January 16, 2018, page 7)

wherein the at least one power control circuit is operative to

withhold electrical power from at least one electrical component of the refrigerator when the microwave oven draws cooking power,

The at least one power control circuit of the MicroChill operates to withhold power from the refrigerator and all the electrical components thereof when the microwave oven draws cooking power.

MicroChill

Smart Stop - Internal Smoke Sensor

Reduce hall evacuations and calls to the fire department with our Internal Smoke Sensor.

Dual USB PORT

Free up outlets and charge your phones, Bluetooth speakers and many other devices with our Dual USB Ports.

ENERGYGUIDE

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Interior Dimensions-
Oven Capacity: 0.8 cu. ft.
Interior Volume-
3.2 cu. ft.
Fridge Volume: 2.3 cu. ft.
Freezer Volume: .90 cu. ft.

Exterior Dimensions
Height: 44 5/8"
Width: 18 9/16"
Width with door open 18 3/4"
Depth: 19 3/8"
Depth with door open 90°: 35 1/4"

Cabinet Features
Black Textured Finish
Low Profile Recessed Handles
Reversible Door Hinges
5'6" Power Cord

199 kWh
HIGHEST EFFICIENCY AVAILABLE

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-MICROWAVE FEATURES-	-MICROCHILL FEATURES-	-FREEZER FEATURES-
Dual USB Charging Station	1 Adjustable Glass Shelf	True 0 degree freezer
2 - 2.0 Amp Ports	1 Glass Crisper Shelf	Manual Defrost
Internal Smoke Sensor	2 Door Shelves	1 Ice Cube Tray
Electronic Control Panel	2-Liter Bottle Storage	
One Touch Cooking Programs	1 In-Door Can Rack	
Kitchen Timer	Clear Crisper Drawer	
-Electrical Requirements-	Temperature Control	
Power: 115V/60 Hz	Automatic Defrost	
Start-Up Amps: 2.56	Interior Light	
Running Amps: 0.76	Chill White Interior	
Energy kWh/year: 199		

Free Power from Fridge when Microwave is in use to conserve energy and amp consumption. Power is returned to Fridge when microwave door closes. RFR and RFR00s refrigerant.

Cycles power from fridge when microwave is in use to conserve energy and amp consumption.

The "MicroChill Combination Appliance has internal power cycling circuitry. Cycles power from fridge while microwave is in use so only one appliance runs at a time." (Source: College Products Response to RFP: S21-0110 University of Wisconsin – Milwaukee dated April 19, 2021, page 3)

and

deliver electrical power to the refrigerator when the microwave oven does not draw cooking power.

The at least one power control circuit of the MicroChill delivers electrical power to the refrigerator when the microwave oven does not draw cooking power.

MicroChill

Smart Stop - Internal Smoke Sensor

Reduce hall evacuations and calls to the fire department with our Internal Smoke Sensor.

Dual USB PORT

Free up outlets and charge your phones, blue-tooth speakers and many other devices with our Dual USB Ports.

ENERGYGUIDE

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199 kWh

Cabinet Features
Black Textured Finish
Low Profile Recessed Handles
Reversible Door Hinges
5'6" Power Cord

Interior Dimensions
Oven Capacity: 0.8 cu. ft.
Interior Volume: 3.2 cu. ft.
Fridge Volume: 2.3 cu. ft.
Freezer Volume: 30 cu. ft.

Exterior Dimensions
Height: 44 5/8"
Width: 18 9/16"
Width with door open 18 3/4"
Depth: 19 3/8"
Depth with door open 90°: 35 1/4"

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-MICROWAVE FEATURES-	-MICROCHILL FEATURES-	-FREEZER FEATURES-
Dual USB Charging Station	1 Adjustable Glass Shelf	True 0 degree freezer
2 - 2.0 Amp Ports	1 Glass Crisper Shelf	Manual Defrost
Internal Smoke Sensor	2 Door Shelves	1 Ice Cube Tray
Electronic Control Panel	2-Liter Bottle Storage	
One Touch Cooking Programs	1 In-Door Can Rack	
Kitchen Timer	Clear Crisper Drawer	
-Electrical Requirements-	Temperature Control	
Power: 115V/60 Hz	Automatic Defrost	
Start-Up Amps: 2.56	Interior Light	
Running Amps: 0.76	Chill White Interior	
Energy kWh/year: 199		

Power from Fridge when Microwave is in use to conserve energy and keep temperature. Power is restored to Fridge when microwave door is open. EPA Energy Star 2010s refrigerator

UL CEE

Power is restored to fridge when microwave door is open.