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Respectfully submitted,

2/7/02
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. **TO BE ASSIGNED**

Filed: **7 FEBRUARY 2001**

For: **UMBRELLA APPARATUS**

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Examiner:

Art Unit:

CERTIFICATION UNDER 35 USC SECTION 122(b)(2)(B)(i) OF NO FOREIGN FILINGS

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Applicant hereby certifies (through counsel) that the above-identified application filed herewith has not, and will not, be the subject of an application filed in another country, or under a multi-lateral international agreement that requires publication of applications eighteen (18) months after filing. Therefore, Applicant requests that the subject application not be published under 35 U.S.C. § 122(b)(1).

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I hereby certify that this paper or fee is being deposited with the United States Postal Service Express Mail "Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box: Patent Application, P.O. Box 2327, Arlington, VA 22202-0327,
by <u><i>Jana E. Veltz</i></u>

No additional fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees, and credit any overpayment, to Deposit Account No. 50-1060.

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ATTORNEYFOR APPLICANTS

SPECIFICATION

Attorney Docket No. **0638MH-40982-US**

0638MH-40982-US

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN that I, **Gregory G. Kuelbs**, residing in the city of Westlake, Texas, have invented new and useful improvements in a

UMBRELLA APPARATUS

of which the following is a specification.

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I hereby certify that this paper or fee is being deposited with the United States Postal Service Express Mail "Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box: Patent Application, P.O. Box 2327, Arlington, VA 22202-0327,
by <u><i>Jana E. Walte</i></u>

1 This application claims the benefit of U.S. Provisional Application No. 60/267,018,
2 filed 7 February 2001, titled "Lighted Patio Umbrella Apparatus;" and of U.S. Provisional
3 Application No. 60/335,933, filed 2 November 2001, titled "Outdoor Lighting Systems with
4 Cold Cathode Tubes."

5 **BACKGROUND OF THE INVENTION**

6 **1. Field of the Invention:**

7 The present invention relates in general to patio umbrellas, and in particular, to an
8 improved patio umbrella with integral lighting system and other modular electronic systems
9 and components.

10 **2. Description of the Prior Art:**

11 There has been a recent increase in the interest in entertaining in a lawn and
12 garden environment. Patio furniture is quite popular and useful for outdoor entertaining,
13 especially in portions of the country that have warmer climates. However, the sun often
14 presents an impediment to such outdoor entertaining. Consequently, sales have increased
15 for relatively large patio and table umbrellas for use in shielding or shading table areas and
16 people sitting around the tables from direct exposure to the sunlight. Given the relatively
17 high degree of interest in patio umbrellas, it is likely that improved umbrellas, or umbrellas
18 with enhanced functions, will be well received in the marketplace.

19

1 **SUMMARY OF THE INVENTION**

2 It is one objective of the present invention to provide a lawn or patio umbrella with
3 an integral lighting system that utilizes cold cathode tubes, light emitting diodes (LED's), or
4 florescent lights, to provide relatively bright outdoor light for reading and other activities that
5 require relatively high light intensities.

6 It is another objective of the present invention to provide an a lawn or patio umbrella
7 with an integral lighting system that utilizes cold cathode tubes, LED's, or florescent lights,
8 to provide relatively bright outdoor light, and its own rechargeable power supply, including
9 solar cells.

10 It is yet another objective of the present invention to provide a lawn or patio umbrella
11 with an integral lighting system that utilizes cold cathode tubes, LED's, or florescent lights,
12 to provide relatively bright outdoor light, and a motorized retraction system that aids in
13 opening and closing the umbrella.

14 It is yet another objective of the present invention to provide a lawn or patio umbrella
15 with an integral lighting system that utilizes cold cathode tubes, LED's, or florescent lights,
16 to provide relatively bright outdoor light, and a cooling system, such as one that utilizes
17 electric fans or misting systems.

18 It is yet another objective of the present invention to provide a modular, electrically
19 powered lawn or patio umbrella in which lighting systems, such as those utilizing cold
20 cathode tubes, LED's, or florescent lights; cooling systems, such as those utilizing electric
21 fans or misting systems; and motorized retraction systems; can be selectively
22 interchanged.

23 The above objects are achieved, for example, by integrating a rechargeable power
24 system, a lighting system, a motorized retraction system, and/or a cooling system into a
25 relatively large patio umbrella. The resulting umbrella does not have to be connected to a
26 household electrical system, is a relatively low power consuming device, does not generate
27 much heat, provides a high amount of light intensity, reduces the overall energy
28 consumption of outdoor lighting, allows for fewer batteries to be utilized in each lighting

1 fixture, allows for easier recharging of the batteries due to the lower power requirements,
2 and allows the utilization of smaller photovoltaic solar cells.

3 In the embodiment that utilizes a cold cathode tube, one additional advantage is that
4 the cold cathode tube may be operated at multiple voltage levels to provide differing
5 amounts of light output. In one particular embodiment, a wireless receiver and transmitter
6 pair may be utilized to allow an operator to use a wireless command signal to change the
7 operating state of the lighting system, such as switching the system between an on and off
8 condition, and switching the system between varying levels of light output. Accordingly, an
9 operator may intensify the light output from the lighting system through use of a wireless
10 handheld transmitter when he wants additional light from a particular umbrella.

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12

1 Figure 6 is a simplified schematic of an alternative embodiment of the present
2 invention which is directed to a lighted umbrella with a top-mounted power unit and a cold
3 cathode tube lighting system.

4 Figure 7 is a simplified schematic of an alternative embodiment of the present
5 invention which is directed to an umbrella with a top-mounted power unit and an electric
6 fan cooling system.

7 Figure 8 is a simplified view of an alternative embodiment of the present invention
8 which is directed to an umbrella with a top-mounted power unit and a mist producing
9 cooling system.

10 Figure 9 is a simplified schematic of an alternate embodiment of the present
11 invention that is directed to an umbrella with a top-mounted power unit and a motorized
12 opening and closing system.

13 Figure 10 is a schematic of one broad implementation of the present invention.

14 Figure 11 is a block diagram representation of the present invention.
15

1 wiring 39 which conductively connects a plurality of small cold cathode tube light bulbs
2 together for providing the high intensity light under canopy 17 and in the area
3 surrounding umbrella apparatus 11. A wiring ring 37 secures and locates electrical
4 wiring 39 of light strands 27, 29, 31, and 33, so that electrical wiring 39 may be passed
5 through the hollow interior of pole portion 15 to a power source, as will be described in
6 detail below.

7 Umbrella apparatus 11 includes an optional opening and closing system 40 that
8 aids in expanding umbrella portion 13 into the open condition and retracting umbrella
9 portion 13 into the closed condition. Opening and closing system 40 includes a cable
10 system 41, a gear and pulley system 43 housed in a crank case 44, and a manual crank
11 45. Crank case 44 is preferably located on pole portion 15 such that crank case 44 is
12 accessible when umbrella portion 13 is in the fully retracted position against pole portion
13 15. Cable system 41 is coupled between rib members 19, 21, 23, and 25 and gear and
14 pulley system 43, and is preferably disposed within the hollow interior of pole portion 15.

15 Manual crank 45 is coupled to gear and pulley system 43 so as to allow manual
16 opening and closing of umbrella portion 13.

17 Opening and closing system 40 may be automated by the inclusion of an electric
18 screw driver motor 49, or other similar relatively small diameter motor assembly, and
19 one or more operational switches 47. Motor 49 is preferably disposed within the hollow
20 interior of pole portion 15 and is coupled to gear and pulley system 43. Operational
21 switches 47 are preferably carried by crank case 44, and include one or more switches
22 for controlling the operation of motor 49. With the inclusion of motor 49, a user may
23 expand and retract umbrella portion 13 simply by pressing the appropriate operational
24 switch 47. This feature is particularly advantageous when used with large umbrellas
25 which may be relatively heavy and awkward to operate, or when the user lacks
26 sufficient strength to expand or retract umbrella portion 13.

27 Umbrella apparatus 11 includes a power system 50 having a power source 55.
28 In this embodiment, power source 55 is preferably disposed in the hollow interior of pole
29 portion 15 at a lower extremity and comprises one or more rechargeable batteries 55a.

1 A releasable end cap 57 having integral ground connectors is provided at the lowermost
2 portion of pole portion 15 to complete the electrical circuit of power system 50 and to
3 allow access to rechargeable batteries 55a, as rechargeable batteries 55a may have to
4 be periodically replaced. Power system 50 provides electrical power to lighting system
5 26 and opening and closing system 40. An external power system charger 51 is
6 electrically coupled to power system 50 to aid in repeatedly charging rechargeable
7 batteries 55a. As is shown in Figure 1, an external adapter 60 may be provided.
8 External adapter 60 includes a relatively small plug 59 that is adapted to be conductively
9 received by external power system charger 51, an extension cord 61, an electrical
10 transformer 63, and terminals 65 that allow transformer 63 to be plugged into a
11 conventional AC wall outlet. This allows power system charger 51 to receive power
12 directly from a conventional AC wall outlet in order to recharge rechargeable batteries
13 55a.

14 In accordance with a preferred embodiment of the present invention, an
15 alternative power system charger 62 may be provided. Alternate power system charger
16 62 includes at least one solar cell 35 carried by an upper cap portion 64. Solar cells 35
17 are conductively coupled to power system charger 51 via wires (not shown) that pass
18 through the hollow interior of pole portion 15, thereby allowing solar cells 35 to provide
19 an electrical charge to recharge rechargeable batteries 55a, provided sunlight falls upon
20 solar cells 35. Because solar cells 35 provide continuous recharging throughout the
21 daylight hours, the amount and frequency of charging power system 50 with external
22 power system charger 60 may be minimized. It is important to note that locating
23 alternate power system charger 62 atop umbrella portion 13 is unique and
24 advantageous, particularly when alternate power system charger 62 includes solar cells
25 35 or other types of solar energy collectors. Such location limits the visibility of alternate
26 power system charger 62 and ensures that solar energy collection is maximized.

27 The embodiment depicted in Figure 1 is advantageous over the prior art in that it
28 provides a number of useful functions. Umbrella apparatus 11 is lighted by lighting
29 system 26 which does not require continuous access to a conventional AC wall outlet,
30 while providing high intensity light. This allows umbrella apparatus 11 to be placed in a

1 relatively remote lawn or garden locations that are away from, or substantially removed
2 from, conventional AC power outlets. During daylight hours, solar cells 35 provide a
3 continuous trickle charge to recharge rechargeable batteries 55a, thereby reducing the
4 need for and frequency of use of external power system charger 60. However, when an
5 electrical charge is needed, external power system charger 60 may be utilized to
6 directly charge power system charger 51. Of course, a conventional extension cord
7 may be used, thereby eliminating the need to move umbrella apparatus 11 from its
8 remote location to a location near an AC power outlet.

9 Referring now to Figures 2A-2C in the drawings, another embodiment of the
10 present invention is illustrated. In this embodiment, an umbrella apparatus 111 includes
11 an umbrella portion 113, a pole portion 115, a stand portion 118, and a base portion 120
12 adapted to house a rechargeable power system 151. Umbrella apparatus 11 includes a
13 lighting system 126 and may include a motorized opening and closing system 140.
14 Umbrella portion 113 is preferably retractable and may be moved between a raised, or
15 expanded open position, which is shown; and a lowered, or retracted, closed position in
16 which umbrella portion is collapsed down about pole portion 115, as is conventional. A
17 flexible canopy 117 is attached to and covers umbrella portion 115. Canopy 117 is
18 supported by a plurality of rib members 119, 121, 123, and 125. Rib members 119,
19 121, 123, and 125 are preferably hingedly coupled to pole portion 115 at an upper
20 portion of pole portion 115. An integral lighting system 126 is carried by at least one of
21 rib members 119, 121, 123, or 125. Lighting system 126 provides high intensity light to
22 umbrella apparatus 111 and the surrounding area. In the embodiment of Figures 2A-
23 2C, lighting system 126 preferably utilizes a cold cathode tube which will be described in
24 greater detail herein.

25 Lighting system 126 includes a plurality of light strands 127, 129, 131, and 133
26 attached to rib members 119, 121, 123, and 125. Each light strand 127, 129, 131, and
27 133 includes electrical wiring 139 which conductively couples a plurality of small cold
28 cathode tube light bulbs together for providing the high intensity light under canopy 117
29 and in the area surrounding umbrella apparatus 111. A wiring ring 137 secures and
30 locates electrical wiring 139 of light strands 127, 129, 131, and 133, so that electrical

1 wiring 139 may be passed through the hollow interior of pole portion 115 to a power
2 source, as will be described in detail below.

3 Umbrella apparatus 111 includes an optional opening and closing system 140
4 that aids in expanding umbrella portion 113 into the open condition and retracting
5 umbrella portion 113 into the closed condition. Opening and closing system 140
6 includes a cable system 141, a gear and pulley system 143 housed in a crank case 144,
7 and a manual crank 145. Crank case 144 is preferably located on pole portion 115
8 such that crank case 144 is accessible when umbrella portion 113 is in the fully
9 retracted position against pole portion 115. Cable system 141 is coupled between rib
10 members 119, 121, 123, and 125 and gear and pulley system 143, and is preferably
11 disposed within the hollow interior of pole portion 115. Manual crank 145 is coupled to
12 gear and pulley system 143 so as to allow manual opening and closing of umbrella
13 portion 113.

14 Opening and closing system 140 may be automated by the inclusion of an
15 electric screw driver motor 149, or other similar relatively small diameter motor
16 assembly, and one or more operational switches 147. Motor 149 is preferably disposed
17 within the hollow interior of pole portion 115 and is coupled to gear and pulley system
18 143. Operational switches 147 are preferably carried by crank case 144, and include
19 one or more switches for controlling the operation of motor 149. With the inclusion of
20 motor 149, a user may expand and retract umbrella portion 113 simply by pressing the
21 appropriate operational switch 147. This feature is particularly advantageous when
22 used with large umbrellas which may be relatively heavy and awkward to operate, or
23 when the user lacks sufficient strength to expand or retract umbrella portion 113.

24 Umbrella apparatus 111 includes a power system 150 having a power source
25 155. In this embodiment, power source 155 is preferably adapted to be conductively
26 coupled to base portion 120 and comprises a rechargeable battery pack 155a,
27 preferably an 18-Volt rechargeable battery pack. Battery pack 155a is preferably the
28 type of rechargeable battery that is utilized with most modern cordless power tools,
29 such as drills, saws, and sanders. Battery pack 155a is adapted to be repeatedly

1 recharged by plugging battery pack 155a into a conventional charger (not shown) that is
2 plugged into a conventional AC power outlet. Power system 150 provides electrical
3 power to lighting system 126 and opening and closing system 140.

4 In accordance with a preferred embodiment of the present invention, an
5 alternative power system charger 162 may be provided. Alternate power system
6 charger 162 includes at least one solar cell 135 carried by an upper cap portion 164.
7 Solar cells 135 are conductively coupled to power system 150 via wires (not shown) that
8 pass through the hollow interior of pole portion 115, thereby allowing solar cells 135 to
9 provide an electrical charge to recharge rechargeable battery pack 155a, provided
10 sunlight falls upon solar cells 135. Because solar cells 135 provide continuous
11 recharging throughout the daylight hours, the frequency with which battery pack 155a
12 must be replaced or recharged may be minimized. It is important to note that locating
13 alternate power system charger 162 atop umbrella portion 113 is unique and
14 advantageous, particularly when alternate power system charger 162 includes solar
15 cells 135 or other types of solar energy collectors. Such location limits the visibility of
16 alternate power system charger 162 and ensures that solar energy collection is
17 maximized.

18 Stand portion 118 includes an upright shaft portion 170 having a central aperture
19 172 that is adapted to receive the pole portion 115 of umbrella apparatus 111. A
20 plurality of screw clamps 174 and 176 are provided to secure pole portion 115 within
21 shaft portion 170. A bottom portion 146 is provided to stabilize umbrella apparatus 111
22 while umbrella apparatus 111 is installed within stand portion 118.

23 Base portion 120 includes a removable cylindrical sleeve 156, a removable cover
24 160, and a receiver 168. Sleeve 156 is configured to slip over the exterior of shaft
25 portion 170, and includes a longitudinal slot 158 that allows access to screw clamps 174
26 and 176 when sleeve 156 is placed over shaft portion 170. Slot 158 also allows access
27 to a connector 166 disposed in the lower portion of pole portion 115 when sleeve 156 is
28 placed over shaft portion 170. Connector 166 is conductively coupled to the wires from
29 alternate power system charger 162 and solar cells 135. Cover 160 is preferably

1 concave in shape, thereby defining an interior space which may be used to house the
2 electronics (not shown) of power system 150. Cover 160 may include one or more
3 seams 162 that allow access to the interior space defined by cover 160. Receiver 168
4 releasably receives battery pack 155a. A wire 152 and plug 154 conductively couple
5 battery pack 155a to connector 166, thereby providing an electrical circuit between
6 rechargeable battery pack 155a and light strands 119, 121, 123, and 125 of lighting
7 system 126.

8 The embodiment depicted in Figures 2A-2C is advantageous over the prior art in
9 that it provides a number of useful functions. Umbrella apparatus 111 is lighted by
10 lighting system 126 which does not require continuous access to a conventional AC wall
11 outlet, while providing high intensity light. This allows umbrella apparatus 111 to be
12 placed in a relatively remote lawn or garden locations that are away from, or
13 substantially removed from, conventional AC power outlets. During daylight hours,
14 solar cells 135 provide a continuous trickle charge to recharge rechargeable battery
15 pack 155a, thereby reducing the frequency with which battery pack 155a must be
16 replaced or recharged. Additionally, this embodiment is advantageous over the prior art
17 in that conventional rechargeable battery packs, which are commonly used with
18 cordless power tools, may be utilized. If battery pack 155a is insufficiently charged
19 illuminate light strands 119, 121, 123, and 125 of light system 126, the user may simply
20 replace battery pack 155a with another fully charged battery pack 155a. In this manner,
21 lighting system 126 of umbrella apparatus 111 may be energized conveniently, even
22 though umbrella apparatus 111 may be located extremely remotely from an AC power
23 outlet, such as in a garden patio, or on a boat dock. In this embodiment, there is no
24 need to use extension cords to charge an alternate power system charger.

25 Referring now to Figures 3A-3C in the drawings, another embodiment of the
26 present invention is illustrated. In this embodiment, an umbrella apparatus 211 includes
27 an umbrella portion 213, a pole portion 215, a stand portion 218, and a base portion 220
28 adapted to house a rechargeable power system 251. Umbrella apparatus 211 includes
29 a lighting system 226 and may include a motorized opening and closing system 240.
30 Umbrella portion 213 is preferably retractable and may be moved between a raised, or

1 expanded open position, which is shown; and a lowered, or retracted, closed position in
2 which umbrella portion is collapsed down about pole portion 215, as is conventional. A
3 flexible canopy 217 is attached to and covers umbrella portion 215. Canopy 217 is
4 supported by a plurality of rib members 219, 221, 223, and 225. Rib members 219,
5 221, 223, and 225 are preferably hingedly coupled to pole portion 215 at an upper
6 portion of pole portion 215. An integral lighting system 226 is carried by at least one of
7 rib members 219, 221, 223, or 225. Lighting system 226 provides high intensity light to
8 umbrella apparatus 211 and the surrounding area. In the embodiment of Figures 3A-
9 3C, lighting system 226 preferably utilizes a cold cathode tube which will be described in
10 greater detail herein.

11 Lighting system 226 includes a plurality of light strands 227, 229, 231, and 233
12 attached to rib members 219, 221, 223, and 225. Each light strand 227, 229, 231, and
13 233 includes electrical wiring 239 which conductively couples a plurality of small cold
14 cathode tube light bulbs together for providing the high intensity light under canopy 217
15 and in the area surrounding umbrella apparatus 211. A wiring ring 237 secures and
16 locates electrical wiring 239 of light strands 227, 229, 231, and 233, so that electrical
17 wiring 239 may be passed through the hollow interior of pole portion 215 to a power
18 source, as will be described in detail below.

19 Umbrella apparatus 211 includes an optional opening and closing system 240
20 that aids in expanding umbrella portion 213 into the open condition and retracting
21 umbrella portion 213 into the closed condition. Opening and closing system 240
22 includes a cable system 241, a gear and pulley system 243 housed in a crank case 244,
23 and a manual crank 245. Crank case 244 is preferably located on pole portion 215
24 such that crank case 244 is accessible when umbrella portion 213 is in the fully
25 retracted position against pole portion 215. Cable system 241 is coupled between rib
26 members 219, 221, 223, and 225 and gear and pulley system 243, and is preferably
27 disposed within the hollow interior of pole portion 215. Manual crank 245 is coupled to
28 gear and pulley system 243 so as to allow manual opening and closing of umbrella
29 portion 213.

1 Opening and closing system 240 may be automated by the inclusion of an
2 electric screw driver motor 249, or other similar relatively small diameter motor
3 assembly, and one or more operational switches 247. Motor 249 is preferably disposed
4 within the hollow interior of pole portion 215 and is coupled to gear and pulley system
5 243. Operational switches 247 are preferably carried by crank case 244, and include
6 one or more switches for controlling the operation of motor 249. With the inclusion of
7 motor 249, a user may expand and retract umbrella portion 213 simply by pressing the
8 appropriate operational switch 247. This feature is particularly advantageous when
9 used with large umbrellas which may be relatively heavy and awkward to operate, or
10 when the user lacks sufficient strength to expand or retract umbrella portion 213.

11 Umbrella apparatus 211 includes a power system 250 having a rechargeable
12 power source 255. In this embodiment, power source 255 is preferably adapted to be
13 conductively coupled to and housed within base portion 220 and comprises a bundle of
14 rechargeable batteries 255a. Power system 250 provides electrical power to lighting
15 system 226 and opening and closing system 240. An external power system charger
16 and transformer 251 is electrically coupled to power system 250 to aid in repeatedly
17 charging rechargeable batteries 255a. An extension cord 261 having terminals 265
18 allow external power system charger and transformer 251 to be plugged into a
19 conventional AC wall outlet. This allows external power system charger and
20 transformer 251 to receive power directly from a conventional AC wall outlet in order to
21 recharge rechargeable batteries 255a.

22 In accordance with a preferred embodiment of the present invention, an
23 alternative power system charger 262 may be provided. Alternate power system
24 charger 262 includes at least one solar cell 235 carried by an upper cap portion 264.
25 Solar cells 235 are conductively coupled to power system 250 via wires (not shown) that
26 pass through the hollow interior of pole portion 215, thereby allowing solar cells 235 to
27 provide an electrical charge to recharge rechargeable batteries 255a, provided sunlight
28 falls upon solar cells 235. Because solar cells 235 provide continuous recharging
29 throughout the daylight hours, the frequency with which batteries 255a must be
30 replaced or recharged may be minimized. It is important to note that locating alternate

1 power system charger 262 atop umbrella portion 213 is unique and advantageous,
2 particularly when alternate power system charger 262 includes solar cells 235 or other
3 types of solar energy collectors. Such location limits the visibility of alternate power
4 system charger 262 and ensures that solar energy collection is maximized.

5 Stand portion 218 includes an upright shaft portion 270 having a central aperture
6 272 that is adapted to receive pole portion 215 of umbrella apparatus 211. A plurality of
7 screw clamps 274 and 276 are provided to secure pole portion 215 within shaft portion
8 270. A bottom portion 246 is provided to stabilize umbrella apparatus 211 while
9 umbrella apparatus 211 is installed within stand portion 218.

10 Base portion 220 includes a removable cylindrical sleeve 256, a removable cover
11 260, and recessed portions 280 and 282. Sleeve 256 is configured to slip over the
12 exterior of shaft portion 270, and includes a longitudinal slot 258 that allows access to
13 screw clamps 274 and 276 when sleeve 256 is placed over shaft portion 270. Slot 258
14 also allows access to a connector 266 disposed in the lower portion of pole portion 215
15 when sleeve 256 is placed over shaft portion 270. Connector 266 is conductively
16 coupled to the wires from alternate power system charger 262 and solar cells 235.
17 Cover 260 is preferably concave in shape, thereby defining an interior space which may
18 be used to house the electronics (not shown) of power system 250. Cover 260 may
19 include one or more seams 262 that allow access to the interior space defined by cover
20 260. Recessed portion 280 releasably receives batteries 255a, and recessed portion
21 282 releasably receives external power system charger 251. A wire 252 and plug 254
22 conductively couple batteries 255a to connector 266, thereby providing an electrical
23 circuit between rechargeable batteries 255a and light strands 219, 221, 223, and 225 of
24 lighting system 226.

25 The embodiment depicted in Figures 3A-3C is advantageous over the prior art in
26 that it provides a number of useful functions. Umbrella apparatus 211 is lighted by
27 lighting system 226 which does not require continuous access to a conventional AC wall
28 outlet, while providing high intensity light. This allows umbrella apparatus 211 to be
29 placed in a relatively remote lawn or garden locations that are away from, or

1 substantially removed from, conventional AC power outlets. During daylight hours,
2 solar cells 235 provide a continuous trickle charge to recharge rechargeable batteries
3 255a, thereby reducing the frequency with which batteries 255a must be replaced or
4 recharged. However, when an electrical charge is needed, external power system
5 charger 251 may be utilized to directly charge batteries 255a. Of course, a conventional
6 extension cord may be used, thereby eliminating the need to move umbrella apparatus
7 211 from its remote location to a location near an AC power outlet.

8 Referring now to Figure 4A in the drawings, the preferred embodiment of lighting
9 systems 26, 126, and 226 of the present invention is illustrated. In this embodiment, a
10 plurality of lighting elements 307, preferably cold cathode tube bulbs, are recessed into
11 a rib member 301. Rib member 301 is indicative of rib members 19, 21, 23, 25, 119,
12 121, 123, 125, 219, 221, 223, and 225. As is shown, a cavity 303 is formed within rib
13 301. Cavity 303 is adapted to receive and hold light bulb 307. A translucent material
14 305 extends along the entire length of the cavity 303 to protect bulbs 307 from damage
15 and undesirable exposure to weather and other conditions. Translucent material 305
16 may have a smooth surface or be textured to accentuate or enhance the light from
17 bulbs 307. Although only a single cold cathode tube bulb 307 is illustrated, it should be
18 understood that there may be many bulbs 307 spaced along the length of rib member
19 301 to illuminate the area under umbrella apparatus 11, 111, or 211. Rib member 301
20 includes a wiring channel 309 configured to receive a wire 311 that conductively
21 connects all of the bulbs 307 installed in rib member 301, thereby forming an electrical
22 circuit between bulbs 307 and the rechargeable power source, such as power sources
23 50, 150, and 250. In this manner, recessed lighting, which is carried entirely within rib
24 member 301 and is not otherwise exposed to the elements, is achieved.

25 Referring now to Figure 4B in the drawings, an alternate embodiment of lighting
26 systems 26, 126, and 226 of the present invention is illustrated. This embodiment is
27 similar to the embodiment of Figure 4A, with the exception that an integral cooling
28 system 410 has been added. In this embodiment, a plurality of lighting elements 307,
29 preferably cold cathode tube bulbs, are recessed into a rib member 301. Rib member
30 301 is indicative of rib members 19, 21, 23, 25, 119, 121, 123, 125, 219, 221, 223, and

1 225. Cooling system 410 comprises a misting means that provides a light mist to cool
2 the area under umbrella apparatus 11, 111, or 211. A cavity 403 is formed within rib
3 member 401. Cavity 403 is adapted to receive and hold light bulb 407. A translucent
4 material 405 extends along the entire length of the cavity 403 to protect bulbs 407 from
5 damage and undesirable exposure to weather and other conditions. Translucent
6 material 405 may have a smooth surface or be textured to accentuate or enhance the
7 light from bulbs 407. Although only a single cold cathode tube bulb 407 is illustrated, it
8 should be understood that there may be many bulbs 407 spaced along the length of rib
9 member 401 to illuminate the area under umbrella apparatus 11, 111, or 211. Rib
10 member 401 includes a wiring channel 409 configured to receive a wire 411 that
11 conductively connects all of the bulbs 407 installed in rib member 401, thereby forming
12 an electrical circuit between bulbs 407 and the rechargeable power source, such as
13 power sources 50, 150, and 250. In this manner, recessed lighting, which is carried
14 entirely within rib member 401 and is not otherwise exposed to the elements, is
15 achieved.

16 A fluid supply channel 421 is provided in order to receive a fluid tight hose which
17 supplies water to a plurality of misting nozzles 425 which generate mist 427 and 480. A
18 fluid discharge channel 423 is provided to carry a fluid tight hose which carries water
19 from the hose in fluid supply channel 421 to misting nozzles 425. In this embodiment,
20 umbrella apparatus should include a small reservoir (not shown) of water or other water
21 source, such as an inlet hose, and an electric pump to pressurize and pump the water
22 through cooling system 410. In this manner, umbrella apparatus 11, 111, or 211
23 provides both light and a cooling mist to those in close proximity.

24 Referring now to Figure 4C in the drawings, another embodiment of lighting
25 systems 26, 126, and 226 of the present invention is illustrated. This embodiment is
26 similar to the embodiment of Figure 4A, with the exception that a different integral
27 cooling system 510 has been added. In this embodiment, a plurality of lighting
28 elements 507, preferably cold cathode tube bulbs, are recessed into a rib member 501.
29 Rib member 501 is indicative of rib members 19, 21, 23, 25, 119, 121, 123, 125, 219,
30 221, 223, and 225. Cooling system 510 comprises a fanning means that provides a

1 cool breeze under umbrella apparatus 11, 111, or 211. A cavity 503 is formed within rib
2 member 501. Cavity 503 is adapted to receive and hold light bulb 507. A translucent
3 material 505 extends along the entire length of the cavity 503 to protect bulbs 507 from
4 damage and undesirable exposure to weather and other conditions. Translucent
5 material 505 may have a smooth surface or be textured to accentuate or enhance the
6 light from bulbs 507. Although only a single cold cathode tube bulb 507 is illustrated, it
7 should be understood that there may be many bulbs 507 spaced along the length of rib
8 member 501 to illuminate the area under umbrella apparatus 11, 111, or 211. Rib
9 member 501 includes a wiring channel 509 configured to receive a wire 511 that
10 conductively connects all of the bulbs 507 installed in rib member 501, thereby forming
11 an electrical circuit between bulbs 507 and the rechargeable power source, such as
12 power sources 50, 150, and 250. In this manner, recessed lighting, which is carried
13 entirely within rib member 501 and is not otherwise exposed to the elements, is
14 achieved.

15 A wiring conduit 520 is provided which routes electrical wiring from wire 511 to an
16 electric motor 524 carried in a recessed cavity 522. Fanning means 528 and 580, such
17 as fan blades, are carried by rotating shafts 530 which are connected to motors 524.
18 When energized, motors 524 rotate fan blades 528 and 580, thereby providing a cooling
19 breeze under umbrella apparatus 11, 111, and 211. A plurality of fan blade sets 528
20 and 580 may be located at predetermined locations along the length of rib member 501.

21 Referring now to Figure 5A in the drawings, a block diagram representation of
22 the preferred embodiment of opening and closing systems 40, 140, and 240 is
23 illustrated. As is shown, a pulley system 600 is coupled through gears 602 to an electric
24 motor 604. A switch 606 is electrically connected between a power supply 608 and
25 electric motor 604. Power supply 608 is indicative of rechargeable power systems 50,
26 150, and 250. External power system charger 610 and solar charger 612 are coupled
27 to power supply 608 to recharge the rechargeable battery elements. External power
28 system charger 610 is indicative of external power system chargers 51 and 251. Solar
29 charger 612 is indicative of alternate power system chargers 62, 162, and 262.
30 Mechanical actuation of switch 606 allows current to flow from power supply 608 to

1 electric motor 604. Motor 604 works through gears 602 to operate pulley 600, thereby
2 opening and closing canopy 17, 117, or 217 of umbrella apparatus 11, 111, or 211,
3 respectively.

4 Referring now to Figure 5B in the drawings, another embodiment of the opening
5 and closing systems 40, 140, and 240 of the present invention is illustrated. In this
6 embodiment, a wireless transmitter 708 is utilized to transmit encoded signals and
7 remotely communicate with a wireless receiver 706 that is carried by umbrella
8 apparatus 11, 111, or 211, preferably near housings 44, 144, and 244. A decoder 704
9 is provided to decode the encoded signals. As is conventional with such receivers and
10 transmitters, transmitter 708 and receiver 706 may be adapted to be coded on a
11 particular frequency or coding scheme which enable a dedicated transmitter 708 to
12 actuate a particular receiver 706. A decoder 704 coupled to an electrical switch 702
13 serves to allow for such identification. Switch 702 controls the application of electrical
14 energy from a power supply 710 to an electric motor 700. Power supply 710 is indicative
15 of rechargeable power systems 50, 150, and 250. Motor 700 is indicative of motors 49,
16 149, and 249. In this manner, a motorized retraction system may be actuated remotely
17 utilizing wireless transmitter 708.

18 Referring now to Figures 6-9 in the drawings, the preferred embodiments of the
19 umbrella apparatus of the present invention are illustrated. In these embodiments, the
20 rechargeable power source and solar recharging system are mounted atop the pole
21 portion of the umbrella apparatus above the canopy. One concept which runs
22 throughout the embodiments depicted in Figures 6-9 is the utilization of a "power unit."
23 This concept involves the placement of a unitary structure at a defined location relative
24 to the umbrella. For example, in the embodiments of Figures 6-9, the power unit is
25 shown at a top location directly above the umbrella apparatus, and secured to the pole
26 portion with a threaded coupling. Figure 6 depicts a top-mounted power unit and a cold
27 cathode tube lighting system. Figure 7 depicts a top-mounted power unit with a fanning
28 means cooling system. Figure 8 depicts a top-mounted power unit with mist producing
29 cooling system. Figure 9 depicts a top-mounted power unit with an automated opening
30 and closing system.

1 Although Figures 6-9 depict power units with a single electrical system, it should
2 be understood that in alternative embodiments, one could mix and match these
3 electrical subassemblies such that a single power unit provides electrical power to two
4 or more subassemblies. For example, an umbrella apparatus may include a lighting
5 system and either one or both of the cooling systems described above. Alternatively, an
6 umbrella apparatus may include a lighting system, a cooling system, and an automated
7 opening and closing system as described herein. In this manner, the umbrella
8 apparatus of the present invention is modular such that the different subsystems can be
9 easily mixed and matched.

10 This modularity allows one to manufacture and sell aftermarket kits which can be
11 installed and interchanged by the umbrella owners. Such kits may include a power unit
12 and one or more of the subsystems, such as a lighting system and/or a cooling system
13 and/or an automated opening and closing system. Because the power unit is relatively
14 self-contained, little interaction is required to attach the power unit to an umbrella
15 apparatus. Alternatively, this modularity in design facilitates the mass manufacture of
16 umbrellas, allowing the electrical system to be manufactured by one factory, and the
17 umbrella systems, which do not include electrical systems, to be manufactured by a
18 different factory. The parts can then be brought together in an assembly area and
19 assembled together.

20 Referring now specifically to Figure 6, an umbrella apparatus 701 is illustrated.
21 As is shown, a power unit 725 is provided for connection to the uppermost portion of
22 umbrella apparatus 701. In this embodiment, a cold cathode tube light subassembly
23 721 is provided for connection at a different location to umbrella apparatus 701. Power
24 unit 725 includes a solar collector 727 at its uppermost portion. Solar collector 727 is
25 preferably carried by a top portion 703 of power unit 725. A bottom portion 705 of
26 power unit 725 defines an interior battery compartment 707. Additionally, power unit
27 725 carries a coupling mechanism 729 to allow coupling between power unit 725 and a
28 pole portion 719 of umbrella apparatus 701, pole portion 719 being adapted at an upper
29 end 711, preferably with threads 713, to releasably receive power unit 725. A top cap
30 715 hingedly connects pole portion 719 to a canopy 717. Cold cathode tube light

1 subassembly 721 is coupled at a desired location underneath canopy 717 to provide
2 high intensity light in the area surrounding umbrella apparatus 701. Cold cathode tube
3 light subassembly 721 is conductively coupled to power unit 725 by wiring 709 that
4 passes through the hollow interior of pole portion 719. Such light allows users to read,
5 play games, or perform other leisure activities that require a relatively high intensity
6 light. The electrical components of umbrella apparatus 701 are entirely independent of
7 any household electrical system. The power source, such as power sources 50, 150,
8 and 250, carried by power unit 725 is utilized to energize cold cathode tube light
9 subassembly 721. During daylight hours, solar energy is collected by solar panel 727
10 and is converted and utilized to recharge the rechargeable power source which is
11 maintained within battery compartment 707.

12 Cold cathode tube light subassembly 721 is described below in more detail
13 below. As will be appreciated by those skilled in the art, other low power lighting
14 systems may be used instead of cold cathode tube light sub assembly 721. For
15 example, an LED or fluorescent lighting subassembly may be utilized instead. LED and
16 fluorescent systems designed for use with solar and low voltage lighting are known in
17 the art. Such alternative lighting sources may be easily used with the present system in
18 manners which are recognized by those skilled in the art. Implementation of LED,
19 fluorescent, or other alternate light sources instead of cold cathode tube light
20 subassembly 721 is a straightforward and need not be further described in detail.

21 Referring now specifically to Figure 7 in the drawings, an umbrella apparatus 801
22 is illustrated. As is shown, a power unit 825 is provided for connection to the uppermost
23 portion of umbrella apparatus 801. In this embodiment, a cooling system 821
24 comprising a fanning means 831 is provided for connection at a different location to
25 umbrella apparatus 801. Power unit 825 includes a solar collector 827 at its uppermost
26 portion. Solar collector 827 is preferably carried by a top portion 803 of power unit 825.
27 A bottom portion 805 of power unit 825 defines an interior battery compartment 807.
28 Additionally, power unit 825 carries a coupling mechanism 829 to allow coupling
29 between power unit 825 and a pole portion 819 of umbrella apparatus 801, pole portion
30 819 being adapted at an upper end 811, preferably with threads 813, to releasably

1 receive power unit 825. A top cap 815 hingedly connects pole portion 819 to a canopy
2 817. Cooling system 821 is coupled at a desired location underneath canopy 817 to
3 provide a cooling breeze in the area surrounding umbrella apparatus 801. Cooling
4 system 821 is conductively coupled to power unit 825 by wiring 809 that passes through
5 the hollow interior of pole portion 819. The electrical components of umbrella apparatus
6 801 are entirely independent of any household electrical system. The power source,
7 such as power sources 50, 150, and 250, carried by power unit 825 is utilized to
8 energize cooling system 821. During daylight hours, solar energy is collected by solar
9 panel 827 and is converted and utilized to recharge the rechargeable power source
10 which is maintained within battery compartment 807.

1 Referring now specifically to Figure 8 in the drawings, an umbrella apparatus 901
2 is illustrated. As is shown, a power unit 955 is provided for connection to the uppermost
3 portion of umbrella apparatus 901. In this embodiment, a cooling system 921
4 comprising a misting system 931 is provided for connection at a different location to
5 umbrella apparatus 901. Power unit 955 includes a solar collector 957 at its uppermost
6 portion. Solar collector 957 is preferably carried by a top portion 903 of power unit 955.
7 A bottom portion 905 of power unit 955 defines an interior battery compartment 907.
8 Additionally, power unit 955 carries a coupling mechanism 959 to allow coupling
9 between power unit 955 and a pole portion 919 of umbrella apparatus 901, pole portion
10 919 being adapted at an upper end 911, preferably with threads 913, to releasably
11 receive power unit 955. A top cap 915 hingedly connects pole portion 919 to a canopy
12 917. The electrical components of umbrella apparatus 901 are entirely independent of
13 any household electrical system. The power source, such as power sources 50, 150,
14 and 250, carried by power unit 955 is utilized to energize cooling system 921. During
15 daylight hours, solar energy is collected by solar panel 957 and is converted and utilized
16 to recharge the rechargeable power source which is maintained within battery
17 compartment 907.

18 Cooling system 921 is coupled at a desired location underneath canopy 917 to
19 provide a cooling mist in the area surrounding umbrella apparatus 901. Cooling system
20 921 is conductively coupled to power unit 955 by wiring 909 that passes through the
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1 hollow interior of pole portion 919. Cooling system 921 is a misting system comprising
2 a reservoir 925, or other water source, a pump 927, water feed lines 929, and mist
3 nozzles 923. Pump 927 pressurizes and pumps the water from reservoir 925 through
4 water feed lines 929 and out of mist nozzles 923, which are located at selected spaced
5 intervals under canopy 917, at a selected flow rate. Reservoir 925 may be a
6 conventional ice cooler, such that the mist is chilled water.

7 Referring now specifically to Figure 9 in the drawings, an umbrella apparatus
8 1001 is illustrated. As is shown, a power unit 1055 is utilized to provide electrical power
9 to an automated opening and closing system 1050. Power unit 1055 includes a solar
10 collector 1027 at its uppermost portion. Solar collector 1027 is preferably carried by a
11 top portion 1003 of power unit 1055. A bottom portion 1005 of power unit 1055 defines
12 an interior battery compartment 1007. Additionally, power unit 1055 carries a coupling
13 mechanism 1029 to allow coupling between power unit 1055 and a pole portion 1019 of
14 umbrella apparatus 1001, pole portion 1019 being adapted at an upper end 1011,
15 preferably with threads 1013, to releasably receive power unit 1055. A top cap 1015
16 hingedly connects pole portion 1019 to a canopy 1017. The electrical components of
17 umbrella apparatus 1001 are entirely independent of any household electrical system.
18 Automated opening and closing system 1050 is conductively coupled to power unit 1055
19 by wiring 1009 that passes through the hollow interior of pole portion 1019. The power
20 source, such as power sources 50, 150, and 250, carried by power unit 1055 is utilized
21 to energize automated opening and closing system 1050. During daylight hours, solar
22 energy is collected by solar panel 1027 and is converted and utilized to recharge the
23 rechargeable power source which is maintained within battery compartment 1007.

24 Automated opening and closing system 1050 is carried at the uppermost portion
25 of pole portion 1019. Opening and closing system 1050 includes a motor 1021, a
26 transmission 1023, a line winding shaft 1025, a pulley system 1031, and a cable system
27 1033. These components cooperate to open and close the umbrella in response to the
28 receipt of a command signal. The command signal may be supplied by the actuation of
29 a switch (see Figures 1-3) carried on pole portion 1019, or it may be a wireless signal
30 received from a paired transmitter receiver system (see Figure 5B).

1 Referring now to Figure 10 in the drawings, a schematic of the cold cathode tube
2 lighting system of the present invention is illustrated. The invention is to utilize in
3 combination a cold cathode lamp, a power inverter which supplies alternating current to the
4 cold cathode lamp, a rechargeable DC battery pack, and a solar collector. This is depicted
5 in simplified form in Figure 10. This may be utilized in any outdoor application in which
6 there is no easy or convenient access to household power. The system is entirely self-
7 contained and does not require any household power for operation, or charging. As is
8 shown, the cold cathode tube lighting system 3000 includes a cold cathode lamp 3001 that
9 is supplied with AC power from a power inverter 3007. A DC battery pack 3003 includes
10 rechargeable batteries that supply DC current to power inverter 3007. A solar collector
11 3005 is provided to recharge the batteries contained within DC power pack 3003.

12 A cold cathode tube is a lamp that produces light by the passage of an electric
13 current through a vapor or gas maintained within a tube. A cold cathode tube does not
14 require any heating above ambient temperature to produce light. The tube is phosphor
15 coated on its inner surface, and thus may emit various colored light. In most cases, cold
16 cathode tube lamps are low-pressure mercury vapor lamps. Such lamps use a 253.7
17 nanometer ultraviolet emission from mercury vapor excited by an electrical discharge
18 through the lamp to charge the phosphors maintained on the wall of the lamp.

19 The optimum operating temperature for cold cathode tube is approximately 40
20 degrees Celsius, although Applicant believes that these lamps can be produced in a
21 manner to reliably provide outdoor lighting in temperatures as cold as 15 degrees
22 Fahrenheit. While the cold cathode tube does not require heating, the output of the lamp
23 does vary based upon the ambient temperature. At room temperature, the initial output of
24 a lamp is only about seventy percent of its steady state value at 40 degrees Celsius. In
25 contrast, its output is only 25 percent when the lamp is started at zero degrees Celsius.
26 Cold starts do require additional voltage from the power source to ensure reliable
27 operation. However, the number of lamp "starts" has no adverse effect on the lamp. This
28 is not true for fluorescent lamps, which degrade over time due to the number of "starts."
29 Cold cathode tubes may be utilized to supply a white light output.

1 In the preferred embodiment, a cold cathode tube manufactured by Nanjing Lampus
2 Electronics Company, Ltd. is utilized. Specifically, a lamp type CFL-20 is utilized. This has
3 an inner diameter of 1.5 millimeters. The tube length is variable, and may be anywhere in
4 the range of 50 millimeters to 30 millimeters in overall length. The tube is adapted to
5 operate on four milliamps of tube current. The tube voltage is in the range of 200 to 750
6 Volts. The average brightness of this particular tube is 40,000 cd/m².

7 Another advantage of cold cathode tubes is that the tubes can be very thin in
8 diameter. For example, in the preferred implementation, the cold cathode tube may be one
9 or two millimeters in diameter. A cold cathode tube can be bent into any shape and can be
10 formed in very long lengths, such as several feet long. Thus, cold cathode tubes provide
11 greater light output per foot versus conventional lighting.

12 Another significant advantage of cold cathode tubes is that they have relatively long
13 lamp life. It is not unusual to have lamp lives which are thirty to forty thousand hours of
14 use. In other words, these cold cathode tubes have, for all practical purposes, an infinite
15 life span.

16 They are low power devices. They do not generate a lot of heat. They provide high
17 lumen output. For these reasons, fewer batteries are needed to drive the cold cathode ray
18 tube, and smaller solar cell panels may be utilized to recharge the batteries. In other
19 words, relatively small form factors can be achieved because the solar cells, the batteries,
20 and the bulbs can be relatively small in size.

21 The present invention can be implemented on a small, medium, or large scale so
22 the solar cell panels and batteries may be moved up in size to either provide greater light
23 output or to provide for a longer useful life.

24 Additionally, the present invention may be considered to satisfy three separate and
25 distinct outdoor lighting applications, all of which may be incorporated into the umbrella
26 apparatus of the present invention.

27 The first application is that of a "special purpose light," or "task light," such as for
28 security applications. These special purpose lights would provide very light output, for a

1 relatively short duration. One example would be the utilization of the cold cathode ray tube
2 to provide extremely high light output for a very small area for a very short time, all in
3 response to detection of motion in a particular area. For example, a system can be
4 configured to detect motion in a doorway, motion in a yard, motion in a driveway, or the
5 like. The brightness can be provided which can be far in excess of 40,000 cd/m². For
6 example, 100,000 to 200,000 cd/ m² may be provided for a very small area for a very short
7 duration. For example, the duration may be a few minutes to ten minutes.

8 The second application requires a medium amount of light output, but requires
9 longer periods of operation or wider areas of coverage. For example, the light assembly
10 provided with the umbrella provides a relatively high light output, such as in the range of
11 20,000 to 100,000 cd/m², in order to allow one to read, play games, operate a computer, or
12 do needlework under the umbrella. Preferably, the battery pack and associated solar panel
13 is sufficient to allow the system to operate continuously for a time interval in the range of 8-
14 12 hours. Additionally, and preferably, the solar panel should be of the size and output
15 which is sufficient to fully recharge the battery pack during the daylight hours.

16 A third application requires a lower level of light intensity. A good example would be
17 lawn, patio, walkway, or landscape lighting. One does not ordinarily expect to be able to
18 read or do intricate work under this type of lighting. In contrast, all that is expected is that a
19 reasonable amount of light be provided to allow one to walk safely through an area. This
20 type of task may require brightness in the range of 6,000 cd/m² to 60,000 cd/m².

21 Referring now to Figure 11 in the drawings, a block diagram representation of the
22 application of the present invention to a lawn lighting scenario is illustrated. In this
23 scenario, a plurality of solar panels 4001, 4003, 4005, and 4007 are connected together in
24 series. Preferably, solar panels 4001, 4003, 4005, and 4007 are manufactured by
25 Siemens and comprise mono-crystal solar panels, each providing 1.5 Volts. The total
26 current for the array of solar panels is about 80 milliamps. The current from solar panels
27 4001, 4003, 4005, and 4007 is passed through a diode 4009 and then to a battery pack
28 4011. Battery pack 4011 includes a plurality of batteries 4013, 4015, and 4017, for
29 example three AA batteries. In alternative embodiments, as few as two batteries may be

1 used. As is shown, each battery is a 1.2 Volt Nickel Cadmium battery. They collectively
2 provide 700 milliamp hours of power.

3 The output of DC battery pack 4011 is provided as an input to an inverter 4019.
4 Inverter 4019 receives 4.8 Volts DC in and produces as an output of 800 Volts rms AC at
5 40 Hertz. The total current of the output is 4-6 milliamps.

6 This is provided to the cathode of a cold cathode ray tube lamp 4021. The current
7 passes through the vapor maintained within cold cathode ray tube lamp 4021 and causes
8 electrons to be stripped from the gas. These electrons collide with the phosphorus coating
9 on the interior surface of cold cathode ray tube lamp 4021, thereby emitting light.

10 Although the invention has been described with reference to a particular
11 embodiment, this description is not meant to be construed in a limiting sense. Various
12 modifications of the disclosed embodiments as well as alternative embodiments of the
13 invention will become apparent to persons skilled in the art upon reference to the
14 description of the invention. It is therefore contemplated that the appended claims will
15 cover any such modifications or embodiments that fall within the scope of the invention.

What is claimed is:

- 1 1. An umbrella apparatus comprising:
2 a base support portion;
3 a pole portion coupled to the base support portion;
4 a canopy portion hingedly coupled to the pole portion;
5 a rechargeable electrical power system for providing electrical power to the
6 umbrella apparatus; and
7 a solar energy system carried by the pole portion above the canopy portion, the
8 solar energy system being adapted to collect solar energy and convert the solar energy
9 into electrical energy, the solar energy system being conductively coupled to the
10 rechargeable electrical power system, such that the solar energy collected and
11 converted into electrical energy recharges the rechargeable electrical power system.
- 1 2. The umbrella apparatus according to claim 1, wherein the rechargeable electrical
2 power system and the solar energy system are both carried by a housing mounted on
3 the pole portion above the canopy portion.
- 1 3. The umbrella apparatus according to claim 1, wherein the rechargeable electrical
2 power system is carried by the base support portion and the solar energy system is
3 carried by a housing mounted on the pole portion above the canopy portion.
- 1 4. The umbrella apparatus according to claim 1, wherein the rechargeable electrical
2 power system is powered by at least one rechargeable battery.
- 1 5. The umbrella apparatus according to claim 1, further comprising:
2 an electrical charging system for recharging the rechargeable electrical power
3 system, the electrical charging system being adapted to receive power from an AC
4 power outlet.
- 1 6. The umbrella apparatus according to claim 1, further comprising:
2 a lighting system carried by the canopy portion, the lighting system being

3 conductively coupled to and powered by the rechargeable electrical power system.

1 7. The umbrella apparatus according to claim 6, wherein the lighting system
2 comprises:

3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of cold cathode tube elements carried by the rib members, each cold
5 cathode tube element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 8. The umbrella apparatus according to claim 6, wherein the lighting system
2 comprises:

3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of light emitting diode elements carried by the rib members, each light
5 emitting diode element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 9. The umbrella apparatus according to claim 6, wherein the lighting system
2 comprises:

3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of fluorescent light elements carried by the rib members, each
5 fluorescent light element being conductively coupled to and powered by the
6 rechargeable electrical power source.

1 10. The umbrella apparatus according to claim 1, further comprising:

2 an electromechanical opening and closing system for opening and closing the
3 canopy portion, the electromechanical opening and closing system being conductively
4 coupled to and powered by the rechargeable electrical power system.

1 11. The umbrella apparatus according to claim 10, wherein the electromechanical
2 opening and closing system comprises:

3 an electric motor carried by the pole portion;

4 a control system for controlling the electric motor;
5 a gear system coupled to the electric motor; and
6 a cable and pulley system coupled to the gear system and the canopy portion;
7 wherein the opening and closing of the canopy portion is achieved by the electric
8 motor in response to selective operation of the control system.

1 12. The umbrella apparatus according to claim 11, wherein the control system
2 comprises:

3 a receiver conductively coupled to the electric motor;
4 a remote transmitter for transmitting an encoded signal to the receiver; and
5 a decoder conductively coupled to the receiver for decoding the encoded signal
6 fro the transmitter.

1 13. The umbrella apparatus according to claim 1, further comprising:

2 a cooling system carried by the canopy portion, the cooling system being
3 conductively coupled to and powered by the rechargeable electrical power system.

1 14. The umbrella apparatus according to claim 13, wherein the cooling system
2 comprises:

3 at least one electric fan coupled to the canopy portion, each electric fan being
4 conductively coupled to and powered by the rechargeable electrical power system.

1 15. The umbrella apparatus according to claim 13, wherein the cooling system
2 comprises:

3 a fluid reservoir operably associated with the umbrella apparatus;
4 at least one mist nozzle coupled to the canopy portion, each mist nozzle being in
5 fluid communication with the fluid;
6 a conduit creating fluid communication between the fluid reservoir and each mist
7 nozzle; and
8 a pump for pumping the fluid from the reservoir through each mist nozzle.

1 16. An umbrella apparatus comprising:
2 a base support portion;
3 a pole portion coupled to the base support portion;
4 a canopy portion hingedly coupled to the pole portion;
5 a rechargeable electrical power system for providing electrical power to the
6 umbrella apparatus;
7 a solar energy system carried by the pole portion above the canopy portion, the
8 solar energy system being adapted to collect solar energy and convert the solar energy
9 into electrical energy, the solar energy system being conductively coupled to the
10 rechargeable electrical power system, such that the solar energy collected and
11 converted into electrical energy recharges the rechargeable electrical power system;
12 and
13 a combination of two or more of the following modular systems:
14 a lighting system carried by the canopy portion;
15 an electromechanical opening and closing system for opening and closing
16 the canopy portion; or
17 a cooling system;
18 wherein each modular system is configured to be interchanged with each
19 other, each modular system being conductively coupled to and powered by the
20 rechargeable electrical power system.

1 17. The umbrella apparatus according to claim 16, wherein the lighting system
2 comprises:
3 a plurality of rib members coupled to the canopy portion; and
4 a plurality of cold cathode tube elements carried by the rib members, each cold
5 cathode tube element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 18. The umbrella apparatus according to claim 16, wherein the lighting system
2 comprises:
3 a plurality of rib members coupled to the canopy portion; and

4 a plurality of light emitting diode elements carried by the rib members, each light
5 emitting diode element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 19. The umbrella apparatus according to claim 16, wherein the cooling system
2 comprises:

3 a fluid reservoir operably associated with the umbrella apparatus;

4 at least one mist nozzle coupled to the canopy portion, each mist nozzle being in
5 fluid communication with the fluid;

6 a conduit creating fluid communication between the fluid reservoir and each mist
7 nozzle; and

8 a pump for pumping the fluid from the reservoir through each mist nozzle.

1 20. The umbrella apparatus according to claim 16, wherein the electromechanical
2 opening and closing system comprises:

3 an electric motor carried by the pole portion;

4 a control system for controlling the electric motor;

5 a gear system coupled to the electric motor; and

6 a cable and pulley system coupled to the gear system and the canopy portion;

7 wherein the opening and closing of the canopy portion is achieved by the electric
8 motor in response to selective operation of the control system.

1

ABSTRACT OF THE DISCLOSURE

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A lawn or patio umbrella with an integral lighting system that utilizes cold cathode ray tubes, light emitting diodes (LED's), or florescent lights, to provide relatively bright outdoor light for reading and other activities that require relatively high light intensities is provided. In one embodiment, a modular, electrically powered lawn or patio umbrella in which lighting systems, such as those utilizing cold cathode tubes, LED's, or florescent lights; cooling systems, such as those utilizing electric fans or misting systems; and motorized retraction systems; can be selectively interchanged is provided.

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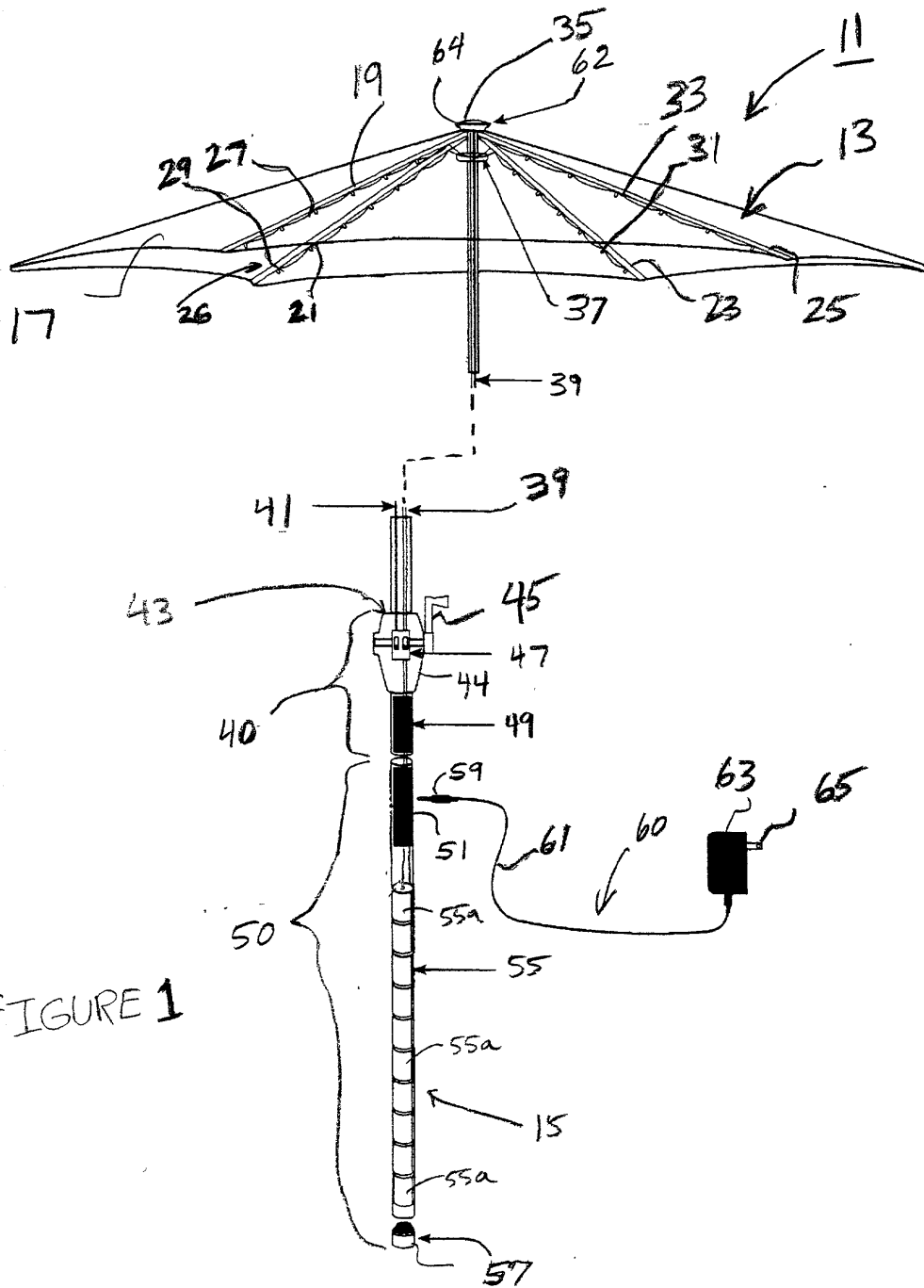
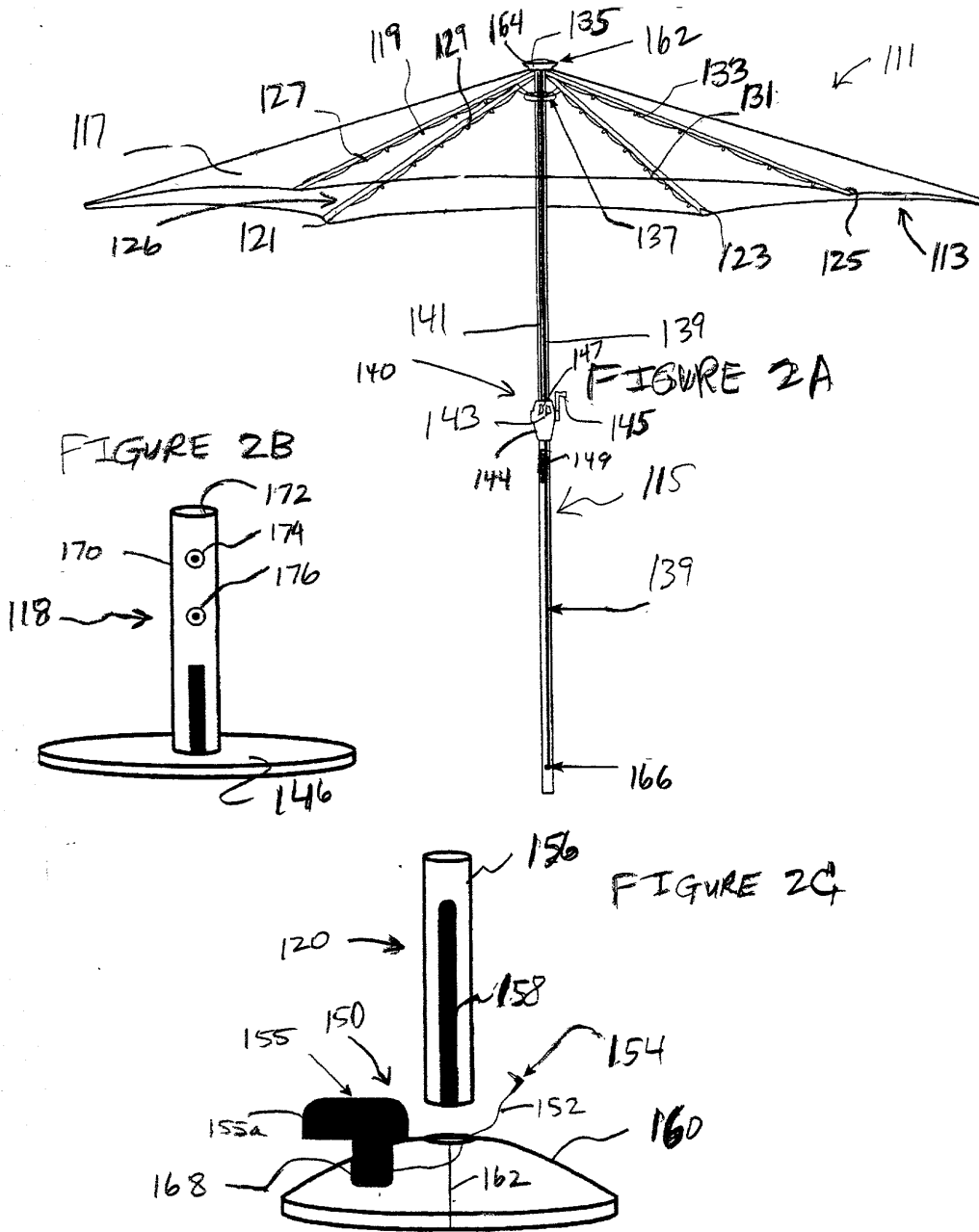


FIGURE 1

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YOT-1002-0040

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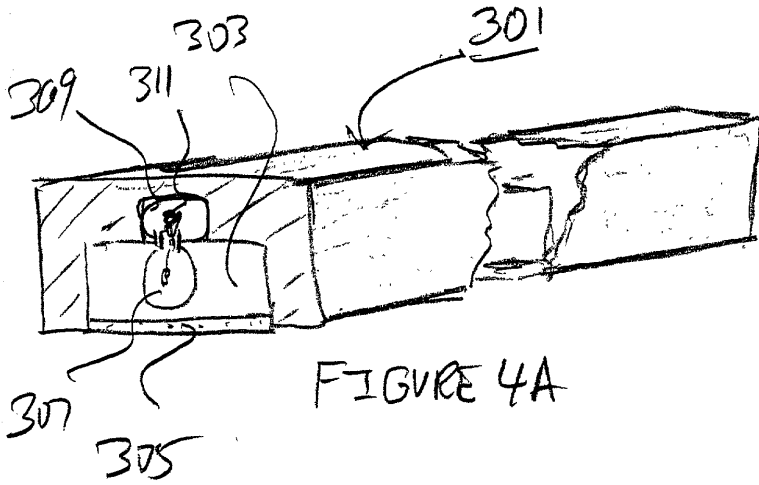
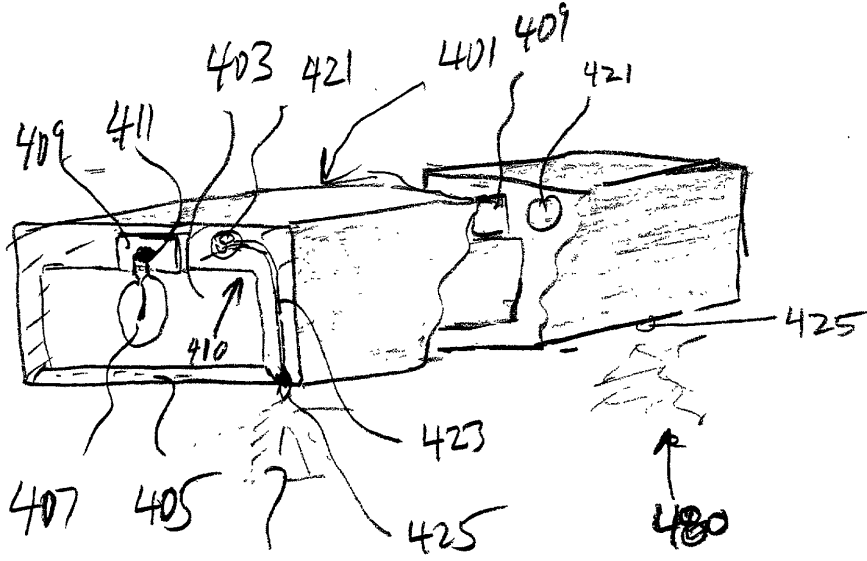


FIGURE 4A



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FIGURE 4B

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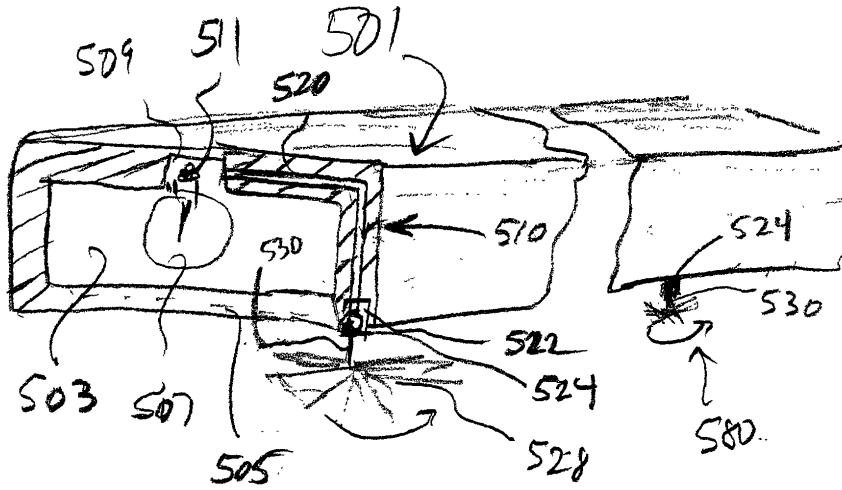
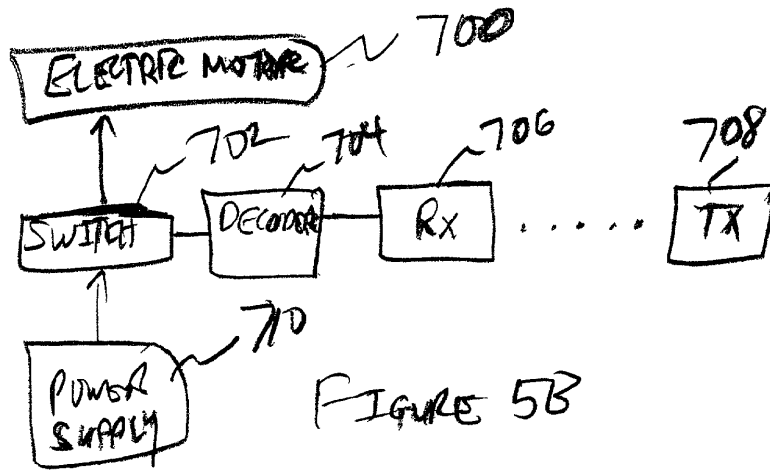
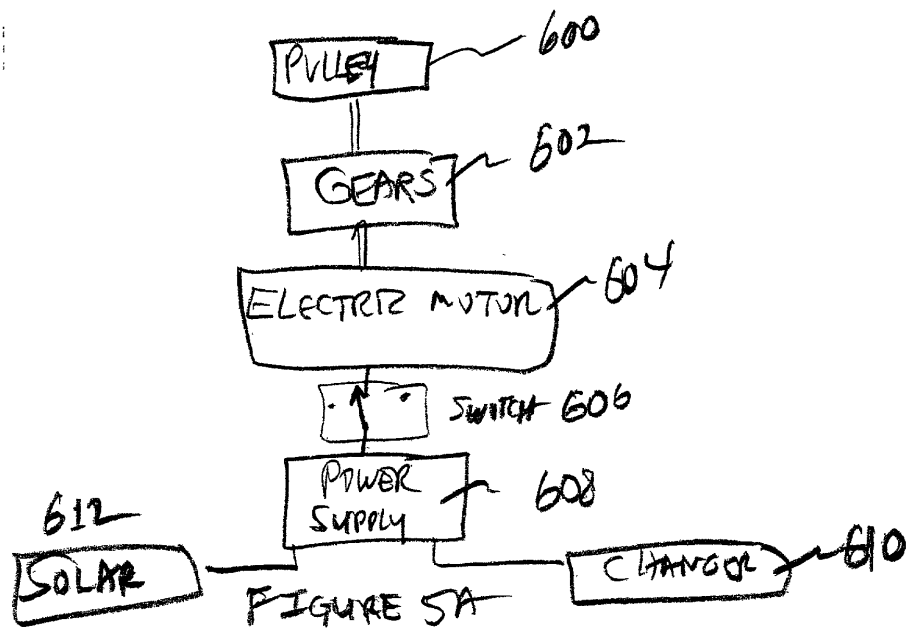


FIGURE 4C

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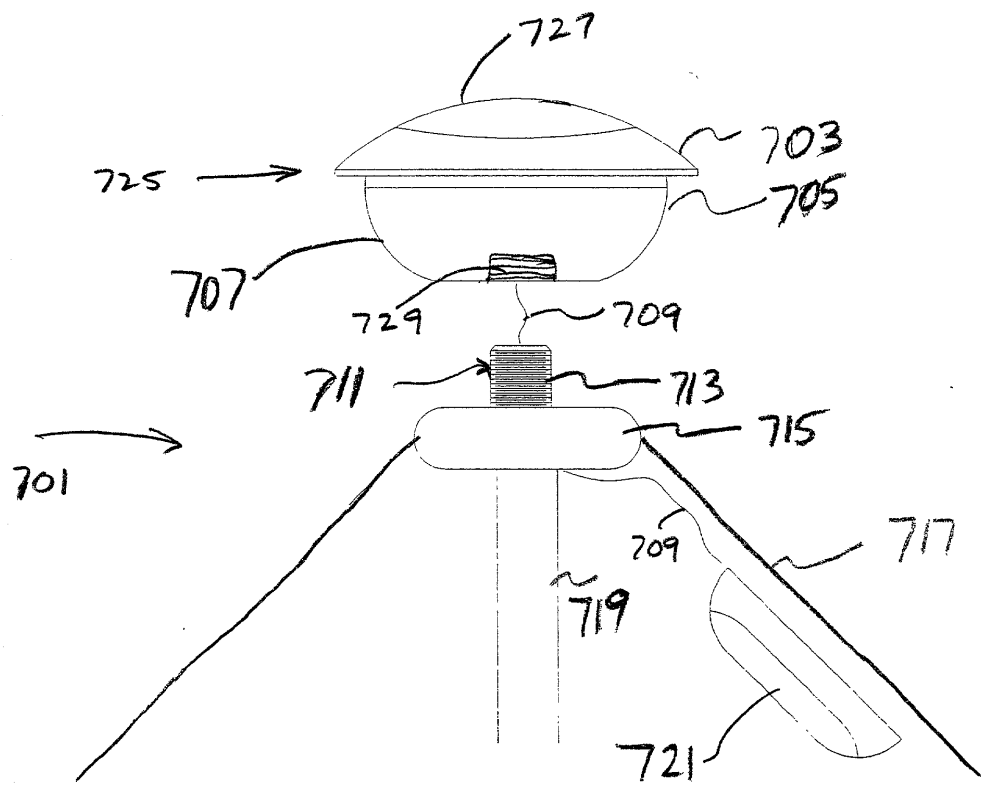


FIGURE 6

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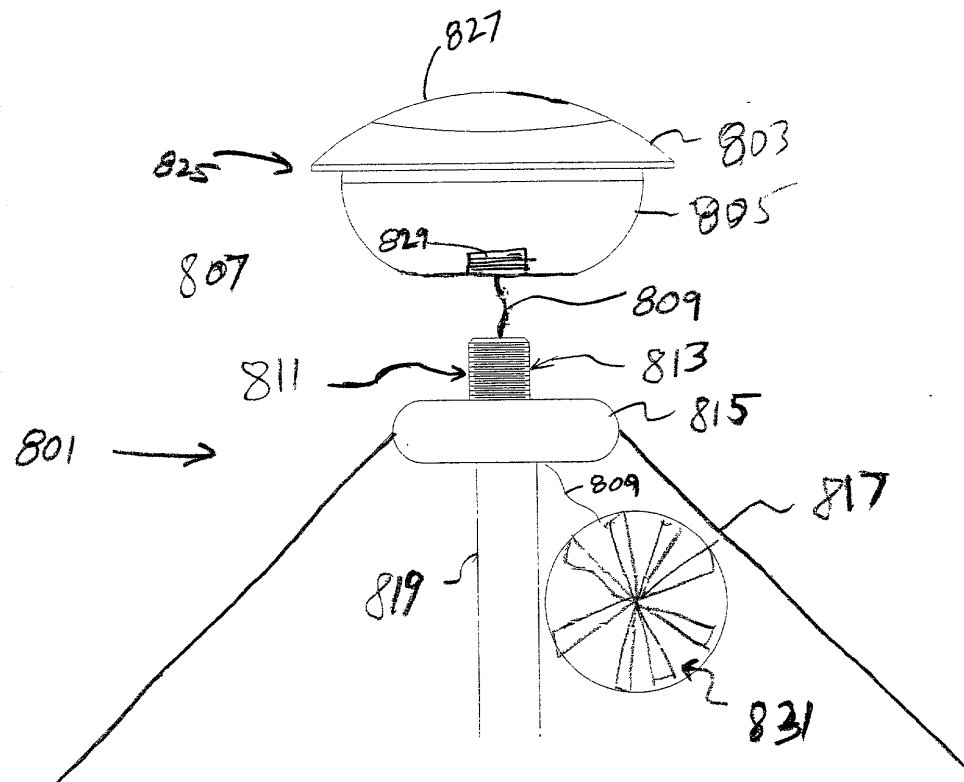
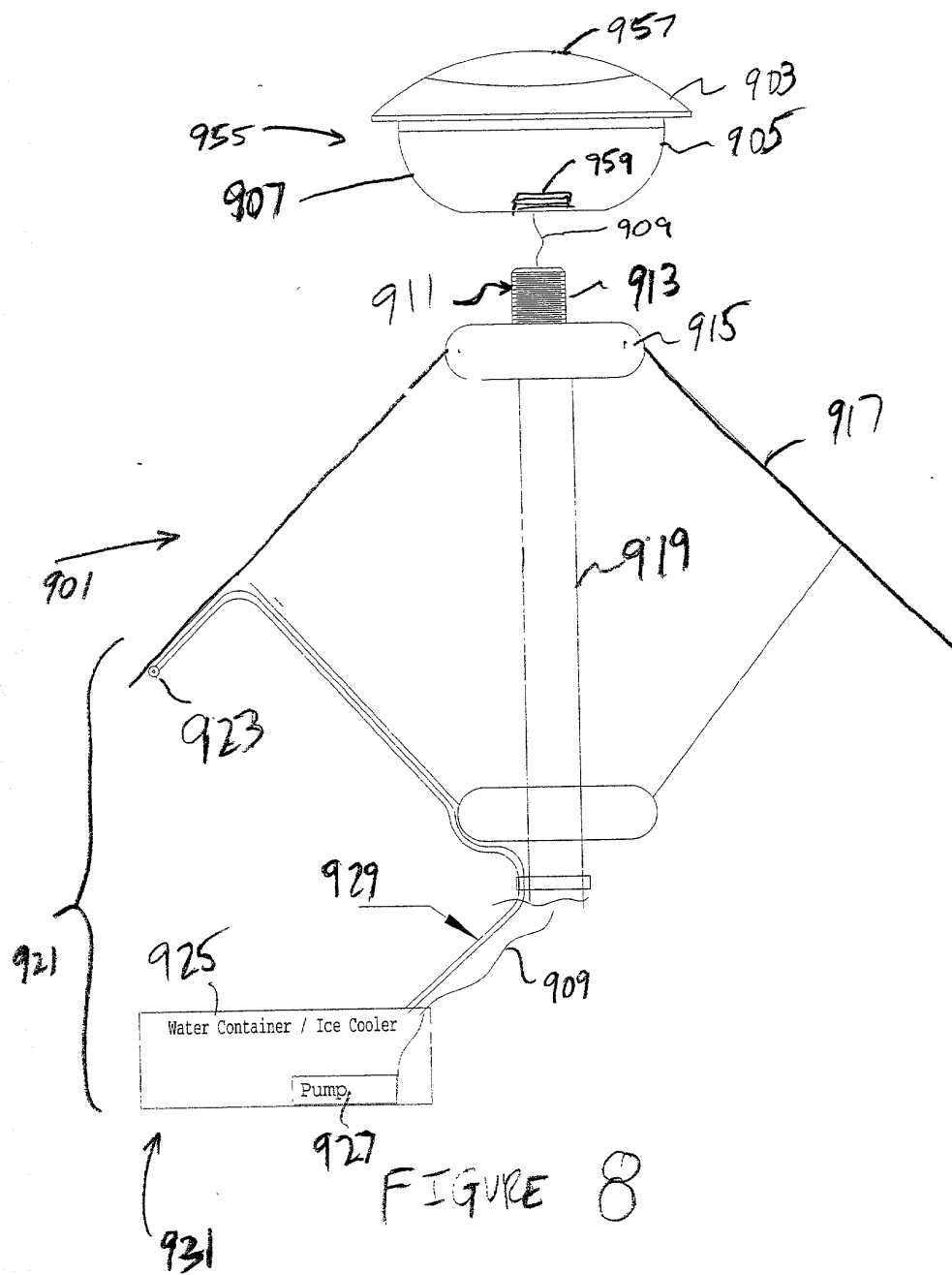


FIGURE 7

2025 RELEASE UNDER E.O. 14176



YOT-1002-0047

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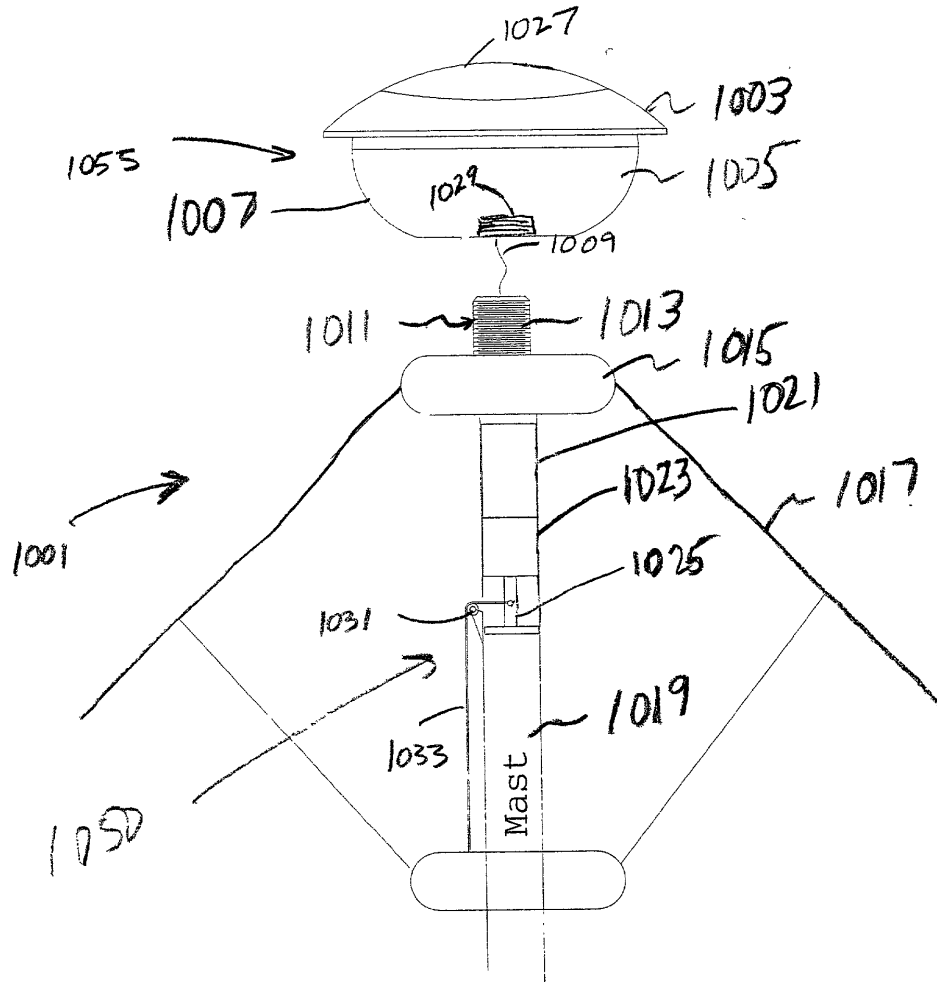


FIGURE 9

YOT-1002-0048

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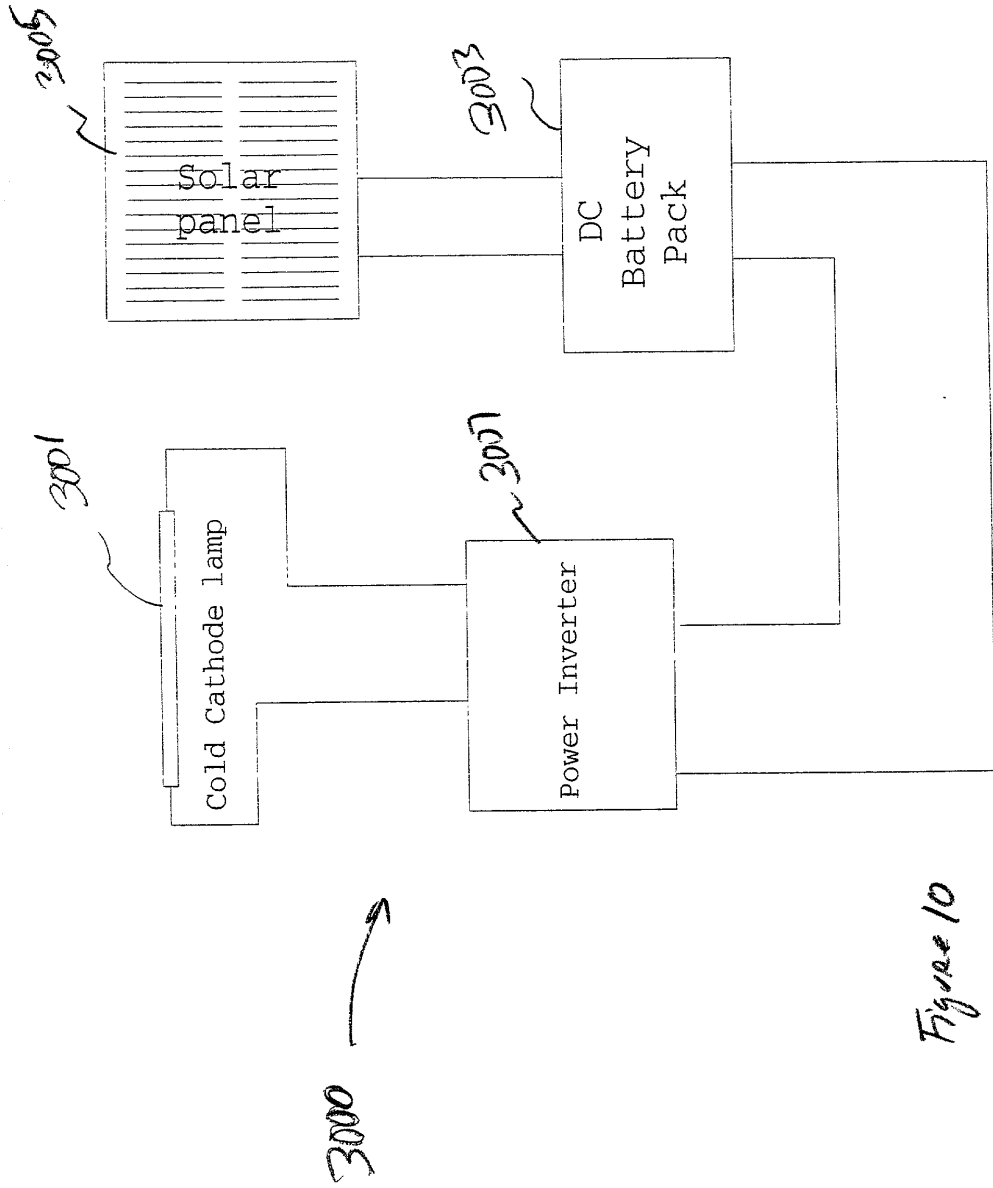


Figure 10

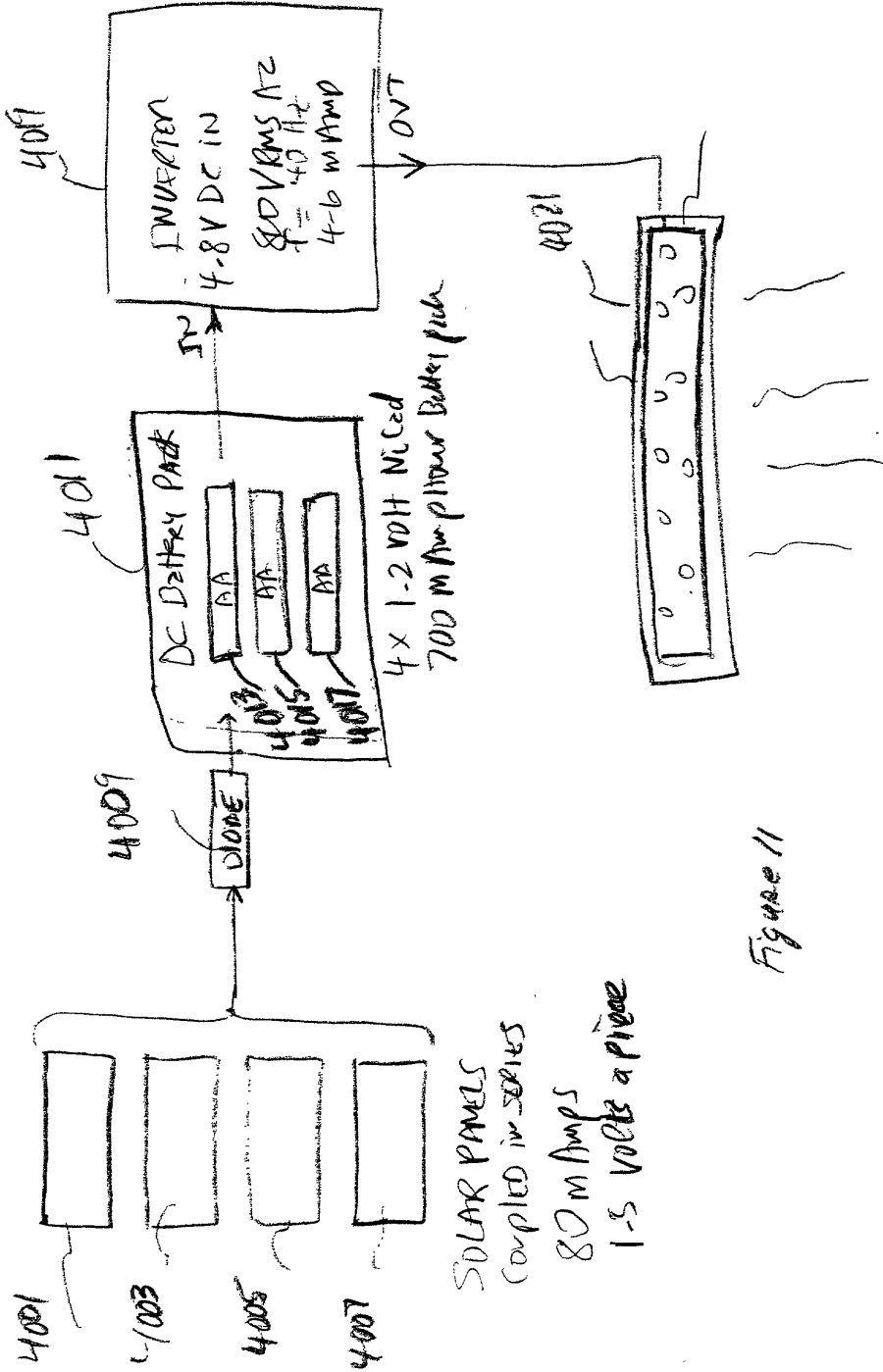


Figure 11

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe that I am an original, first, and sole inventor, or joint inventor if other names are set forth below, of the subject matter which is claimed and for which a patent is sought on the invention entitled

UMBRELLA APPARATUS

said application being filed herewith, and being further identified by Attorney Docket No. **0638MH-40982-US**.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Office all information known to my person to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Sec. 1.56(a).

I hereby declare that this application claims the benefit of U.S. Provisional Application No. 60/267,018, filed 7 February 2001, titled "Lighted Patio Umbrella Apparatus;" and of U.S. Provisional Application No. 60/335,933, filed 2 November 2001, titled "Outdoor Lighting Systems with Cold Cathode Tubes."

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of

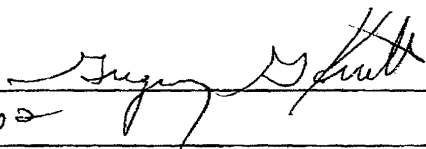
application or any patent issued thereon.

I hereby appoint **Melvin A. Hunn, Reg. No. 32,574, Kenneth C. Hill, Reg. No. 29,650, and James E. Walton, Reg. No. 47,245** to prosecute this application and to transact all business in the U.S. Patent and Trademark Office in connection therewith.

Please send all correspondence to:

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Registration No. 47,245
HILL & HUNN, LLP
201 Main Street, Suite 1440
Fort Worth, Texas 76102-3105
(817) 332-2113 Voice
(817) 332-2114 (Facsimile)
jimwalton@hillandhunn.com (E-Mail)

20070207 04:10 PM

Inventor's Signature: 
Date of Signature: 2-7-02

Full Name of Inventor: **Gregory G. Kuelbs**
Residence and P.O. Address: **1831 River Oaks Drive, Westlake, Texas 76262**
Citizenship: **United States of America**

Declaration

YOT-1002-0052

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In Re Application of:

GREGORY G. KUELBS

Serial No. TO BE ASSIGNED

Filed: HEREWITH

For: TOP PORTION OF LAMP OR HANGABLE ACCESSORY

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Examiner:

Art Unit:

POWER OF ATTORNEY

Box: Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

WORLD FACTORY, INC., assignee of the entire right, title, and interest in the above-identified application filed herewith and being further identified by Attorney Docket No. 0638MH-40982-US, hereby appoints the following attorneys to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected therewith:

James E. Walton, Reg. No. 47,245; Melvin A. Hunn, Reg. No. 32,574; and
Kenneth C. Hill, Reg. No. 29,650.

Send all correspondence to:

James E. Walton
HILL & HUNN, LLP
201 Main Street, Suite 1440
Fort Worth, Texas 76102
(817) 332-2113 (Voice)
(817) 332-2114 (Facsimile)
jimwalton@hillandhunn.com (E-Mail)

Power of Attorney

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or document or any patent resulting therefrom.

WORLD FACTORY, INC.

By: [Signature]
Date: 2-7-02

2002 FEB 07 02:04:02 PM

Power of Attorney

YOT-1002-0054

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. **TO BE ASSIGNED**

Filed: **7 FEBRUARY 2001**

For: **UMBRELLA APPARATUS**

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Examiner:

Art Unit:

**ASSERTION OF ENTITLEMENT TO SMALL ENTITY STATUS
UNDER 37 C.F.R. § 1.27(c)**

Box: Patent Application
Assistant Commissioner for Patents
Washington, D.C.

Sir:

Pursuant to 37 C.F.R. 1.27(c)(2)(i), the undersigned hereby asserts that **WORLD FACTORY, INC.**, owner by assignment of the entire right, title, and interest in the subject application, is a small entity as defined in 37 C.F.R. § 1.9(d) and is entitled to small entity status for purposes of paying reduced fees under Section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the subject invention.

"EXPRESS MAIL" No. EV024943769US
Date of Deposit: <u>2/7/02</u>
I hereby certify that this paper or fee is being deposited with the United States Postal Service Express Mail "Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box: Patent Application, P.O. Box 2327, Arlington, VA 22202-0327,
by <u>Jana E. Walters</u>

Respectfully submitted,

2/7/02
Date

James E. Walton
Melvin A. Hunn, Reg. No. 32,574
Kenneth C. Hill, Reg. No. 29,650
James E. Walton, Reg. No. 47,245
HILL & HUNN LLP
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melhunn@hillandhunn.com (e-mail)
kenhill@hillandhunn.com (e-mail)
jameswalton@hillandhunn.com (e-mail)

ATTORNEYS FOR APPLICANT

ISSUE SLIP STAPLE AREA (for additional cross-references)

ISSUING CLASSIFICATION			
ORIGINAL		CROSS REFERENCE(S)	
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)
362	102	362	9G 209 276
INTERNATIONAL CLASSIFICATION			
A45B	23 100		
	/		
	/		
	/		
	/		

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^ Continued on Issue Slip Inside File Jacket

INDEX OF CLAIMS

✓ Rejected - (Through numeral) Canceled N Non-elected A Appeal
 = Allowed + Restricted I Interference O Objected

Claim	Date	Claim	Date	Claim	Date
1		51		101	
2		52		102	
3		53		103	
4		54		104	
5		55		105	
6		56		106	
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If more than 150 claims or 9 actions staple additional sheet here

YOT-1002-0057

JCS5 U.S. PTO
10/068424
02/07/03

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U.S. UTILITY Patent Application

SEP 02 2003

PATENT NUMBER and
6612713
6612713

JCS5/579

APPL NUM 10068424	FILING DATE 02/07/2002	CLASS 362	SUBCLASS	GAU 2875	EXAMINER S. Downey
**APPLICANTS: Kuelbs Gregory;					
**CONTINUING-DATA VERIFIED: THIS APPLN CLAIMS BENEFIT OF 60/267,018 02/07/2001 AND CLAIMS BENEFIT OF 60/335,933 11/02/2001					
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** FOREIGN APPLICATIONS VERIFIED:					
PG-PUB DO NOT PUBLISH <input checked="" type="checkbox"/>		RESCIND <input type="checkbox"/>			
Foreign priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		35 USC 119 conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		ATTORNEY DOCKET NO 0638MH-40982-US	
Verified and Acknowledged Examiners' initials S. Downey 3/17/2003		Title: Umbrella apparatus			

U.S. DEPT. OF COMM. PAT. & TM. PTO-436L (Rev. 12-04)

NOTICE OF ALLOWANCE MAILED 3/20/03		Hargobind S. Downey Assistant Examiner		CLAIMS ALLOWED Total Claims 14 Print Claim for O.G. 1	
ISSUE FEE Amount Due 650 Date Paid 6-10-03		Sandra O'Shea Supervisory Patent Examiner Technology Center 2800 Primary Examiner Prepared for Issue		DRAWING Sheets Drwg. 11/2 Figs. Drwg. 18 Print Fig. 1 April Wise Application Examiner 3/20/03	
<input type="checkbox"/> TERMINAL DISCLAIMER ISSUE FEE		WARNING: The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code Title 35, Sections 122, 181 and 368, Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.			

FILED WITH: DISK (CRF) CD-ROM
(Attached in pocket on right inside flap)

2-0058

SEARCH

Class	Sub.	Date	Exmr.
362/	96	11/4/2002	H. Sawhney
	102	↓	↓
	577	↓	↓
	209	↓	↓
	276	↓	↓
upgraded text search for the above indicated class/sub-class		3/17/2003	↓

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
All of the above - indicated class/sub-class		3/17/2003	H. Sawhney
		↓	↓

SEARCH NOTES

(List databases searched. Attach search strategy inside.)

	Date	Exmr.
EBST Text Search	12/4/2002	H. Sawhney
	12/5/2002	↓
EBST Text Search	3/17/2003	↓

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OT-1002-05

02-08-0

A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

J1054 U.S. PTO
02/07/02

In re Application of:

GREGORY G. KUELBS

Serial No. TO BE ASSIGNED

Filed: 7 FEBRUARY 2001

For: UMBRELLA APPARATUS

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Examiner:

Art Unit:

JCE25 U.S. PTO
10/066424
02/07/02

TRANSMITTAL

Box: Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please file the following enclosed documents in the subject application:

1. This Transmittal with Certificate of Express Mail;
2. Patent Application Specification, including Twelve Sheets of Drawings;
3. Declaration;
4. Assertion of Entitlement to Small Entity Status;
5. Assignment and Assignment Cover Sheet;
6. Power of Attorney;
7. Our check in the amount of \$410.00 to cover the \$370.00 Filing Fee and the \$40.00 Assignment Recordation Fee; and
8. Our return postcard which we would appreciate you date stamping and returning to us.

"EXPRESS MAIL" No. EV024943769US
Date of Deposit: <u>2/7/02</u>
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by <u>Jana E. Walther</u>

The Filing Fee is calculated as follows:

Basic Fee	\$370.00
Assignment Recordation Fees	\$ 40.00
Total	<hr/> \$410.00

Enclosed is a check in the amount of \$410.00 to cover the \$370.00 Filing Fee and the \$40.00 Assignment Recordation Fee. No other fees is deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees, or credit any overpayments, to Deposit Account No. 50-1060.

Respectfully submitted,

2/7/02
Date

James E. Walton
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Kenneth C. Hill, Reg. No. 29,650
Melvin A. Hunn, Reg. No. 32,574
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ATTORNEYS FOR APPLICANT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. TO BE ASSIGNED

Filed: 7 FEBRUARY 2001

For: UMBRELLA APPARATUS

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Examiner:

Art Unit:

CERTIFICATION UNDER 35 USC SECTION 122(b)(2)(B)(i) OF NO FOREIGN FILINGS

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Applicant hereby certifies (through counsel) that the above-identified application filed herewith has not, and will not, be the subject of an application filed in another country, or under a multi-lateral international agreement that requires publication of applications eighteen (18) months after filing. Therefore, Applicant requests that the subject application not be published under 35 U.S.C. § 122(b)(1).

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by *Jana E. Watts*

2002 FEB 07 10 43 AM '02

Respectfully submitted,

2/7/02
Date

James E. Walton
Mekyn A. Hunn, Reg. No. 32,574
Kenneth C. Hill, Reg. No. 29,650
James E. Walton, Reg. No. 47,245
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melhunn@hillandhunn.com (e-mail)
kenhill@hillandhunn.com (e-mail)
jameswalton@hillandhunn.com (e-mail)

ATTORNEYS FOR APPLICANT

2025 RELEASE UNDER E.O. 14176

SPECIFICATION

Attorney Docket No. **0638MH-40982-US**

0638MH-40982-US

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN that I, **Gregory G. Kuelbs**, residing in the city of Westlake, Texas, have invented new and useful improvements in a

UMBRELLA APPARATUS

of which the following is a specification.

"EXPRESS MAIL" No. EV024943769US
Date of Deposit: <u>2/7/02</u>
I hereby certify that this paper or fee is being deposited with the United States Postal Service Express Mail "Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box: Patent Application, P.O. Box 2327, Arlington, VA 22202-0327, by <u>Jane E. Walters</u>

1 This application claims the benefit of U.S. Provisional Application No. 60/267,018,
2 filed 7 February 2001, titled "Lighted Patio Umbrella Apparatus;" and of U.S. Provisional
3 Application No. 60/335,933, filed 2 November 2001, titled "Outdoor Lighting Systems with
4 Cold Cathode Tubes."

5 **BACKGROUND OF THE INVENTION**

6 **1. Field of the Invention:**

7 The present invention relates in general to patio umbrellas, and in particular, to an
8 improved patio umbrella with integral lighting system and other modular electronic systems
9 and components.

10 **2. Description of the Prior Art:**

11 There has been a recent increase in the interest in entertaining in a lawn and
12 garden environment. Patio furniture is quite popular and useful for outdoor entertaining,
13 especially in portions of the country that have warmer climates. However, the sun often
14 presents an impediment to such outdoor entertaining. Consequently, sales have increased
15 for relatively large patio and table umbrellas for use in shielding or shading table areas and
16 people sitting around the tables from direct exposure to the sunlight. Given the relatively
17 high degree of interest in patio umbrellas, it is likely that improved umbrellas, or umbrellas
18 with enhanced functions, will be well received in the marketplace.

19



1 **SUMMARY OF THE INVENTION**

2 It is one objective of the present invention to provide a lawn or patio umbrella with
3 an integral lighting system that utilizes cold cathode tubes, light emitting diodes (LED's), or
4 florescent lights, to provide relatively bright outdoor light for reading and other activities that
5 require relatively high light intensities.

6 It is another objective of the present invention to provide an a lawn or patio umbrella
7 with an integral lighting system that utilizes cold cathode tubes, LED's, or florescent lights,
8 to provide relatively bright outdoor light, and its own rechargeable power supply, including
9 solar cells.

10 It is yet another objective of the present invention to provide a lawn or patio umbrella
11 with an integral lighting system that utilizes cold cathode tubes, LED's, or florescent lights,
12 to provide relatively bright outdoor light, and a motorized retraction system that aids in
13 opening and closing the umbrella.

14 It is yet another objective of the present invention to provide a lawn or patio umbrella
15 with an integral lighting system that utilizes cold cathode tubes, LED's, or florescent lights,
16 to provide relatively bright outdoor light, and a cooling system, such as one that utilizes
17 electric fans or misting systems.

18 It is yet another objective of the present invention to provide a modular, electrically
19 powered lawn or patio umbrella in which lighting systems, such as those utilizing cold
20 cathode tubes, LED's, or florescent lights; cooling systems, such as those utilizing electric
21 fans or misting systems; and motorized retraction systems; can be selectively
22 interchanged.

23 The above objects are achieved, for example, by integrating a rechargeable power
24 system, a lighting system, a motorized retraction system, and/or a cooling system into a
25 relatively large patio umbrella. The resulting umbrella does not have to be connected to a
26 household electrical system, is a relatively low power consuming device, does not generate
27 much heat, provides a high amount of light intensity, reduces the overall energy
28 consumption of outdoor lighting, allows for fewer batteries to be utilized in each lighting

1 fixture, allows for easier recharging of the batteries due to the lower power requirements,
2 and allows the utilization of smaller photovoltaic solar cells.

3 In the embodiment that utilizes a cold cathode tube, one additional advantage is that
4 the cold cathode tube may be operated at multiple voltage levels to provide differing
5 amounts of light output. In one particular embodiment, a wireless receiver and transmitter
6 pair may be utilized to allow an operator to use a wireless command signal to change the
7 operating state of the lighting system, such as switching the system between an on and off
8 condition, and switching the system between varying levels of light output. Accordingly, an
9 operator may intensify the light output from the lighting system through use of a wireless
10 handheld transmitter when he wants additional light from a particular umbrella.

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BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. However, the invention itself, as well as a preferred mode of use and further objectives and advantages thereof, will best be understood by reference to the following detailed description of the preferred embodiment when read in conjunction with the following drawings.

Figure 1 is a fragmentary and sectional view of the preferred embodiment of the lighted umbrella with motorized opening and closing system according to the present invention.

Figures 2A, 2B, and 2C are pictorial, fragmentary, and section views of an alternate embodiment of the present invention which is directed to a lighted umbrella with a stand and a single battery and removable base cover.

Figures 3A, 3B, and 3C are pictorial, fragmentary, and partial section views of another alternate embodiment of the present invention which is directed to a lighted umbrella with a stand, charger, batteries, and removable battery cover.

Figure 4A is a fragmentary and sectional view of another alternate embodiment of the present invention which is directed to a lighted umbrella with recessed lighting.

Figure 4B is a fragmentary and sectional view of another alternate embodiment of the present invention which is directed to a lighted umbrella with integral misting system.

Figure 4C is a fragmentary and sectional view of another alternate embodiment of the present invention which is directed to a lighted umbrella with an integral fan system.

Figure 5A is a block diagram representation of the motorized opening and closing system of the umbrella of Figure 1 and of the other embodiments of the umbrella of the present invention.

Figure 5B is a block diagram representation of an alternate embodiment of the motorized opening and closing system of Figure 5A.

1 Figure 6 is a simplified schematic of an alternative embodiment of the present
2 invention which is directed to a lighted umbrella with a top-mounted power unit and a cold
3 cathode tube lighting system.

4 Figure 7 is a simplified schematic of an alternative embodiment of the present
5 invention which is directed to an umbrella with a top-mounted power unit and an electric
6 fan cooling system.

7 Figure 8 is a simplified view of an alternative embodiment of the present invention
8 which is directed to an umbrella with a top-mounted power unit and a mist producing
9 cooling system.

10 Figure 9 is a simplified schematic of an alternate embodiment of the present
11 invention that is directed to an umbrella with a top-mounted power unit and a motorized
12 opening and closing system.

13 Figure 10 is a schematic of one broad implementation of the present invention.

14 Figure 11 is a block diagram representation of the present invention.
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DETAILED DESCRIPTION OF THE INVENTION

Referring to Figure 1 in the drawings, one embodiment of an umbrella apparatus according to the present invention is illustrated. Umbrella apparatus 11 includes an umbrella portion 13 and a hollow tubular pole portion 15. Pole portion 15 is coupled to and supports umbrella portion 13. Umbrella portion 13 is preferably retractable and may be moved between a raised, or expanded open position, which is shown; and a lowered, or retracted, closed position in which umbrella portion is collapsed down about pole portion 15, as is conventional. A flexible canopy 17 is attached to and covers umbrella portion 15. Canopy 17 is supported by a plurality of rib members 19, 21, 23, and 25. Rib members 19, 21, 23, and 25 are preferably hingedly coupled to pole portion 15 at an upper portion of pole portion 15. An integral lighting system 26 is carried by at least one of rib members 19, 21, 23, or 25. Lighting system 26 provides high intensity light to umbrella apparatus 11 and the surrounding area. In the embodiment of Figure 1, lighting system 26 preferably utilizes a cold cathode tube which will be described in greater detail herein.

Umbrella apparatus 11 may include a base member adapted to receive pole portion 15 and to support umbrella apparatus 11 in a generally upright position. Although not shown in the embodiment Figure 1, other embodiments of the present invention depict a variety of conventional and novel base members, any of which may be utilized with the embodiment of Figure 1. It should be understood that in all of the embodiments of the present invention discussed herein, umbrella apparatus 11 may be used with little or no base member whatsoever, provided there is a table or some other support structure, including the ground, which may be adapted to receive pole portion 15. For example, many patio tables are designed with central apertures to receive, support, and stabilize relatively large umbrellas. In some cases, the patio tables eliminate the need for a base member all together.

In accordance with the preferred embodiment of the present invention, light system 26 includes a plurality of light strands 27, 29, 31, and 33 attached to rib members 19, 21, 23, and 25. Each light strand 27, 29, 31, and 33 includes electrical

1 wiring 39 which conductively connects a plurality of small cold cathode tube light bulbs
2 together for providing the high intensity light under canopy 17 and in the area
3 surrounding umbrella apparatus 11. A wiring ring 37 secures and locates electrical
4 wiring 39 of light strands 27, 29, 31, and 33, so that electrical wiring 39 may be passed
5 through the hollow interior of pole portion 15 to a power source, as will be described in
6 detail below.

7 Umbrella apparatus 11 includes an optional opening and closing system 40 that
8 aids in expanding umbrella portion 13 into the open condition and retracting umbrella
9 portion 13 into the closed condition. Opening and closing system 40 includes a cable
10 system 41, a gear and pulley system 43 housed in a crank case 44, and a manual crank
11 45. Crank case 44 is preferably located on pole portion 15 such that crank case 44 is
12 accessible when umbrella portion 13 is in the fully retracted position against pole portion
13 15. Cable system 41 is coupled between rib members 19, 21, 23, and 25 and gear and
14 pulley system 43, and is preferably disposed within the hollow interior of pole portion 15.
15 Manual crank 45 is coupled to gear and pulley system 43 so as to allow manual
16 opening and closing of umbrella portion 13.

17 Opening and closing system 40 may be automated by the inclusion of an electric
18 screw driver motor 49, or other similar relatively small diameter motor assembly, and
19 one or more operational switches 47. Motor 49 is preferably disposed within the hollow
20 interior of pole portion 15 and is coupled to gear and pulley system 43. Operational
21 switches 47 are preferably carried by crank case 44, and include one or more switches
22 for controlling the operation of motor 49. With the inclusion of motor 49, a user may
23 expand and retract umbrella portion 13 simply by pressing the appropriate operational
24 switch 47. This feature is particularly advantageous when used with large umbrellas
25 which may be relatively heavy and awkward to operate, or when the user lacks
26 sufficient strength to expand or retract umbrella portion 13.

27 Umbrella apparatus 11 includes a power system 50 having a power source 55.
28 In this embodiment, power source 55 is preferably disposed in the hollow interior of pole
29 portion 15 at a lower extremity and comprises one or more rechargeable batteries 55a.



1 A releasable end cap 57 having integral ground connectors is provided at the lowermost
2 portion of pole portion 15 to complete the electrical circuit of power system 50 and to
3 allow access to rechargeable batteries 55a, as rechargeable batteries 55a may have to
4 be periodically replaced. Power system 50 provides electrical power to lighting system
5 26 and opening and closing system 40. An external power system charger 51 is
6 electrically coupled to power system 50 to aid in repeatedly charging rechargeable
7 batteries 55a. As is shown in Figure 1, an external adapter 60 may be provided.
8 External adapter 60 includes a relatively small plug 59 that is adapted to be conductively
9 received by external power system charger 51, an extension cord 61, an electrical
10 transformer 63, and terminals 65 that allow transformer 63 to be plugged into a
11 conventional AC wall outlet. This allows power system charger 51 to receive power
12 directly from a conventional AC wall outlet in order to recharge rechargeable batteries
13 55a.

14 In accordance with a preferred embodiment of the present invention, an
15 alternative power system charger 62 may be provided. Alternate power system charger
16 62 includes at least one solar cell 35 carried by an upper cap portion 64. Solar cells 35
17 are conductively coupled to power system charger 51 via wires (not shown) that pass
18 through the hollow interior of pole portion 15, thereby allowing solar cells 35 to provide
19 an electrical charge to recharge rechargeable batteries 55a, provided sunlight falls upon
20 solar cells 35. Because solar cells 35 provide continuous recharging throughout the
21 daylight hours, the amount and frequency of charging power system 50 with external
22 power system charger 60 may be minimized. It is important to note that locating
23 alternate power system charger 62 atop umbrella portion 13 is unique and
24 advantageous, particularly when alternate power system charger 62 includes solar cells
25 35 or other types of solar energy collectors. Such location limits the visibility of alternate
26 power system charger 62 and ensures that solar energy collection is maximized.

27 The embodiment depicted in Figure 1 is advantageous over the prior art in that it
28 provides a number of useful functions. Umbrella apparatus 11 is lighted by lighting
29 system 26 which does not require continuous access to a conventional AC wall outlet,
30 while providing high intensity light. This allows umbrella apparatus 11 to be placed in a

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1 relatively remote lawn or garden locations that are away from, or substantially removed
2 from, conventional AC power outlets. During daylight hours, solar cells 35 provide a
3 continuous trickle charge to recharge rechargeable batteries 55a, thereby reducing the
4 need for and frequency of use of external power system charger 60. However, when an
5 electrical charge is needed, external power system charger 60 may be utilized to
6 directly charge power system charger 51. Of course, a conventional extension cord
7 may be used, thereby eliminating the need to move umbrella apparatus 11 from its
8 remote location to a location near an AC power outlet.

9 Referring now to Figures 2A-2C in the drawings, another embodiment of the
10 present invention is illustrated. In this embodiment, an umbrella apparatus 111 includes
11 an umbrella portion 113, a pole portion 115, a stand portion 118, and a base portion 120
12 adapted to house a rechargeable power system 151. Umbrella apparatus 11 includes a
13 lighting system 126 and may include a motorized opening and closing system 140.
14 Umbrella portion 113 is preferably retractable and may be moved between a raised, or
15 expanded open position, which is shown; and a lowered, or retracted, closed position in
16 which umbrella portion is collapsed down about pole portion 115, as is conventional. A
17 flexible canopy 117 is attached to and covers umbrella portion 115. Canopy 117 is
18 supported by a plurality of rib members 119, 121, 123, and 125. Rib members 119,
19 121, 123, and 125 are preferably hingedly coupled to pole portion 115 at an upper
20 portion of pole portion 115. An integral lighting system 126 is carried by at least one of
21 rib members 119, 121, 123, or 125. Lighting system 126 provides high intensity light to
22 umbrella apparatus 111 and the surrounding area. In the embodiment of Figures 2A-
23 2C, lighting system 126 preferably utilizes a cold cathode tube which will be described in
24 greater detail herein.

25 Lighting system 126 includes a plurality of light strands 127, 129, 131, and 133
26 attached to rib members 119, 121, 123, and 125. Each light strand 127, 129, 131, and
27 133 includes electrical wiring 139 which conductively couples a plurality of small cold
28 cathode tube light bulbs together for providing the high intensity light under canopy 117
29 and in the area surrounding umbrella apparatus 111. A wiring ring 137 secures and
30 locates electrical wiring 139 of light strands 127, 129, 131, and 133, so that electrical

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1 wiring 139 may be passed through the hollow interior of pole portion 115 to a power
2 source, as will be described in detail below.

3 Umbrella apparatus 111 includes an optional opening and closing system 140
4 that aids in expanding umbrella portion 113 into the open condition and retracting
5 umbrella portion 113 into the closed condition. Opening and closing system 140
6 includes a cable system 141, a gear and pulley system 143 housed in a crank case 144,
7 and a manual crank 145. Crank case 144 is preferably located on pole portion 115
8 such that crank case 144 is accessible when umbrella portion 113 is in the fully
9 retracted position against pole portion 115. Cable system 141 is coupled between rib
10 members 119, 121, 123, and 125 and gear and pulley system 143, and is preferably
11 disposed within the hollow interior of pole portion 115. Manual crank 145 is coupled to
12 gear and pulley system 143 so as to allow manual opening and closing of umbrella
13 portion 113.

14 Opening and closing system 140 may be automated by the inclusion of an
15 electric screw driver motor 149, or other similar relatively small diameter motor
16 assembly, and one or more operational switches 147. Motor 149 is preferably disposed
17 within the hollow interior of pole portion 115 and is coupled to gear and pulley system
18 143. Operational switches 147 are preferably carried by crank case 144, and include
19 one or more switches for controlling the operation of motor 149. With the inclusion of
20 motor 149, a user may expand and retract umbrella portion 113 simply by pressing the
21 appropriate operational switch 147. This feature is particularly advantageous when
22 used with large umbrellas which may be relatively heavy and awkward to operate, or
23 when the user lacks sufficient strength to expand or retract umbrella portion 113.

24 Umbrella apparatus 111 includes a power system 150 having a power source
25 155. In this embodiment, power source 155 is preferably adapted to be conductively
26 coupled to base portion 120 and comprises a rechargeable battery pack 155a,
27 preferably an 18-Volt rechargeable battery pack. Battery pack 155a is preferably the
28 type of rechargeable battery that is utilized with most modern cordless power tools,
29 such as drills, saws, and sanders. Battery pack 155a is adapted to be repeatedly

1 recharged by plugging battery pack 155a into a conventional charger (not shown) that is
2 plugged into a conventional AC power outlet. Power system 150 provides electrical
3 power to lighting system 126 and opening and closing system 140.

4 In accordance with a preferred embodiment of the present invention, an
5 alternative power system charger 162 may be provided. Alternate power system
6 charger 162 includes at least one solar cell 135 carried by an upper cap portion 164.
7 Solar cells 135 are conductively coupled to power system 150 via wires (not shown) that
8 pass through the hollow interior of pole portion 115, thereby allowing solar cells 135 to
9 provide an electrical charge to recharge rechargeable battery pack 155a, provided
10 sunlight falls upon solar cells 135. Because solar cells 135 provide continuous
11 recharging throughout the daylight hours, the frequency with which battery pack 155a
12 must be replaced or recharged may be minimized. It is important to note that locating
13 alternate power system charger 162 atop umbrella portion 113 is unique and
14 advantageous, particularly when alternate power system charger 162 includes solar
15 cells 135 or other types of solar energy collectors. Such location limits the visibility of
16 alternate power system charger 162 and ensures that solar energy collection is
17 maximized.

18 Stand portion 118 includes an upright shaft portion 170 having a central aperture
19 172 that is adapted to receive the pole portion 115 of umbrella apparatus 111. A
20 plurality of screw clamps 174 and 176 are provided to secure pole portion 115 within
21 shaft portion 170. A bottom portion 146 is provided to stabilize umbrella apparatus 111
22 while umbrella apparatus 111 is installed within stand portion 118.

23 Base portion 120 includes a removable cylindrical sleeve 156, a removable cover
24 160, and a receiver 168. Sleeve 156 is configured to slip over the exterior of shaft
25 portion 170, and includes a longitudinal slot 158 that allows access to screw clamps 174
26 and 176 when sleeve 156 is placed over shaft portion 170. Slot 158 also allows access
27 to a connector 166 disposed in the lower portion of pole portion 115 when sleeve 156 is
28 placed over shaft portion 170. Connector 166 is conductively coupled to the wires from
29 alternate power system charger 162 and solar cells 135. Cover 160 is preferably

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1 concave in shape, thereby defining an interior space which may be used to house the
 2 electronics (not shown) of power system 150. Cover 160 may include one or more
 3 seams 162 that allow access to the interior space defined by cover 160. Receiver 168
 4 releasably receives battery pack 155a. A wire 152 and plug 154 conductively couple
 5 battery pack 155a to connector 166, thereby providing an electrical circuit between
 6 rechargeable battery pack 155a and light strands 119, 121, 123, and 125 of lighting
 7 system 126.

8 The embodiment depicted in Figures 2A-2C is advantageous over the prior art in
 9 that it provides a number of useful functions. Umbrella apparatus 111 is lighted by
 10 lighting system 126 which does not require continuous access to a conventional AC wall
 11 outlet, while providing high intensity light. This allows umbrella apparatus 111 to be
 12 placed in a relatively remote lawn or garden locations that are away from, or
 13 substantially removed from, conventional AC power outlets. During daylight hours,
 14 solar cells 135 provide a continuous trickle charge to recharge rechargeable battery
 15 pack 155a, thereby reducing the frequency with which battery pack 155a must be
 16 replaced or recharged. Additionally, this embodiment is advantageous over the prior art
 17 in that conventional rechargeable battery packs, which are commonly used with
 18 cordless power tools, may be utilized. If battery pack 155a is insufficiently charged
 19 illuminate light strands 119, 121, 123, and 125 of light system 126, the user may simply
 20 replace battery pack 155a with another fully charged battery pack 155a. In this manner,
 21 lighting system 126 of umbrella apparatus 111 may be energized conveniently, even
 22 though umbrella apparatus 111 may be located extremely remotely from an AC power
 23 outlet, such as in a garden patio, or on a boat dock. In this embodiment, there is no
 24 need to use extension cords to charge an alternate power system charger.

25 Referring now to Figures 3A-3C in the drawings, another embodiment of the
 26 present invention is illustrated. In this embodiment, an umbrella apparatus 211 includes
 27 an umbrella portion 213, a pole portion 215, a stand portion 218, and a base portion 220
 28 adapted to house a rechargeable power system 251. Umbrella apparatus 211 includes
 29 a lighting system 226 and may include a motorized opening and closing system 240.
 30 Umbrella portion 213 is preferably retractable and may be moved between a raised, or

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1 expanded open position, which is shown; and a lowered, or retracted, closed position in
2 which umbrella portion is collapsed down about pole portion 215, as is conventional. A
3 flexible canopy 217 is attached to and covers umbrella portion 215. Canopy 217 is
4 supported by a plurality of rib members 219, 221, 223, and 225. Rib members 219,
5 221, 223, and 225 are preferably hingedly coupled to pole portion 215 at an upper
6 portion of pole portion 215. An integral lighting system 226 is carried by at least one of
7 rib members 219, 221, 223, or 225. Lighting system 226 provides high intensity light to
8 umbrella apparatus 211 and the surrounding area. In the embodiment of Figures 3A-
9 3C, lighting system 226 preferably utilizes a cold cathode tube which will be described in
10 greater detail herein.

11 Lighting system 226 includes a plurality of light strands 227, 229, 231, and 233
12 attached to rib members 219, 221, 223, and 225. Each light strand 227, 229, 231, and
13 233 includes electrical wiring 239 which conductively couples a plurality of small cold
14 cathode tube light bulbs together for providing the high intensity light under canopy 217
15 and in the area surrounding umbrella apparatus 211. A wiring ring 237 secures and
16 locates electrical wiring 239 of light strands 227, 229, 231, and 233, so that electrical
17 wiring 239 may be passed through the hollow interior of pole portion 215 to a power
18 source, as will be described in detail below.

19 Umbrella apparatus 211 includes an optional opening and closing system 240
20 that aids in expanding umbrella portion 213 into the open condition and retracting
21 umbrella portion 213 into the closed condition. Opening and closing system 240
22 includes a cable system 241, a gear and pulley system 243 housed in a crank case 244,
23 and a manual crank 245. Crank case 244 is preferably located on pole portion 215
24 such that crank case 244 is accessible when umbrella portion 213 is in the fully
25 retracted position against pole portion 215. Cable system 241 is coupled between rib
26 members 219, 221, 223, and 225 and gear and pulley system 243, and is preferably
27 disposed within the hollow interior of pole portion 215. Manual crank 245 is coupled to
28 gear and pulley system 243 so as to allow manual opening and closing of umbrella
29 portion 213.

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1 Opening and closing system 240 may be automated by the inclusion of an
2 electric screw driver motor 249, or other similar relatively small diameter motor
3 assembly, and one or more operational switches 247. Motor 249 is preferably disposed
4 within the hollow interior of pole portion 215 and is coupled to gear and pulley system
5 243. Operational switches 247 are preferably carried by crank case 244, and include
6 one or more switches for controlling the operation of motor 249. With the inclusion of
7 motor 249, a user may expand and retract umbrella portion 213 simply by pressing the
8 appropriate operational switch 247. This feature is particularly advantageous when
9 used with large umbrellas which may be relatively heavy and awkward to operate, or
10 when the user lacks sufficient strength to expand or retract umbrella portion 213.

11 Umbrella apparatus 211 includes a power system 250 having a rechargeable
12 power source 255. In this embodiment, power source 255 is preferably adapted to be
13 conductively coupled to and housed within base portion 220 and comprises a bundle of
14 rechargeable batteries 255a. Power system 250 provides electrical power to lighting
15 system 226 and opening and closing system 240. An external power system charger
16 and transformer 251 is electrically coupled to power system 250 to aid in repeatedly
17 charging rechargeable batteries 255a. An extension cord 261 having terminals 265
18 allow external power system charger and transformer 251 to be plugged into a
19 conventional AC wall outlet. This allows external power system charger and
20 transformer 251 to receive power directly from a conventional AC wall outlet in order to
21 recharge rechargeable batteries 255a.

22 In accordance with a preferred embodiment of the present invention, an
23 alternative power system charger 262 may be provided. Alternate power system
24 charger 262 includes at least one solar cell 235 carried by an upper cap portion 264.
25 Solar cells 235 are conductively coupled to power system 250 via wires (not shown) that
26 pass through the hollow interior of pole portion 215, thereby allowing solar cells 235 to
27 provide an electrical charge to recharge rechargeable batteries 255a, provided sunlight
28 falls upon solar cells 235. Because solar cells 235 provide continuous recharging
29 throughout the daylight hours, the frequency with which batteries 255a must be
30 replaced or recharged may be minimized. It is important to note that locating alternate

1 power system charger 262 atop umbrella portion 213 is unique and advantageous,
2 particularly when alternate power system charger 262 includes solar cells 235 or other
3 types of solar energy collectors. Such location limits the visibility of alternate power
4 system charger 262 and ensures that solar energy collection is maximized.

5 Stand portion 218 includes an upright shaft portion 270 having a central aperture
6 272 that is adapted to receive pole portion 215 of umbrella apparatus 211. A plurality of
7 screw clamps 274 and 276 are provided to secure pole portion 215 within shaft portion
8 270. A bottom portion 246 is provided to stabilize umbrella apparatus 211 while
9 umbrella apparatus 211 is installed within stand portion 218.

10 Base portion 220 includes a removable cylindrical sleeve 256, a removable cover
11 260, and recessed portions 280 and 282. Sleeve 256 is configured to slip over the
12 exterior of shaft portion 270, and includes a longitudinal slot 258 that allows access to
13 screw clamps 274 and 276 when sleeve 256 is placed over shaft portion 270. Slot 258
14 also allows access to a connector 266 disposed in the lower portion of pole portion 215
15 when sleeve 256 is placed over shaft portion 270. Connector 266 is conductively
16 coupled to the wires from alternate power system charger 262 and solar cells 235.
17 Cover 260 is preferably concave in shape, thereby defining an interior space which may
18 be used to house the electronics (not shown) of power system 250. Cover 260 may
19 include one or more seams 262 that allow access to the interior space defined by cover
20 260. Recessed portion 280 releasably receives batteries 255a, and recessed portion
21 282 releasably receives external power system charger 251. A wire 252 and plug 254
22 conductively couple batteries 255a to connector 266, thereby providing an electrical
23 circuit between rechargeable batteries 255a and light strands 219, 221, 223, and 225 of
24 lighting system 226.

25 The embodiment depicted in Figures 3A-3C is advantageous over the prior art in
26 that it provides a number of useful functions. Umbrella apparatus 211 is lighted by
27 lighting system 226 which does not require continuous access to a conventional AC wall
28 outlet, while providing high intensity light. This allows umbrella apparatus 211 to be
29 placed in a relatively remote lawn or garden locations that are away from, or

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1 substantially removed from, conventional AC power outlets. During daylight hours,
2 solar cells 235 provide a continuous trickle charge to recharge rechargeable batteries
3 255a, thereby reducing the frequency with which batteries 255a must be replaced or
4 recharged. However, when an electrical charge is needed, external power system
5 charger 251 may be utilized to directly charge batteries 255a. Of course, a conventional
6 extension cord may be used, thereby eliminating the need to move umbrella apparatus
7 211 from its remote location to a location near an AC power outlet.

8 Referring now to Figure 4A in the drawings, the preferred embodiment of lighting
9 systems 26, 126, and 226 of the present invention is illustrated. In this embodiment, a
10 plurality of lighting elements 307, preferably cold cathode tube bulbs, are recessed into
11 a rib member 301. Rib member 301 is indicative of rib members 19, 21, 23, 25, 119,
12 121, 123, 125, 219, 221, 223, and 225. As is shown, a cavity 303 is formed within rib
13 301. Cavity 303 is adapted to receive and hold light bulb 307. A translucent material
14 305 extends along the entire length of the cavity 303 to protect bulbs 307 from damage
15 and undesirable exposure to weather and other conditions. Translucent material 305
16 may have a smooth surface or be textured to accentuate or enhance the light from
17 bulbs 307. Although only a single cold cathode tube bulb 307 is illustrated, it should be
18 understood that there may be many bulbs 307 spaced along the length of rib member
19 301 to illuminate the area under umbrella apparatus 11, 111, or 211. Rib member 301
20 includes a wiring channel 309 configured to receive a wire 311 that conductively
21 connects all of the bulbs 307 installed in rib member 301, thereby forming an electrical
22 circuit between bulbs 307 and the rechargeable power source, such as power sources
23 50, 150, and 250. In this manner, recessed lighting, which is carried entirely within rib
24 member 301 and is not otherwise exposed to the elements, is achieved.

25 Referring now to Figure 4B in the drawings, an alternate embodiment of lighting
26 systems 26, 126, and 226 of the present invention is illustrated. This embodiment is
27 similar to the embodiment of Figure 4A, with the exception that an integral cooling
28 system 410 has been added. In this embodiment, a plurality of lighting elements 307,
29 preferably cold cathode tube bulbs, are recessed into a rib member 301. Rib member
30 301 is indicative of rib members 19, 21, 23, 25, 119, 121, 123, 125, 219, 221, 223, and

1 225. Cooling system 410 comprises a misting means that provides a light mist to cool
2 the area under umbrella apparatus 11, 111, or 211. A cavity 403 is formed within rib
3 member 401. Cavity 403 is adapted to receive and hold light bulb 407. A translucent
4 material 405 extends along the entire length of the cavity 403 to protect bulbs 407 from
5 damage and undesirable exposure to weather and other conditions. Translucent
6 material 405 may have a smooth surface or be textured to accentuate or enhance the
7 light from bulbs 407. Although only a single cold cathode tube bulb 407 is illustrated, it
8 should be understood that there may be many bulbs 407 spaced along the length of rib
9 member 401 to illuminate the area under umbrella apparatus 11, 111, or 211. Rib
10 member 401 includes a wiring channel 409 configured to receive a wire 411 that
11 conductively connects all of the bulbs 407 installed in rib member 401, thereby forming
12 an electrical circuit between bulbs 407 and the rechargeable power source, such as
13 power sources 50, 150, and 250. In this manner, recessed lighting, which is carried
14 entirely within rib member 401 and is not otherwise exposed to the elements, is
15 achieved.

16 A fluid supply channel 421 is provided in order to receive a fluid tight hose which
17 supplies water to a plurality of misting nozzles 425 which generate mist 427 and 480. A
18 fluid discharge channel 423 is provided to carry a fluid tight hose which carries water
19 from the hose in fluid supply channel 421 to misting nozzles 425. In this embodiment,
20 umbrella apparatus should include a small reservoir (not shown) of water or other water
21 source, such as an inlet hose, and an electric pump to pressurize and pump the water
22 through cooling system 410. In this manner, umbrella apparatus 11, 111, or 211
23 provides both light and a cooling mist to those in close proximity.

24 Referring now to Figure 4C in the drawings, another embodiment of lighting
25 systems 26, 126, and 226 of the present invention is illustrated. This embodiment is
26 similar to the embodiment of Figure 4A, with the exception that a different integral
27 cooling system 510 has been added. In this embodiment, a plurality of lighting
28 elements 507, preferably cold cathode tube bulbs, are recessed into a rib member 501.
29 Rib member 501 is indicative of rib members 19, 21, 23, 25, 119, 121, 123, 125, 219,
30 221, 223, and 225. Cooling system 510 comprises a fanning means that provides a

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1 cool breeze under umbrella apparatus 11, 111, or 211. A cavity 503 is formed within rib
2 member 501. Cavity 503 is adapted to receive and hold light bulb 507. A translucent
3 material 505 extends along the entire length of the cavity 503 to protect bulbs 507 from
4 damage and undesirable exposure to weather and other conditions. Translucent
5 material 505 may have a smooth surface or be textured to accentuate or enhance the
6 light from bulbs 507. Although only a single cold cathode tube bulb 507 is illustrated, it
7 should be understood that there may be many bulbs 507 spaced along the length of rib
8 member 501 to illuminate the area under umbrella apparatus 11, 111, or 211. Rib
9 member 501 includes a wiring channel 509 configured to receive a wire 511 that
10 conductively connects all of the bulbs 507 installed in rib member 501, thereby forming
11 an electrical circuit between bulbs 507 and the rechargeable power source, such as
12 power sources 50, 150, and 250. In this manner, recessed lighting, which is carried
13 entirely within rib member 501 and is not otherwise exposed to the elements, is
14 achieved.

15 A wiring conduit 520 is provided which routes electrical wiring from wire 511 to an
16 electric motor 524 carried in a recessed cavity 522. Fanning means 528 and 580, such
17 as fan blades, are carried by rotating shafts 530 which are connected to motors 524.
18 When energized, motors 524 rotate fan blades 528 and 580, thereby providing a cooling
19 breeze under umbrella apparatus 11, 111, and 211. A plurality of fan blade sets 528
20 and 580 may be located at predetermined locations along the length of rib member 501.

21 Referring now to Figure 5A in the drawings, a block diagram representation of
22 the preferred embodiment of opening and closing systems 40, 140, and 240 is
23 illustrated. As is shown, a pulley system 600 is coupled through gears 602 to an electric
24 motor 604. A switch 606 is electrically connected between a power supply 608 and
25 electric motor 604. Power supply 608 is indicative of rechargeable power systems 50,
26 150, and 250. External power system charger 610 and solar charger 612 are coupled
27 to power supply 608 to recharge the rechargeable battery elements. External power
28 system charger 610 is indicative of external power system chargers 51 and 251. Solar
29 charger 612 is indicative of alternate power system chargers 62, 162, and 262.
30 Mechanical actuation of switch 606 allows current to flow from power supply 608 to

1 electric motor 604. Motor 604 works through gears 602 to operate pulley 600, thereby
2 opening and closing canopy 17, 117, or 217 of umbrella apparatus 11, 111, or 211,
3 respectively.

4 Referring now to Figure 5B in the drawings, another embodiment of the opening
5 and closing systems 40, 140, and 240 of the present invention is illustrated. In this
6 embodiment, a wireless transmitter 708 is utilized to transmit encoded signals and
7 remotely communicate with a wireless receiver 706 that is carried by umbrella
8 apparatus 11, 111, or 211, preferably near housings 44, 144, and 244. A decoder 704
9 is provided to decode the encoded signals. As is conventional with such receivers and
10 transmitters, transmitter 708 and receiver 706 may be adapted to be coded on a
11 particular frequency or coding scheme which enable a dedicated transmitter 708 to
12 actuate a particular receiver 706. A decoder 704 coupled to an electrical switch 702
13 serves to allow for such identification. Switch 702 controls the application of electrical
14 energy from a power supply 710 to an electric motor 700. Power supply 710 is indicative
15 of rechargeable power systems 50, 150, and 250. Motor 700 is indicative of motors 49,
16 149, and 249. In this manner, a motorized retraction system may be actuated remotely
17 utilizing wireless transmitter 708.

18 Referring now to Figures 6-9 in the drawings, the preferred embodiments of the
19 umbrella apparatus of the present invention are illustrated. In these embodiments, the
20 rechargeable power source and solar recharging system are mounted atop the pole
21 portion of the umbrella apparatus above the canopy. One concept which runs
22 throughout the embodiments depicted in Figures 6-9 is the utilization of a "power unit."
23 This concept involves the placement of a unitary structure at a defined location relative
24 to the umbrella. For example, in the embodiments of Figures 6-9, the power unit is
25 shown at a top location directly above the umbrella apparatus, and secured to the pole
26 portion with a threaded coupling. Figure 6 depicts a top-mounted power unit and a cold
27 cathode tube lighting system. Figure 7 depicts a top-mounted power unit with a fanning
28 means cooling system. Figure 8 depicts a top-mounted power unit with mist producing
29 cooling system. Figure 9 depicts a top-mounted power unit with an automated opening
30 and closing system.

1 Although Figures 6-9 depict power units with a single electrical system, it should
2 be understood that in alternative embodiments, one could mix and match these
3 electrical subassemblies such that a single power unit provides electrical power to two
4 or more subassemblies. For example, an umbrella apparatus may include a lighting
5 system and either one or both of the cooling systems described above. Alternatively, an
6 umbrella apparatus may include a lighting system, a cooling system, and an automated
7 opening and closing system as described herein. In this manner, the umbrella
8 apparatus of the present invention is modular such that the different subsystems can be
9 easily mixed and matched.

10 This modularity allows one to manufacture and sell aftermarket kits which can be
11 installed and interchanged by the umbrella owners. Such kits may include a power unit
12 and one or more of the subsystems, such as a lighting system and/or a cooling system
13 and/or an automated opening and closing system. Because the power unit is relatively
14 self-contained, little interaction is required to attach the power unit to an umbrella
15 apparatus. Alternatively, this modularity in design facilitates the mass manufacture of
16 umbrellas, allowing the electrical system to be manufactured by one factory, and the
17 umbrella systems, which do not include electrical systems, to be manufactured by a
18 different factory. The parts can then be brought together in an assembly area and
19 assembled together.

20 Referring now specifically to Figure 6, an umbrella apparatus 701 is illustrated.
21 As is shown, a power unit 725 is provided for connection to the uppermost portion of
22 umbrella apparatus 701. In this embodiment, a cold cathode tube light subassembly
23 721 is provided for connection at a different location to umbrella apparatus 701. Power
24 unit 725 includes a solar collector 727 at its uppermost portion. Solar collector 727 is
25 preferably carried by a top portion 703 of power unit 725. A bottom portion 705 of
26 power unit 725 defines an interior battery compartment 707. Additionally, power unit
27 725 carries a coupling mechanism 729 to allow coupling between power unit 725 and a
28 pole portion 719 of umbrella apparatus 701, pole portion 719 being adapted at an upper
29 end 711, preferably with threads 713, to releasably receive power unit 725. A top cap
30 715 hingedly connects pole portion 719 to a canopy 717. Cold cathode tube light

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1 subassembly 721 is coupled at a desired location underneath canopy 717 to provide
2 high intensity light in the area surrounding umbrella apparatus 701. Cold cathode tube
3 light subassembly 721 is conductively coupled to power unit 725 by wiring 709 that
4 passes through the hollow interior of pole portion 719. Such light allows users to read,
5 play games, or perform other leisure activities that require a relatively high intensity
6 light. The electrical components of umbrella apparatus 701 are entirely independent of
7 any household electrical system. The power source, such as power sources 50, 150,
8 and 250, carried by power unit 725 is utilized to energize cold cathode tube light
9 subassembly 721. During daylight hours, solar energy is collected by solar panel 727
10 and is converted and utilized to recharge the rechargeable power source which is
11 maintained within battery compartment 707.

12 Cold cathode tube light subassembly 721 is described below in more detail
13 below. As will be appreciated by those skilled in the art, other low power lighting
14 systems may be used instead of cold cathode tube light sub assembly 721. For
15 example, an LED or fluorescent lighting subassembly may be utilized instead. LED and
16 fluorescent systems designed for use with solar and low voltage lighting are known in
17 the art. Such alternative lighting sources may be easily used with the present system in
18 manners which are recognized by those skilled in the art. Implementation of LED,
19 fluorescent, or other alternate light sources instead of cold cathode tube light
20 subassembly 721 is a straightforward and need not be further described in detail.

21 Referring now specifically to Figure 7 in the drawings, an umbrella apparatus 801
22 is illustrated. As is shown, a power unit 825 is provided for connection to the uppermost
23 portion of umbrella apparatus 801. In this embodiment, a cooling system 821
24 comprising a fanning means 831 is provided for connection at a different location to
25 umbrella apparatus 801. Power unit 825 includes a solar collector 827 at its uppermost
26 portion. Solar collector 827 is preferably carried by a top portion 803 of power unit 825.
27 A bottom portion 805 of power unit 825 defines an interior battery compartment 807.
28 Additionally, power unit 825 carries a coupling mechanism 829 to allow coupling
29 between power unit 825 and a pole portion 819 of umbrella apparatus 801, pole portion
30 819 being adapted at an upper end 811, preferably with threads 813, to releasably

1 receive power unit 825. A top cap 815 hingedly connects pole portion 819 to a canopy
2 817. Cooling system 821 is coupled at a desired location underneath canopy 817 to
3 provide a cooling breeze in the area surrounding umbrella apparatus 801. Cooling
4 system 821 is conductively coupled to power unit 825 by wiring 809 that passes through
5 the hollow interior of pole portion 819. The electrical components of umbrella apparatus
6 801 are entirely independent of any household electrical system. The power source,
7 such as power sources 50, 150, and 250, carried by power unit 825 is utilized to
8 energize cooling system 821. During daylight hours, solar energy is collected by solar
9 panel 827 and is converted and utilized to recharge the rechargeable power source
10 which is maintained within battery compartment 807.

1 Referring now specifically to Figure 8 in the drawings, an umbrella apparatus 901
2 is illustrated. As is shown, a power unit 955 is provided for connection to the uppermost
3 portion of umbrella apparatus 901. In this embodiment, a cooling system 921
4 comprising a misting system 931 is provided for connection at a different location to
5 umbrella apparatus 901. Power unit 955 includes a solar collector 957 at its uppermost
6 portion. Solar collector 957 is preferably carried by a top portion 903 of power unit 955.
7 A bottom portion 905 of power unit 955 defines an interior battery compartment 907.
8 Additionally, power unit 955 carries a coupling mechanism 959 to allow coupling
9 between power unit 955 and a pole portion 919 of umbrella apparatus 901, pole portion
10 919 being adapted at an upper end 911, preferably with threads 913, to releasably
11 receive power unit 955. A top cap 915 hingedly connects pole portion 919 to a canopy
12 917. The electrical components of umbrella apparatus 901 are entirely independent of
13 any household electrical system. The power source, such as power sources 50, 150,
14 and 250, carried by power unit 955 is utilized to energize cooling system 921. During
15 daylight hours, solar energy is collected by solar panel 957 and is converted and utilized
16 to recharge the rechargeable power source which is maintained within battery
17 compartment 907.

18 Cooling system 921 is coupled at a desired location underneath canopy 917 to
19 provide a cooling mist in the area surrounding umbrella apparatus 901. Cooling system
20 921 is conductively coupled to power unit 955 by wiring 909 that passes through the

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1 hollow interior of pole portion 919. Cooling system 921 is a misting system comprising
2 a reservoir 925, or other water source, a pump 927, water feed lines 929, and mist
3 nozzles 923. Pump 927 pressurizes and pumps the water from reservoir 925 through
4 water feed lines 929 and out of mist nozzles 923, which are located at selected spaced
5 intervals under canopy 917, at a selected flow rate. Reservoir 925 may be a
6 conventional ice cooler, such that the mist is chilled water.

7 Referring now specifically to Figure 9 in the drawings, an umbrella apparatus
8 1001 is illustrated. As is shown, a power unit 1055 is utilized to provide electrical power
9 to an automated opening and closing system 1050. Power unit 1055 includes a solar
10 collector 1027 at its uppermost portion. Solar collector 1027 is preferably carried by a
11 top portion 1003 of power unit 1055. A bottom portion 1005 of power unit 1055 defines
12 an interior battery compartment 1007. Additionally, power unit 1055 carries a coupling
13 mechanism 1029 to allow coupling between power unit 1055 and a pole portion 1019 of
14 umbrella apparatus 1001, pole portion 1019 being adapted at an upper end 1011,
15 preferably with threads 1013, to releasably receive power unit 1055. A top cap 1015
16 hingedly connects pole portion 1019 to a canopy 1017. The electrical components of
17 umbrella apparatus 1001 are entirely independent of any household electrical system.
18 Automated opening and closing system 1050 is conductively coupled to power unit 1055
19 by wiring 1009 that passes through the hollow interior of pole portion 1019. The power
20 source, such as power sources 50, 150, and 250, carried by power unit 1055 is utilized
21 to energize automated opening and closing system 1050. During daylight hours, solar
22 energy is collected by solar panel 1027 and is converted and utilized to recharge the
23 rechargeable power source which is maintained within battery compartment 1007.

24 Automated opening and closing system 1050 is carried at the uppermost portion
25 of pole portion 1019. Opening and closing system 1050 includes a motor 1021, a
26 transmission 1023, a line winding shaft 1025, a pulley system 1031, and a cable system
27 1033. These components cooperate to open and close the umbrella in response to the
28 receipt of a command signal. The command signal may be supplied by the actuation of
29 a switch (see Figures 1-3) carried on pole portion 1019, or it may be a wireless signal
30 received from a paired transmitter receiver system (see Figure 5B).

1 Referring now to Figure 10 in the drawings, a schematic of the cold cathode tube
2 lighting system of the present invention is illustrated. The invention is to utilize in
3 combination a cold cathode lamp, a power inverter which supplies alternating current to the
4 cold cathode lamp, a rechargeable DC battery pack, and a solar collector. This is depicted
5 in simplified form in Figure 10. This may be utilized in any outdoor application in which
6 there is no easy or convenient access to household power. The system is entirely self-
7 contained and does not require any household power for operation, or charging. As is
8 shown, the cold cathode tube lighting system 3000 includes a cold cathode lamp 3001 that
9 is supplied with AC power from a power inverter 3007. A DC battery pack 3003 includes
10 rechargeable batteries that supply DC current to power inverter 3007. A solar collector
11 3005 is provided to recharge the batteries contained within DC power pack 3003.

12 A cold cathode tube is a lamp that produces light by the passage of an electric
13 current through a vapor or gas maintained within a tube. A cold cathode tube does not
14 require any heating above ambient temperature to produce light. The tube is phosphor
15 coated on its inner surface, and thus may emit various colored light. In most cases, cold
16 cathode tube lamps are low-pressure mercury vapor lamps. Such lamps use a 253.7
17 nanometer ultraviolet emission from mercury vapor excited by an electrical discharge
18 through the lamp to charge the phosphors maintained on the wall of the lamp.

19 The optimum operating temperature for cold cathode tube is approximately 40
20 degrees Celsius, although Applicant believes that these lamps can be produced in a
21 manner to reliably provide outdoor lighting in temperatures as cold as 15 degrees
22 Fahrenheit. While the cold cathode tube does not require heating, the output of the lamp
23 does vary based upon the ambient temperature. At room temperature, the initial output of
24 a lamp is only about seventy percent of its steady state value at 40 degrees Celsius. In
25 contrast, its output is only 25 percent when the lamp is started at zero degrees Celsius.
26 Cold starts do require additional voltage from the power source to ensure reliable
27 operation. However, the number of lamp "starts" has no adverse effect on the lamp. This
28 is not true for fluorescent lamps, which degrade over time due to the number of "starts."
29 Cold cathode tubes may be utilized to supply a white light output.

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1 In the preferred embodiment, a cold cathode tube manufactured by Nanjing Lampus
2 Electronics Company, Ltd. is utilized. Specifically, a lamp type CFL-20 is utilized. This has
3 an inner diameter of 1.5 millimeters. The tube length is variable, and may be anywhere in
4 the range of 50 millimeters to 30 millimeters in overall length. The tube is adapted to
5 operate on four milliamps of tube current. The tube voltage is in the range of 200 to 750
6 Volts. The average brightness of this particular tube is 40,000 cd/m².

7 Another advantage of cold cathode tubes is that the tubes can be very thin in
8 diameter. For example, in the preferred implementation, the cold cathode tube may be one
9 or two millimeters in diameter. A cold cathode tube can be bent into any shape and can be
10 formed in very long lengths, such as several feet long. Thus, cold cathode tubes provide
11 greater light output per foot versus conventional lighting.

12 Another significant advantage of cold cathode tubes is that they have relatively long
13 lamp life. It is not unusual to have lamp lives which are thirty to forty thousand hours of
14 use. In other words, these cold cathode tubes have, for all practical purposes, an infinite
15 life span.

16 They are low power devices. They do not generate a lot of heat. They provide high
17 lumen output. For these reasons, fewer batteries are needed to drive the cold cathode ray
18 tube, and smaller solar cell panels may be utilized to recharge the batteries. In other
19 words, relatively small form factors can be achieved because the solar cells, the batteries,
20 and the bulbs can be relatively small in size.

21 The present invention can be implemented on a small, medium, or large scale so
22 the solar cell panels and batteries may be moved up in size to either provide greater light
23 output or to provide for a longer useful life.

24 Additionally, the present invention may be considered to satisfy three separate and
25 distinct outdoor lighting applications, all of which may be incorporated into the umbrella
26 apparatus of the present invention.

27 The first application is that of a "special purpose light," or "task light," such as for
28 security applications. These special purpose lights would provide very light output, for a

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1 relatively short duration. One example would be the utilization of the cold cathode ray tube
2 to provide extremely high light output for a very small area for a very short time, all in
3 response to detection of motion in a particular area. For example, a system can be
4 configured to detect motion in a doorway, motion in a yard, motion in a driveway, or the
5 like. The brightness can be provided which can be far in excess of 40,000 cd/m². For
6 example, 100,000 to 200,000 cd/ m² may be provided for a very small area for a very short
7 duration. For example, the duration may be a few minutes to ten minutes.

8 The second application requires a medium amount of light output, but requires
9 longer periods of operation or wider areas of coverage. For example, the light assembly
10 provided with the umbrella provides a relatively high light output, such as in the range of
11 20,000 to 100,000 cd/m², in order to allow one to read, play games, operate a computer, or
12 do needlework under the umbrella. Preferably, the battery pack and associated solar panel
13 is sufficient to allow the system to operate continuously for a time interval in the range of 8-
14 12 hours. Additionally, and preferably, the solar panel should be of the size and output
15 which is sufficient to fully recharge the battery pack during the daylight hours.

16 A third application requires a lower level of light intensity. A good example would be
17 lawn, patio, walkway, or landscape lighting. One does not ordinarily expect to be able to
18 read or do intricate work under this type of lighting. In contrast, all that is expected is that a
19 reasonable amount of light be provided to allow one to walk safely through an area. This
20 type of task may require brightness in the range of 6,000 cd/m² to 60,000 cd/m².

21 Referring now to Figure 11 in the drawings, a block diagram representation of the
22 application of the present invention to a lawn lighting scenario is illustrated. In this
23 scenario, a plurality of solar panels 4001, 4003, 4005, and 4007 are connected together in
24 series. Preferably, solar panels 4001, 4003, 4005, and 4007 are manufactured by
25 Siemens and comprise mono-crystal solar panels, each providing 1.5 Volts. The total
26 current for the array of solar panels is about 80 milliamps. The current from solar panels
27 4001, 4003, 4005, and 4007 is passed through a diode 4009 and then to a battery pack
28 4011. Battery pack 4011 includes a plurality of batteries 4013, 4015, and 4017, for
29 example three AA batteries. In alternative embodiments, as few as two batteries may be

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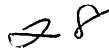
1 used. As is shown, each battery is a 1.2 Volt Nickel Cadmium battery. They collectively
2 provide 700 milliamp hours of power.

3 The output of DC battery pack 4011 is provided as an input to an inverter 4019.
4 Inverter 4019 receives 4.8 Volts DC in and produces as an output of 800 Volts rms AC at
5 40 Hertz. The total current of the output is 4-6 milliamps.

6 This is provided to the cathode of a cold cathode ray tube lamp 4021. The current
7 passes through the vapor maintained within cold cathode ray tube lamp 4021 and causes
8 electrons to be stripped from the gas. These electrons collide with the phosphorus coating
9 on the interior surface of cold cathode ray tube lamp 4021, thereby emitting light.

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Although the invention has been described with reference to a particular
embodiment, this description is not meant to be construed in a limiting sense. Various
modifications of the disclosed embodiments as well as alternative embodiments of the
invention will become apparent to persons skilled in the art upon reference to the
description of the invention. It is therefore contemplated that the appended claims will
cover any such modifications or embodiments that fall within the scope of the invention.



What is claimed is:

- 1 1. An umbrella apparatus comprising:
2 a base support portion;
3 a pole portion coupled to the base support portion;
4 a canopy portion hingedly coupled to the pole portion;
5 a rechargeable electrical power system for providing electrical power to the
6 umbrella apparatus; and
7 a solar energy system carried by the pole portion above the canopy portion, the
8 solar energy system being adapted to collect solar energy and convert the solar energy
9 into electrical energy, the solar energy system being conductively coupled to the
10 rechargeable electrical power system, such that the solar energy collected and
11 converted into electrical energy recharges the rechargeable electrical power system.
- 1 2. The umbrella apparatus according to claim 1, wherein the rechargeable electrical
2 power system and the solar energy system are both carried by a housing mounted on
3 the pole portion above the canopy portion.
- 1 3. The umbrella apparatus according to claim 1, wherein the rechargeable electrical
2 power system is carried by the base support portion and the solar energy system is
3 carried by a housing mounted on the pole portion above the canopy portion.
- 1 4. The umbrella apparatus according to claim 1, wherein the rechargeable electrical
2 power system is powered by at least one rechargeable battery.

- 1 5. The umbrella apparatus according to claim 1, further comprising:
2 an electrical charging system for recharging the rechargeable electrical power
3 system, the electrical charging system being adapted to receive power from an AC
power outlet.
- 1 6. The umbrella apparatus according to claim 1, further comprising:
2 a lighting system carried by the canopy portion, the lighting system being

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3 conductively coupled to and powered by the rechargeable electrical power system.

1 7. The umbrella apparatus according to claim 6, wherein the lighting system
2 comprises:

- 3 a plurality of rib members coupled to the canopy portion; and
- 4 a plurality of cold cathode tube elements carried by the rib members, each cold
5 cathode tube element being conductively coupled to and powered by the rechargeable
6 electrical power source.

8. The umbrella apparatus according to claim 6, wherein the lighting system
comprises:

- 3 a plurality of rib members coupled to the canopy portion; and
- 4 a plurality of light emitting diode elements carried by the rib members, each light
5 emitting diode element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 9. The umbrella apparatus according to claim 6, wherein the lighting system
2 comprises:

- 3 a plurality of rib members coupled to the canopy portion; and
- 4 a plurality of fluorescent light elements carried by the rib members, each
5 fluorescent light element being conductively coupled to and powered by the
6 rechargeable electrical power source.

1 10. The umbrella apparatus according to claim 1, further comprising:
2 an electromechanical opening and closing system for opening and closing the
3 canopy portion, the electromechanical opening and closing system being conductively
4 coupled to and powered by the rechargeable electrical power system.

1 11. The umbrella apparatus according to claim 10, wherein the electromechanical
2 opening and closing system comprises:

- 3 an electric motor carried by the pole portion;

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4 a control system for controlling the electric motor;
5 a gear system coupled to the electric motor; and
6 a cable and pulley system coupled to the gear system and the canopy portion;
7 wherein the opening and closing of the canopy portion is achieved by the electric
8 motor in response to selective operation of the control system.

1 12. The umbrella apparatus according to claim 11, wherein the control system
2 comprises:

3 a receiver conductively coupled to the electric motor;
4 a remote transmitter for transmitting an encoded signal to the receiver; and
5 a decoder conductively coupled to the receiver for decoding the encoded signal
6 from the transmitter.

1 13. The umbrella apparatus according to claim 1, further comprising:
2 a cooling system carried by the canopy portion, the cooling system being
3 conductively coupled to and powered by the rechargeable electrical power system.

1 14. The umbrella apparatus according to claim 13, wherein the cooling system
2 comprises:

3 at least one electric fan coupled to the canopy portion, each electric fan being
4 conductively coupled to and powered by the rechargeable electrical power system.

1 15. The umbrella apparatus according to claim 13, wherein the cooling system
2 comprises:

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3 a fluid reservoir operably associated with the umbrella apparatus;
4 at least one mist nozzle coupled to the canopy portion, each mist nozzle being in
5 fluid communication with the fluid;
6 a conduit creating fluid communication between the fluid reservoir and each mist
7 nozzle; and
8 a pump for pumping the fluid from the reservoir through each mist nozzle.

1 ¹⁰ 16. An umbrella apparatus comprising:
2 a base support portion;
3 a pole portion coupled to the base support portion;
4 a canopy portion hingedly coupled to the pole portion;
5 a rechargeable electrical power system for providing electrical power to the
6 umbrella apparatus;
7 a solar energy system carried by the pole portion above the canopy portion, the
8 solar energy system being adapted to collect solar energy and convert the solar energy
9 into electrical energy, the solar energy system being conductively coupled to the
10 rechargeable electrical power system, such that the solar energy collected and
11 converted into electrical energy recharges the rechargeable electrical power system;
12 and
13 a combination of two or more of the following modular systems:
14 a lighting system carried by the canopy portion;
15 an electromechanical opening and closing system for opening and closing
16 the canopy portion; or
17 a cooling system;
18 wherein each modular system is configured to be interchanged with each
19 other, each modular system being conductively coupled to and powered by the
20 rechargeable electrical power system.

1 ¹¹ ~~17~~. The umbrella apparatus according to claim ¹⁰ ~~16~~, wherein the lighting system
2 comprises:
3 a plurality of rib members coupled to the canopy portion; and
4 a plurality of cold cathode tube elements carried by the rib members, each cold
5 cathode tube element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 ¹² ~~18~~. The umbrella apparatus according to claim ¹⁰ ~~16~~, wherein the lighting system
2 comprises:
3 a plurality of rib members coupled to the canopy portion; and

30

4 a plurality of light emitting diode elements carried by the rib members, each light
5 emitting diode element being conductively coupled to and powered by the rechargeable
6 electrical power source.

1 ¹³ 19. The umbrella apparatus according to claim ¹⁰ 18, wherein the cooling system
2 comprises:

- 3 a fluid reservoir operably associated with the umbrella apparatus;
4 at least one mist nozzle coupled to the canopy portion, each mist nozzle being in
5 fluid communication with the fluid;
6 a conduit creating fluid communication between the fluid reservoir and each mist
7 nozzle; and
8 a pump for pumping the fluid from the reservoir through each mist nozzle.

1 ¹⁴ 20. The umbrella apparatus according to claim ¹⁰ 18, wherein the electromechanical
2 opening and closing system comprises:

- 3 an electric motor carried by the pole portion;
4 a control system for controlling the electric motor;
5 a gear system coupled to the electric motor; and
6 a cable and pulley system coupled to the gear system and the canopy portion;
7 wherein the opening and closing of the canopy portion is achieved by the electric
8 motor in response to selective operation of the control system.

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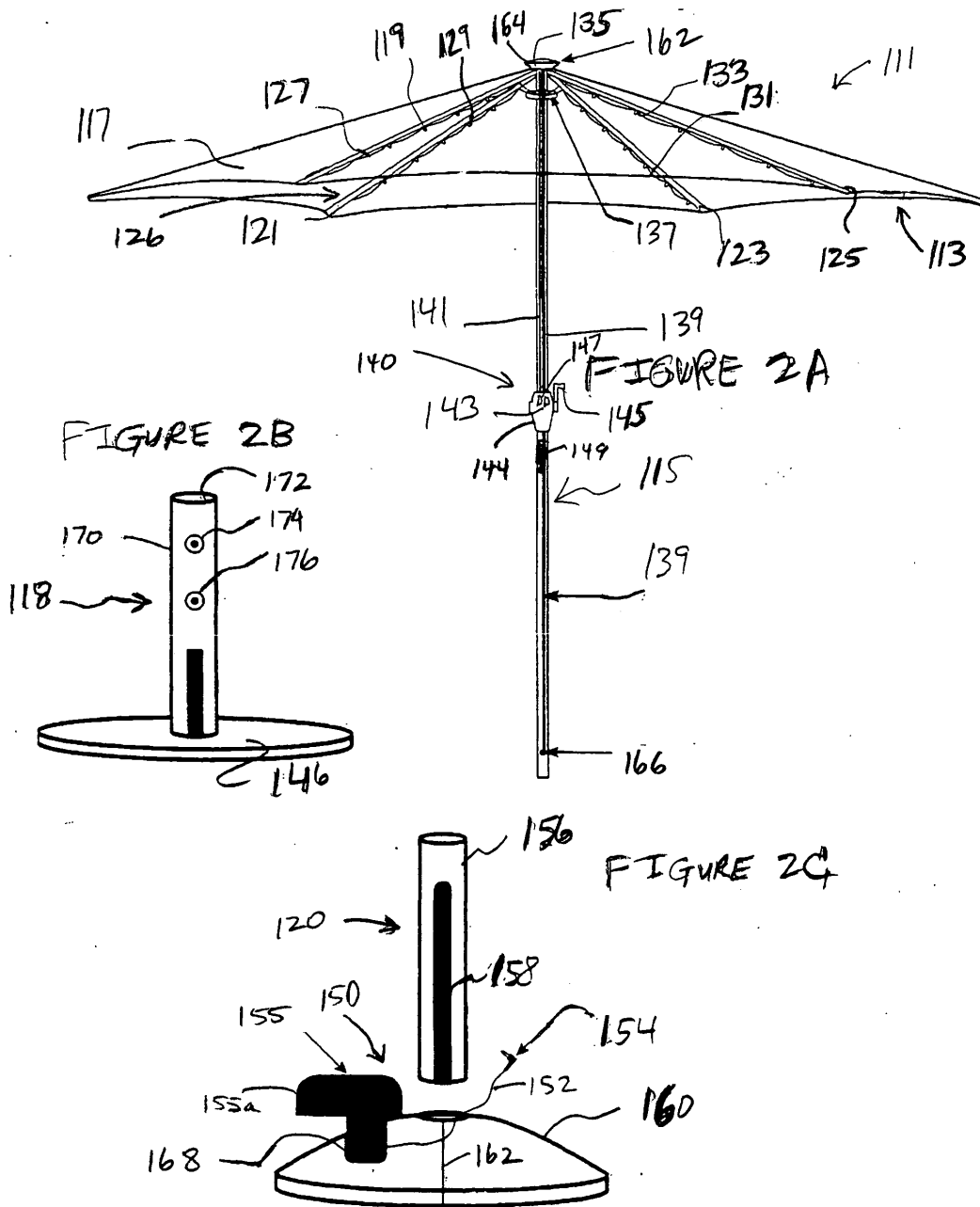
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ABSTRACT OF THE DISCLOSURE

2 A lawn or patio umbrella with an integral lighting system that utilizes cold cathode
3 ray tubes, light emitting diodes (LED's), or florescent lights, to provide relatively bright
4 outdoor light for reading and other activities that require relatively high light intensities is
5 provided. In one embodiment, a modular, electrically powered lawn or patio umbrella in
6 which lighting systems, such as those utilizing cold cathode tubes, LED's, or florescent
7 lights; cooling systems, such as those utilizing electric fans or misting systems; and
8 motorized retraction systems; can be selectively interchanged is provided.

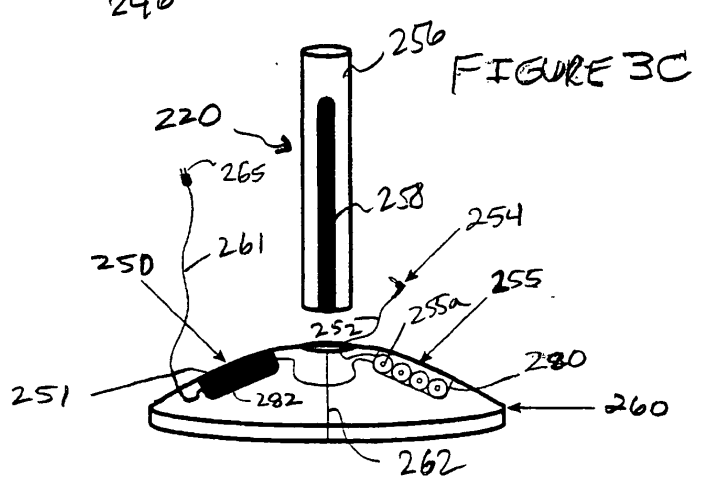
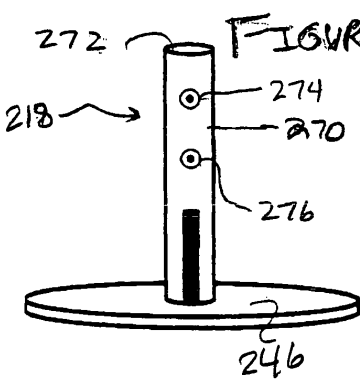
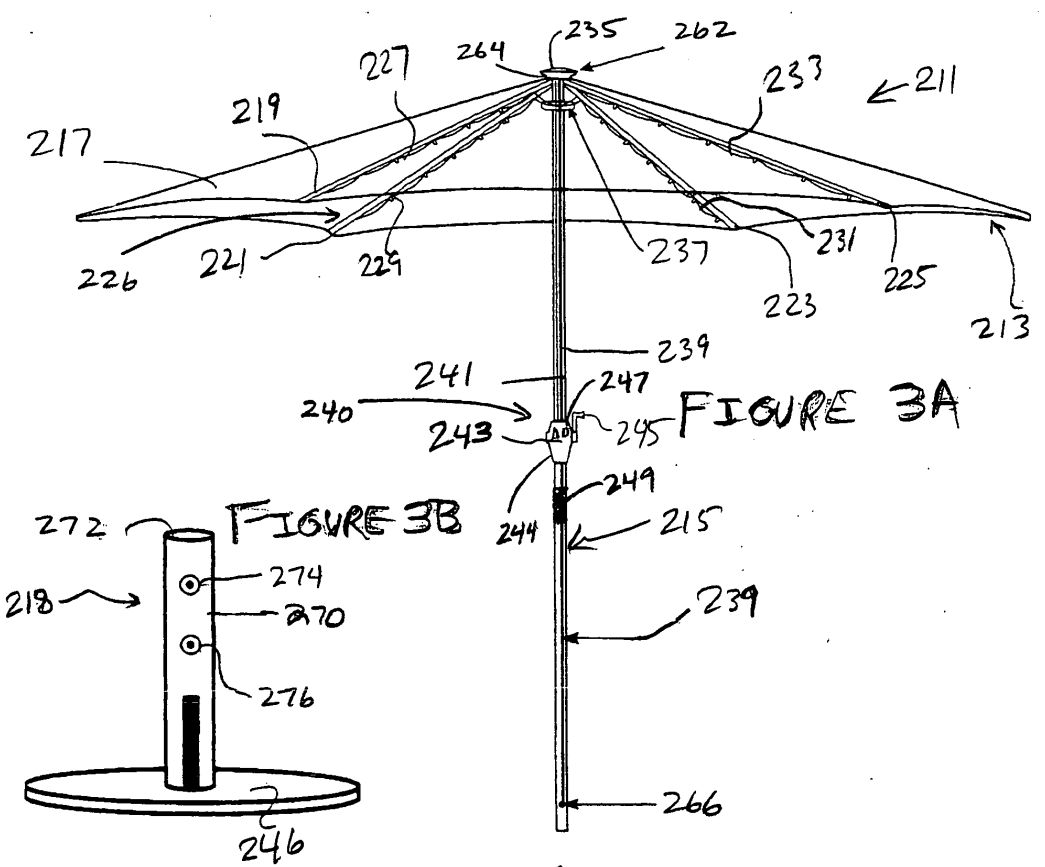
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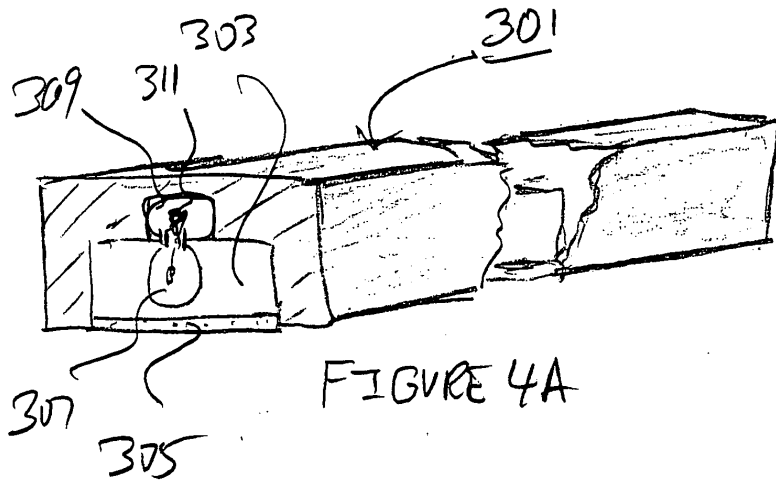


FIGURE 4A

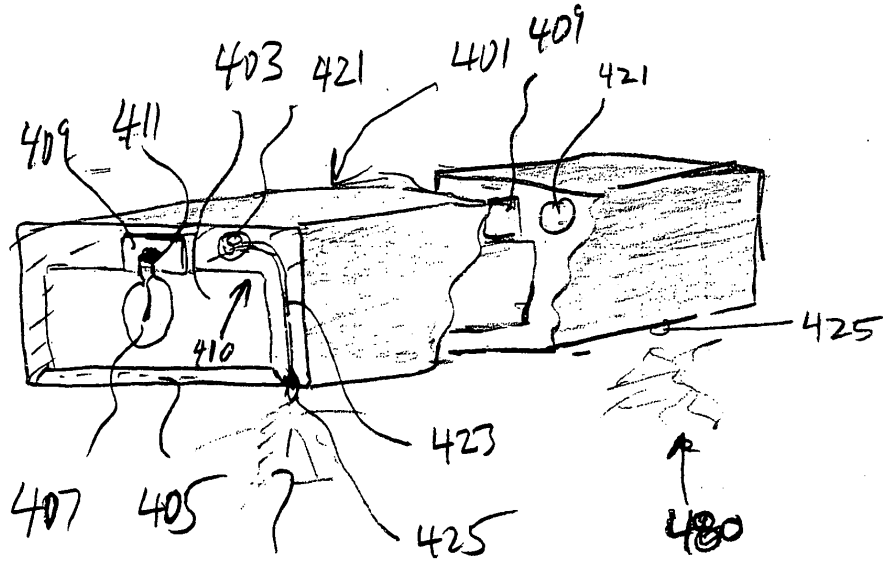


FIGURE 4B

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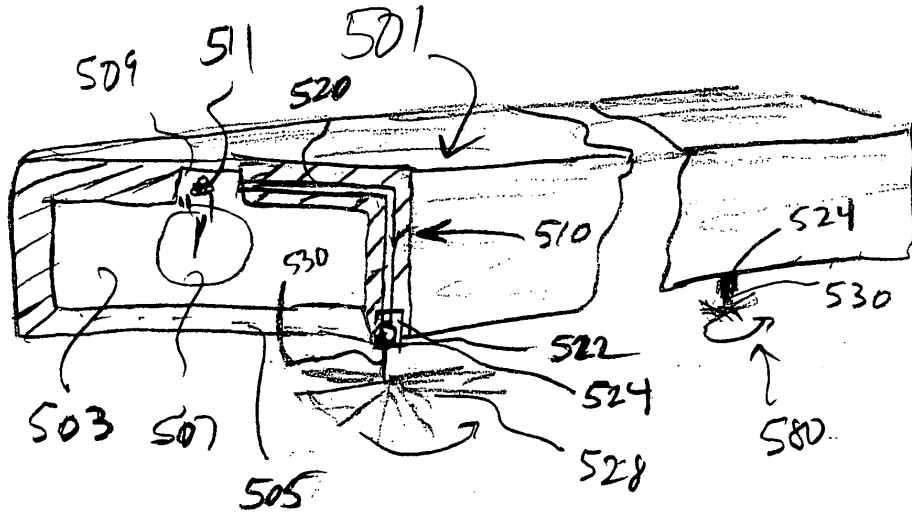
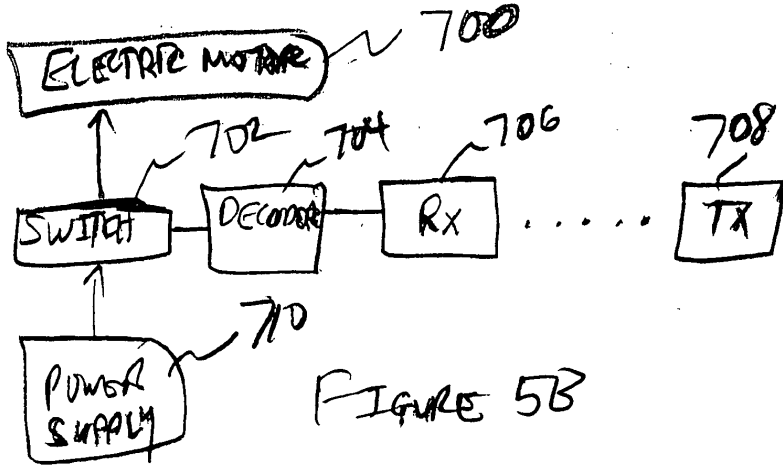
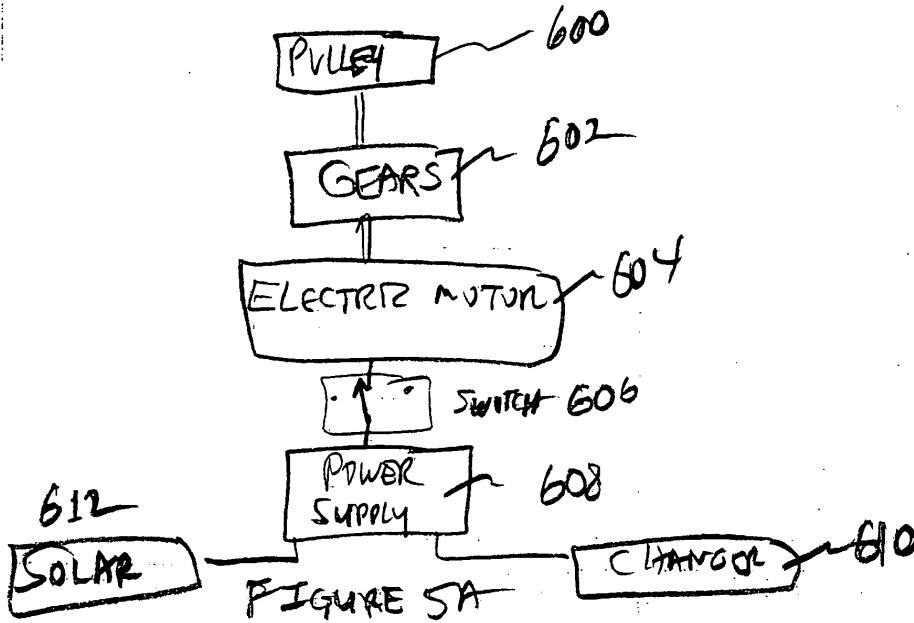


FIGURE 4C

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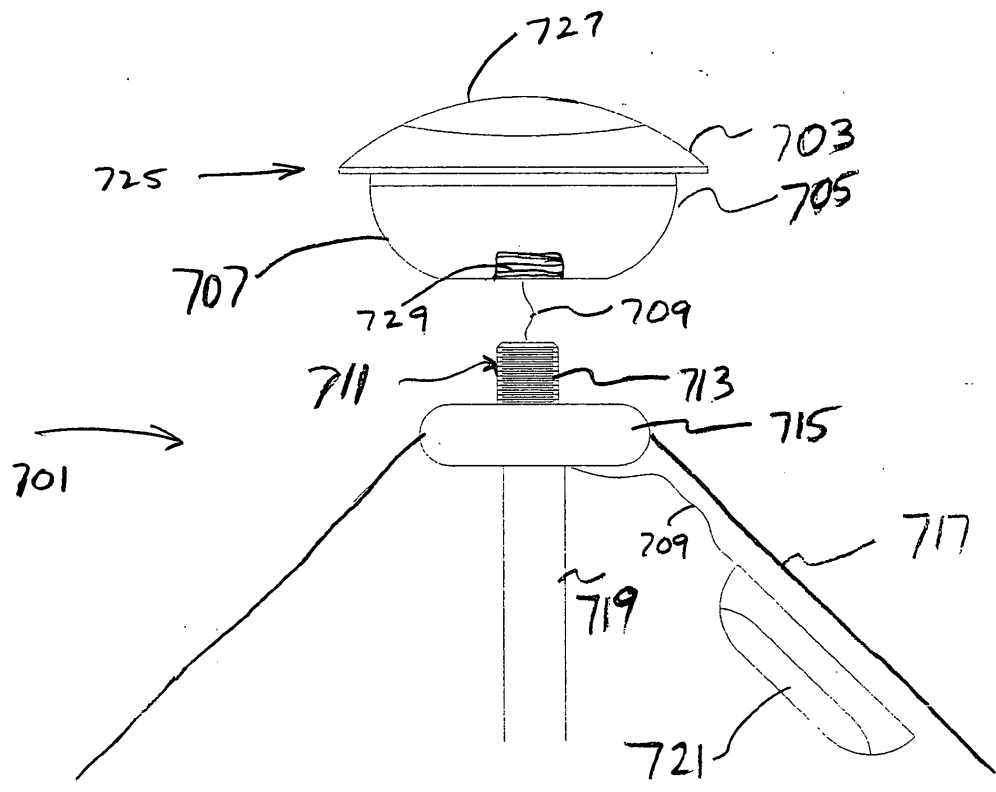


FIGURE 6

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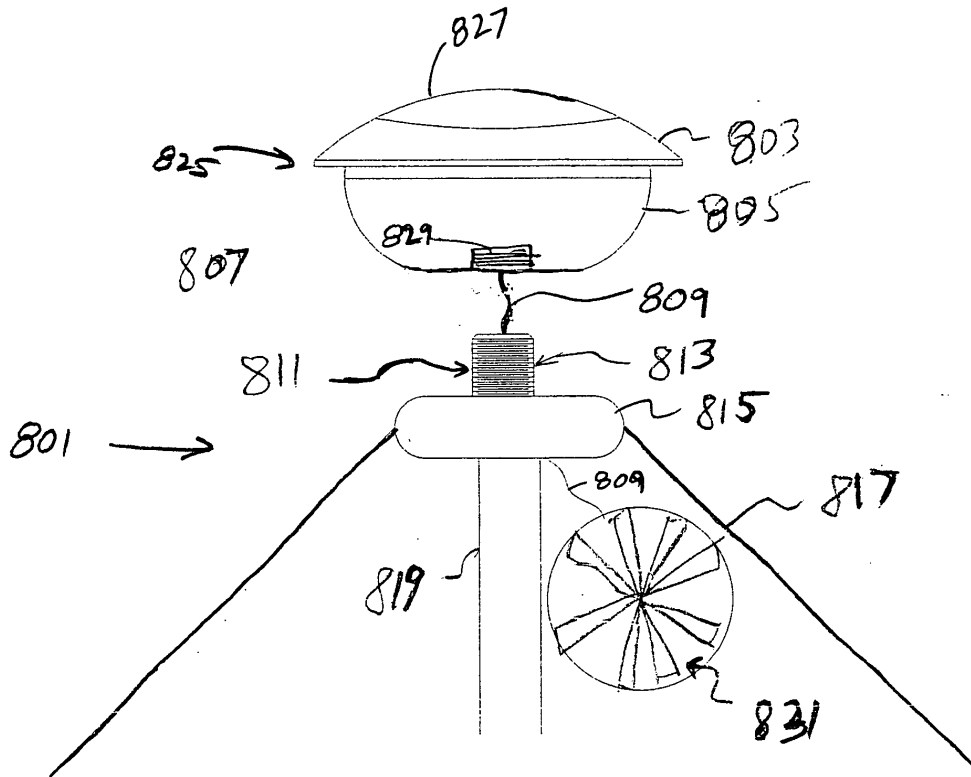


FIGURE 7

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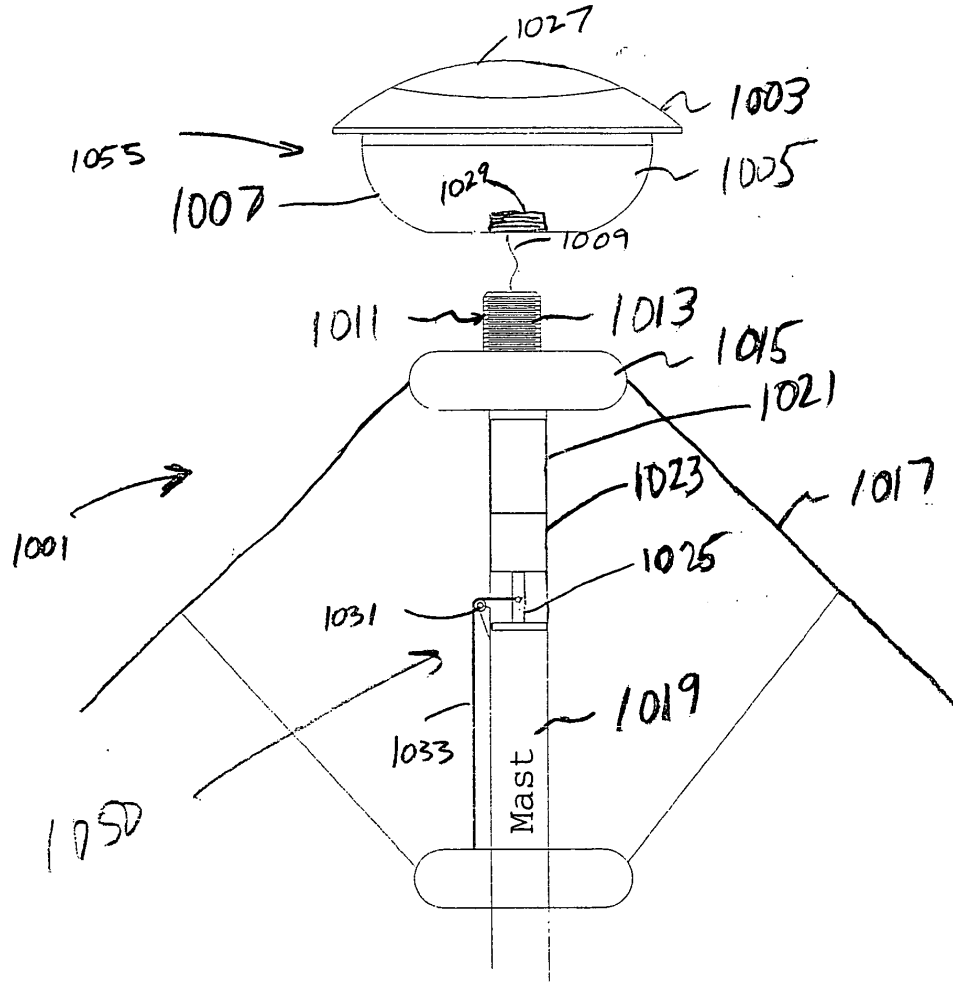


FIGURE 9

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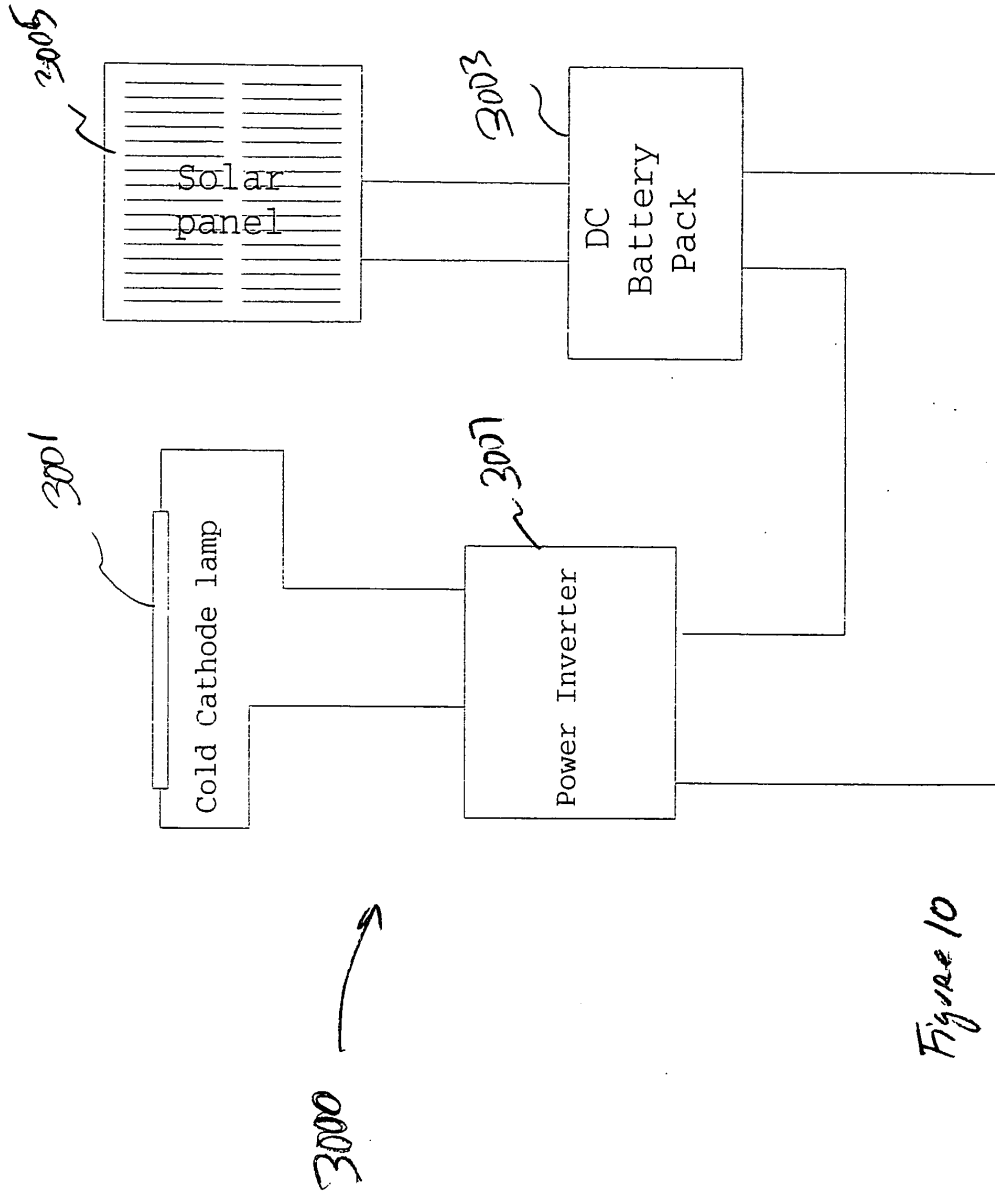


Figure 10

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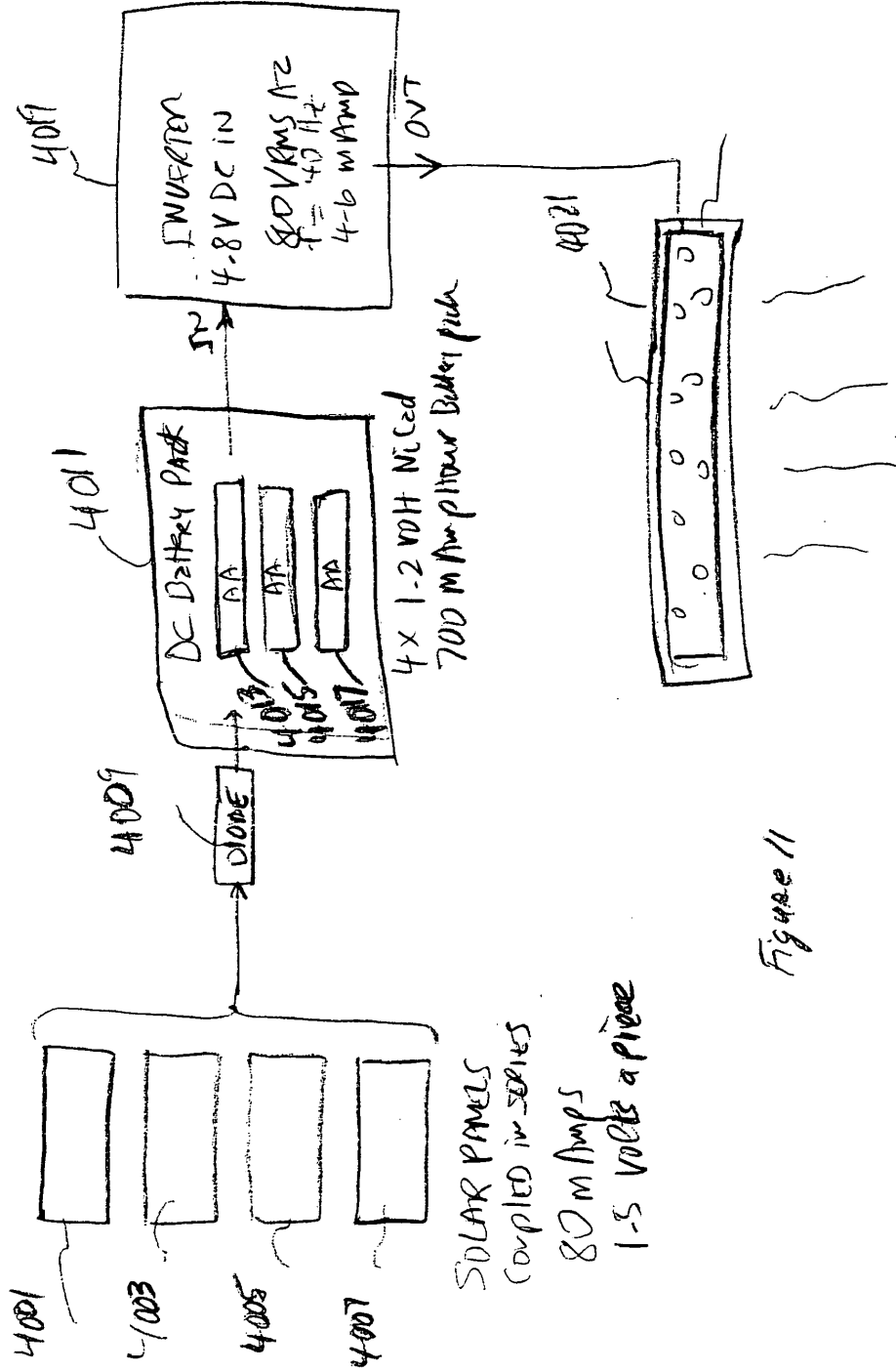


Figure 11

YOT-1002-0110

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe that I am an original, first, and sole inventor, or joint inventor if other names are set forth below, of the subject matter which is claimed and for which a patent is sought on the invention entitled

UMBRELLA APPARATUS

said application being filed herewith, and being further identified by Attorney Docket No. 0638MH-40982-US.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Office all information known to my person to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Sec. 1.56(a).

I hereby declare that this application claims the benefit of U.S. Provisional Application No. 60/267,018, filed 7 February 2001, titled "Lighted Patio Umbrella Apparatus;" and of U.S. Provisional Application No. 60/335,933, filed 2 November 2001, titled "Outdoor Lighting Systems with Cold Cathode Tubes."

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of

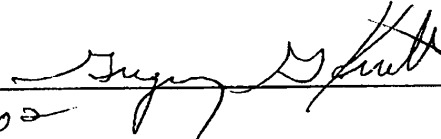
application or any patent issued thereon.

I hereby appoint **Melvin A. Hunn, Reg. No. 32,574, Kenneth C. Hill, Reg. No. 29,650, and James E. Walton, Reg. No. 47,245** to prosecute this application and to transact all business in the U.S. Patent and Trademark Office in connection therewith.

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20070207 04:10 PM

Inventor's Signature: 
Date of Signature: 2-7-02

Full Name of Inventor: **Gregory G. Kuelbs**
Residence and P.O. Address: **1831 River Oaks Drive, Westlake, Texas 76262**
Citizenship: **United States of America**

Declaration

YOT-1002-0112

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In Re Application of:	§	
GREGORY G. KUELBS	§	Examiner:
Serial No. TO BE ASSIGNED	§	
Filed: HEREWITH	§	Art Unit:
For: TOP PORTION OF LAMP OR HANGABLE ACCESSORY	§	

POWER OF ATTORNEY

Box: Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

WORLD FACTORY, INC., assignee of the entire right, title, and interest in the above-identified application filed herewith and being further identified by Attorney Docket No. 0638MH-40982-US, hereby appoints the following attorneys to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected therewith:

James E. Walton, Reg. No. 47,245; **Melvin A. Hunn**, Reg. No. 32,574; and **Kenneth C. Hill**, Reg. No. 29,650.

Send all correspondence to:

James E. Walton
HILL & HUNN, LLP
201 Main Street, Suite 1440
Fort Worth, Texas 76102
(817) 332-2113 (Voice)
(817) 332-2114 (Facsimile)
jimwalton@hillandhunn.com (E-Mail)

Power of Attorney

YOT-1002-0113

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or document or any patent resulting therefrom.

WORLD FACTORY, INC.

By: *[Signature]*
 Date: 2-7-02

2020-02-07 10:04:02

Power of Attorney

YOT-1002-0114

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. TO BE ASSIGNED

Filed: 7 FEBRUARY 2001

For: UMBRELLA APPARATUS

§
§
§
§
§
§
§
§

Examiner:

Art Unit:

ASSERTION OF ENTITLEMENT TO SMALL ENTITY STATUS
UNDER 37 C.F.R. § 1.27(c)

Box: Patent Application
Assistant Commissioner for Patents
Washington, D.C.

Sir:

Pursuant to 37 C.F.R. 1.27(c)(2)(i), the undersigned hereby asserts that **WORLD FACTORY, INC.**, owner by assignment of the entire right, title, and interest in the subject application, is a small entity as defined in 37 C.F.R. § 1.9(d) and is entitled to small entity status for purposes of paying reduced fees under Section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the subject invention.

"EXPRESS MAIL" No. EV024943769US
Date of Deposit: <u>2/7/02</u>
I hereby certify that this paper or fee is being deposited with the United States Postal Service Express Mail "Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box: Patent Application, P.O. Box 2327, Arlington, VA 22202-0327,
by <u>Jana E. Walters</u>

2002 FEB 07 10 43 AM '02



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
 UNITED STATES PATENT AND TRADEMARK OFFICE
 WASHINGTON, D.C. 20231
 www.uspto.gov



Bib Data Sheet

CONFIRMATION NO. 9580

SERIAL NUMBER 10/068,424	FILING DATE 02/07/2002 RULE	CLASS 362 ✓	GROUP ART UNIT 2875 ✓	ATTORNEY DOCKET NO. 0638MH-40982-US
APPLICANTS Gregory G. Kuelbs, Westlake, TX;				
** CONTINUING DATA ***** <i>Yes</i> <i>JS</i> 3/17/2003 THIS APPLN CLAIMS BENEFIT OF 60/267,018 02/07/2001 AND CLAIMS BENEFIT OF 60/335,933 11/02/2001				
** FOREIGN APPLICATIONS ***** <i>None</i> <i>JS</i> 3/17/2003.				
IF REQUIRED, FOREIGN FILING LICENSE GRANTED** SMALL ENTITY ** ** 03/07/2002				
Foreign Priority claimed 35 USC 119 (a-d) conditions met	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance	STATE OR COUNTRY TX	SHEETS DRAWING 12	TOTAL CLAIMS 20 <i>14</i>
Verified and Acknowledged	Examiner's Signature <i>James 3/17/2003</i> Initials <i>JS</i>			INDEPENDENT CLAIMS <i>5</i>
ADDRESS James E. Walton HILL & HUNN, LLP Suite 1440 201 Main Street Fort Worth ,TX 76102-3105				
TITLE Umbrella apparatus				
FILING FEE RECEIVED 370	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

YOT-1002-0116

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

02/12/2002 MDAATE1 00000019 10068424

01 FC:201 370.00 DP

PTO-1556
(5/87)

*U.S. GPO: 2000-468-987/39595

YOT-1002-0117

BEST AVAILABLE COPY

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2001

Application or Docket Number

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS		
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	() minus 20 =	()
INDEPENDENT CLAIMS	() minus 3 =	()
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE

OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	

CLAIMS AS AMENDED - PART II

	(Column 1)		(Column 2)		(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA
	Total	* 14	Minus	** 20	=
	Independent	* 5	Minus	*** 3	= 2
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					

SMALL ENTITY TYPE

OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=	84	OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE	90	OR	TOTAL ADDIT. FEE	

	(Column 1)		(Column 2)		(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)		(Column 2)		(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2001

Application or Docket Number

0638MH-40982

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	20	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	20 minus 20 = *	—
INDEPENDENT CLAIMS	2 minus 3 = *	—
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

SMALL ENTITY TYPE <input type="checkbox"/>		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X\$ 9=	/	OR	X\$18=	
X42=	/	OR	X84=	
+140=	/	OR	+280=	
TOTAL 370		OR	TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total *	Minus **	=
	Independent *	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total *	Minus **	=
	Independent *	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total *	Minus **	=
	Independent *	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

CLAIMS ONLY							SERIAL NO.	FILING DATE
							10018424	02-07-02
							APPLICANT(S)	
CLAIMS								
	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT		*	*
	IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.
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TOTAL DEP.	18	←		←		←		←
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TOTAL IND.		↓		↓		↓		↓
TOTAL DEP.		←		←		←		←
TOTAL CLAIMS								

* MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS

FORM PTO-2022 (1-98)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

*U.S. Government Printing Office: 1998 - 433-214/70303

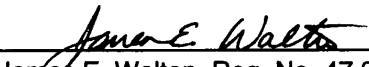
YOT-1002-0120

This Information Disclosure Statement is being filed under 37 C.F.R. § 1.97(b)(3) before the mailing date of the first Office Action.

No fee is deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees that are necessary, or credit any overpayments, to Deposit Account No. **50-1060**.

Respectfully submitted,

6/12/02
Date


James E. Walton, Reg. No. 47,245
Kenneth C. Hill, Reg. No. 29,650
Melvin A. Hunn, Reg. No. 32,574
HILL & HUNN LLP
201 Main Street, Suite 1440
Fort Worth, Texas 76102
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ATTORNEYS FOR APPLICANTS

COPY OF PAPERS
ORIGINALLY FILED

499 2875
7.10.02



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

Application of:

GREGORY G. KUELBS

Serial No. 10/068,424

Filed: 7 FEBRUARY 2002

For: **UMBRELLA APPARATUS**

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§
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§
§
§
§
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§

Examiner:

Art Unit: 2875

TRANSMITTAL

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please file the following enclosed documents in the subject application:

1. This Transmittal with Certificate of Mailing;
2. Information Disclosure Statement; and
3. Our return postcard which we would appreciate you date stamping and returning to us.

RECEIVED
JUN 25 2002
TC 2800 MAIL ROOM

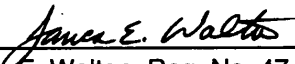


CERTIFICATE OF MAILING 37 C.F.R. § 1.8(a)	
I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail service with sufficient postage under 37 C.F.R. § 1.8(a) on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.	
Date of Deposit: <u>6/12/02</u>	By: <u>Janna E. Walters</u>

No fee is deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees that are necessary, or credit any overpayments, to Deposit Account No. **50-1060**.

Respectfully submitted,

6/12/02
Date


James E. Walton, Reg. No. 47,245
Kenneth C. Hill, Reg. No. 29,650
Melvin A. Hunn, Reg. No. 32,574
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jimwalton@hillandhunn.com (e-mail)
kenhill@hillandhunn.com (e-mail)
melhunn@hillandhunn.com (e-mail)

ATTORNEYS FOR APPLICANT

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	27103	solar adj (power or energy)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
2	BRS	L2	957	1 and (recharg\$5 with (electrical or batter\$4))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
3	BRS	L3	10	2 and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
4	BRS	L4	16794	umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
5	BRS	L5	66	1 and 4	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
6	BRS	L6	22425	recharg\$6 adj batter\$4	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
7	BRS	L7	708	1 and 6	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
8	BRS	L8	7	umbrella and 7	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
9	BRS	L9	163	umbrella and 362/\$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
10	BRS	L10	5	("5007811" "5172711" "5273062" "5711331" "5765582").PN.	USPAT
11	BRS	L11	9	("1148332" "1532802" "1555579" "2547896" "2627217" "2729220" "3177881" "4154255" "5007811").PN.	USPAT
12	BRS	L13	20	("1148332" "1173665" "1555579" "1683270" "2627217" "2729220" "2817281" "3102547" "3177881" "3318560" "3444799" "4154255" "4628791" "4753411" "4850564" "4867187" "4915670" "5007811" "5161561" "5172711").PN.	USPAT
13	BRS	L16	4	9 and 1	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
14	BRS	L17	448	362/96.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

YOT-1002-0125

12/05/2002, EAST Version: 1.03.0002

	Type	L #	Hits	Search Text	DBs
15	BRS	L18	11	362/96.ccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
16	BRS	L19	4	362/102.ccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
17	BRS	L20	59	362/102.ccls. and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
18	BRS	L21	4	362/577.ccls. and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
19	BRS	L22	1	362/577.ccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
20	BRS	L23	0	362/577.ccls. and solar and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
21	BRS	L24	0	362/209.ccls. and solar and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
22	BRS	L25	5	362/209.ccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
23	BRS	L26	34	362/276.ccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
24	IS&R	L27	2	("5172711").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
25	IS&R	L28	2	("5349975").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
26	IS&R	L29	2	("5463536").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

YOT-1002-0126

12/05/2002, EAST Version: 1.03.0002



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,424	02/07/2002	Gregory G. Kuelbs	0638MH-40982-US	9580

7590 12/09/2002

James E. Walton
HILL & HUNN, LLP
Suite 1440
201 Main Street
Fort Worth, TX 76102-3105

EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT PAPER NUMBER

2875

DATE MAILED: 12/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 10/068,424	Applicant(s) KUELBS, GREGORY G.
Examiner Hargobind S Sawhney	Art Unit 2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 June 2002 .
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 16-20 is/are allowed.
- 6) Claim(s) 1-4, 13 and 14 is/are rejected.
- 7) Claim(s) 5-12 and 15 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____ .
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 . 6) Other:

DETAILED ACTION

1. The information statement filed on June 18,2002 has been entered.

Drawings

2. The drawings filed on February 7,2002 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review," PTO-948.

Claim Objections

2. Claim 12 is objected to because of the following informalities:
Claim 12, line 6, "fro' needs to be corrected as -for--.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,4,13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Mueller et al. (U.S. Patent No. 5,172,711).

Regarding claims 1,4,13 and 14, Mueller et al. (U.S. Patent No. 5,172,711)

discloses an umbrella apparatus 80 (Figure 1, column 5, line 46) comprising:

- A base support portion 28' (Figure 1, column 5, line 56), a pole portion 16' (Figure 1, column 2, line 56) coupled to the base support portion 28', a canopy portion 12' (Figure 1, column 5, line 55) hingedly coupled (claims 2 and 3) to the pole portion 16' (Figure 5), a rechargeable electric power system 26' (Figure 1, column 6, lines 16-18) providing electrical power to the umbrella apparatus 80;
- a solar system 82 (Figure 1, column 6, lines 60 and 61) carried by the pole portion 16, and being positioned above the canopy portion 12' (Figure 1, column 6, lines 60 and 61) for collecting solar energy and converting it into electrical energy;

- the solar energy system being conductively coupled to the rechargeable batteries 26' (Figure 1, column 6, lines 16-18);
- a cooling system 18' (Figure 1, column 5, lines 56 and 57) carried by the canopy portion, and electrically coupled to the rechargeable electrical power system 26'; and
- the cooling system including a fan 18' (Figure 1, column 5, lines 56 and 57) electrically coupled to the rechargeable electrical power system 26'.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al. (U.S. Patent No. 5,172,711) in view of Benton (U.S. Patent No. 6,017,188).

Regarding Claim 2, Mueller et al. (U.S. Patent No. 5,172,711) teaches an umbrella apparatus comprising a rechargeable electrical power system being carried by its base portion, and a solar energy system being mounted on the upper surface of its

YOT-1002-0131

canopy. However, Mueller does not teach a rechargeable electrical power system and a solar energy system both being carried by a housing mounted on the pole portion of the umbrella apparatus.

On the other hand, Benton (U.S. Patent No. 6,017,188) discloses a patio table and a pole fan combination comprising a rechargeable electrical power system and a solar energy system both being carried by a housing mounted on the pole portion of the apparatus.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the umbrella apparatus of Mueller by providing positioning of a rechargeable electrical power system and a solar energy system as taught by Benton for the benefit and advantage of less time consuming and less costly assembly requiring less wiring.

Regarding Claim 3, Mueller et al. (U.S. Patent No. 5,172,711) teaches an umbrella apparatus comprising a rechargeable electrical power system being carried by its base portion, and a solar energy system being mounted on the upper surface of its canopy. However, Mueller does not teach a solar energy system being carried by a housing mounted on the pole portion of the umbrella apparatus.

On the other hand, Benton (U.S. Patent No. 6,017,188) discloses a patio table and a pole fan combination comprising a solar energy system both being carried by a housing mounted on the pole portion of the apparatus.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the umbrella apparatus of Mueller by providing a solar energy

system carried by a housing mounted on the pole portion of the umbrella apparatus as taught by Benton (U.S. Patent No. 6,017,188) as the locations taught by Mueller and that by Benton are functionally equivalent. In addition, the poisoning taught by Benton has benefit of less time-consuming assembly of the apparatus.

Allowable Subject Matter

7. Claims 5-12 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, including Mueller et al. (U.S. Patent No. 5,172,711) and Benton (U.S. Patent No. 6,017,188), does not show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not disclose proper motivation for combining:

- a rechargeable electrical power system rechargeable from an AC power outlet as recited in Claim 5;
- a lighting system carried by the canopy portion as recited in Claim 6;
- an electromechanical opening and closing the canopy as recited in Claim 10; and

- a cooling system a fluid reservoir, a mist nozzle hydraulically coupled to a pump as recited in Claim 15.

Claims 7-9 are necessarily objected because of their dependency on the objected base Claim 6.

Claim 11 and 12 are necessarily objected because of their dependency on the objected base Claim 10.

8. Claims 16-20 are allowed.

The prior art of record, including Mueller et al. (U.S. Patent No. 5,172,711) and Benton (U.S. Patent No. 6,017,188), does not show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not disclose proper motivation for combining at least two of the following modular , interchangeable systems:

- a cooling system as recited in Claim 16;
- a lighting system carried by the canopy portion as recited in Claim 16; and
- an electromechanical opening and closing the canopy as recited in Claim 16.

Claims 17-20 are necessarily allowed because of their dependency on the allowed base Claim 16.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mozdzanowski (U.S. Patent No. 5,273,062) discloses an umbrella apparatus comprising some of the claimed features claimed a solar energy system as disclosed by the applicant.

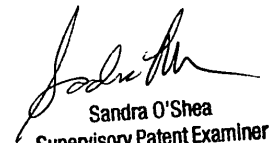
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S, Sawhney whose telephone number is 703-306-5909. The examiner can normally be reached on 7:30 - 5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 703-305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-8303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS

12/4/2002


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800

Notice of References Cited	Application/Control No. 10/068,424	Applicant(s)/Patent Under Reexamination KUELBS, GREGORY G.	
	Examiner Hargobind S Sawhney	Art Unit 2875	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-5,172,711	12-1992	Mueller et al.	135/16
B	US-5,273,062	12-1993	Mozdzanowski, Peter	135/16
C	US-			
D	US-			
E	US-			
F	US-			
G	US-			
H	US-			
I	US-			
J	US-			
K	US-			
L	US-			
M	US-			

FOREIGN PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
N					
O					
P					
Q					
R					
S					
T					

NON-PATENT DOCUMENTS

*	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
U	
V	
W	
X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

The drawing(s) filed (insert date) 02/07/02 are:

- A. approved by the Draftsperson under 37 CFR 1.84 or 1.152.
 B. objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be submitted according to the instructions on the back of this notice.

<p>1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color. ___ Color drawings are not acceptable until petition is granted. Fig(s) _____ ___ Pencil and non black ink not permitted. Fig(s) _____</p> <p>2. PHOTOGRAPHS. 37 CFR 1.84(b) ___ 1 full-tone set is required. Fig(s) _____ ___ Photographs may not be mounted. 37 CFR 1.84(c). ___ Poor quality (half-tone). Fig(s) _____</p> <p>3. TYPE OF PAPER. 37 CFR 1.84(e) ___ Paper not flexible, strong, white, and durable. Fig(s) _____ ___ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) _____ ___ Mylar, velum paper is not acceptable (too thin). Fig(s) _____</p> <p>4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes: ___ 21.0 cm by 29.7 cm (DIN size A4) ___ 21.6 cm by 27.9 cm (8 1/2 x 11 inches) ___ All drawing sheets not the same size. Sheet(s) _____ ___ Drawing sheets not an acceptable size. Fig(s) _____</p> <p>5. MARGINS. 37 CFR 1.84(g): Acceptable margins: Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11 Margins not acceptable. Fig(s) _____ Top (T) _____ Left (L) _____ Right (R) _____ Bottom (B) _____</p> <p>6. VIEWS. 37 CFR 1.84(h) REMINDER: Specification may require revision to correspond to drawing changes. Partial views. 37 CFR 1.84(h)(2) ___ Brackets needed to show figure as one entity. Fig(s) _____ ___ Views not labeled separately or properly. Fig(s) _____ ___ Enlarged view not labeled separately or properly. Fig(s) _____</p> <p>7. SECTIONAL VIEWS. 37 CFR 1.84 (h)(3) ___ Hatching not indicated for sectional portions of an object. Fig(s) _____ ___ Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____</p>	<p>8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i) ___ Words do not appear on a horizontal, left-to-right fashion, when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) _____</p> <p>9. SCALE. 37 CFR 1.84(k) ___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) _____</p> <p>10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(j) ___ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality). Fig(s) <u>1-11</u></p> <p>11. SHADING. 37 CFR 1.84(m) ___ Solid black areas pale. Fig(s) _____ ___ Solid black shading not permitted. Fig(s) _____ ___ Shade lines, pale, rough and blurred. Fig(s) _____</p> <p>12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p) ___ Numbers and reference characters not plain and legible. Fig(s) _____ ___ Figure legends are poor. Fig(s) _____ ___ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1) Fig(s) _____ ___ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s) _____ ___ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) _____</p> <p>13. LEAD LINES. 37 CFR 1.84(q) ___ Lead lines cross each other. Fig(s) _____ ___ Lead lines missing. Fig(s) _____</p> <p>14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t) ___ Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) _____</p> <p>15. NUMBERING OF VIEWS. 37 CFR 1.84(u) ___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____</p> <p>16. CORRECTIONS. 37 CFR 1.84(w) ___ Corrections not made from prior PTO-948 dated _____</p> <p>17. DESIGN DRAWINGS. 37 CFR 1.152 ___ Surface shading shown not appropriate. Fig(s) _____ ___ Solid black shading not used for color contrast. Fig(s) _____</p>
<p>COMMENTS</p>	

REVIEWER Draftsman: Son Lam DATE 12/05/02 TELEPHONE NO. _____
(703)308-0366

ATTACHMENT TO PAPER NO. 3

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REMINDER

Drawing changes may also require changes in the specification, e.g., if Fig. 1 is changed to Fig. 1A; Fig. 1B; Fig. 1C, etc.; the specification, at the Brief Description of the Drawing, must likewise be changed. Please make such changes by 37 CFR 1.312 Amendment at the time of submitting drawings.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Drawings - 37 CFR 1.85

File new drawings with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Review Branch.

2. Timing for Corrections

Applicant is required to submit acceptable corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37).

Failure to take corrective action within set period will result in **ABANDONMENT of the Application!**

3. Corrections other than Defects Noted by the Drawing Review Branch on the Form PTO-948

All changes to the drawings, other than defects noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted other than correction of defects, unless the examiner has approved the proposed changes.

BEST AVAILABLE COPY



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

4/10
J. Steptoe
3-0-03

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. **10/068,424**

Filed: **7 FEBRUARY 2002**

For: **UMBRELLA APPARATUS**

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Examiner: **SAWHNEY, HARGOBIND S.**

Art Unit: **2875**

AMENDMENT A

Assistant Commissioner for Patents
Washington, D.C. 20231

RECEIVED
MAR - 3 2003
TECHNOLOGY CENTER 2800

Sir:

This Amendment A is in response to the Office Action dated 9 December 2002.

Please enter the following amendments and consider the following remarks.

02/27/2003 SDENBOB1 00000033 10068424
01 FC:2201 84.00 OP

CERTIFICATE OF MAILING 37 C.F.R. § 1.8(a)	
I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail service with sufficient postage under 37 C.F.R. § 1.8(a) on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.	
Date of Deposit: <u>2/17/03</u>	By: <u>Jana E. Walther</u>

IN THE CLAIMS:

Please amend the claims as follows. Enclosed herewith is a Clean Version of the Amended Claims incorporating the following amendments.

1. **(Hereby Cancelled).**

2. **(Hereby Cancelled).**

3. **(Hereby Cancelled).**

4. **(Hereby Cancelled).**

1. **5. (Once Amended) [The] An umbrella apparatus [according to claim 1, further] comprising:**

a base support portion;

a pole portion coupled to the base support portion;

a canopy portion hingedly coupled to the pole portion;

a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system;
and

an electrical charging system for recharging the rechargeable electrical power system, the electrical charging system being adapted to receive power from an AC power outlet.

2. ~~8.~~ (Once Amended) [The] An umbrella apparatus [according to claim 1, further] comprising:

- a base support portion;
- a pole portion coupled to the base support portion;
- a canopy portion hingedly coupled to the pole portion;
- a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system;
and

a lighting system carried by the canopy portion, the lighting system being conductively coupled to and powered by the rechargeable electrical power system.

3. ~~7.~~ (Not Amended) The umbrella apparatus according to claim ~~6~~², wherein the lighting system comprises:

- a plurality of rib members coupled to the canopy portion; and
- a plurality of cold cathode tube elements carried by the rib members, each cold cathode tube element being conductively coupled to and powered by the rechargeable electrical power source.

4. ~~8.~~ (Not Amended) The umbrella apparatus according to claim ~~6~~², wherein the lighting system comprises:

- a plurality of rib members coupled to the canopy portion; and
- a plurality of light emitting diode elements carried by the rib members, each light emitting diode element being conductively coupled to and powered by the rechargeable electrical power source.

5. ~~8.~~ (Not Amended) The umbrella apparatus according to claim ~~6~~², wherein the lighting system comprises:

- a plurality of rib members coupled to the canopy portion; and
- a plurality of fluorescent light elements carried by the rib members, each fluorescent light element being conductively coupled to and powered by the rechargeable electrical power source.

6. ~~10.~~ (Once Amended) [The] An umbrella apparatus [according to claim 1, further] comprising:

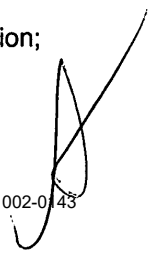
- a base support portion;
- a pole portion coupled to the base support portion;
- a canopy portion hingedly coupled to the pole portion;
- a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system;
and

an electromechanical opening and closing system for opening and closing the canopy portion, the electromechanical opening and closing system being conductively coupled to and powered by the rechargeable electrical power system.

7. ~~11.~~ (Not Amended) The umbrella apparatus according to claim ~~10~~⁴, wherein the electromechanical opening and closing system comprises:

- an electric motor carried by the pole portion;
- a control system for controlling the electric motor;
- a gear system coupled to the electric motor; and
- a cable and pulley system coupled to the gear system and the canopy portion;

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wherein the opening and closing of the canopy portion is achieved by the electric motor in response to selective operation of the control system.

8. ~~12.~~ **(Once Amended)** The umbrella apparatus according to claim ~~11~~⁷¹, wherein the control system comprises:

a receiver conductively coupled to the electric motor;
a remote transmitter for transmitting an encoded signal to the receiver; and
a decoder conductively coupled to the receiver for decoding the encoded signal [fro] ~~from~~ the transmitter.

13. **(Hereby Cancelled).**

14. **(Hereby Cancelled).**

9. ~~15.~~ **(Once Amended)** [The] ~~An~~ umbrella apparatus [according to claim 13, wherein the cooling system comprises] comprising:

a base support portion;

a pole portion coupled to the base support portion;

a canopy portion hingedly coupled to the pole portion;

a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system;
and

a cooling system carried by the canopy portion, the cooling system being conductively coupled to and powered by the rechargeable electrical power system, the cooling system comprising:

a fluid reservoir operably associated with the umbrella apparatus;

at least one mist nozzle coupled to the canopy portion, each mist nozzle being in fluid communication with the fluid;

a conduit creating fluid communication between the fluid reservoir and each mist nozzle; and

a pump for pumping the fluid from the reservoir through each mist nozzle.

¹⁰ 18. (Allowed) An umbrella apparatus comprising:

a base support portion;

a pole portion coupled to the base support portion;

a canopy portion hingedly coupled to the pole portion;

a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system; and

a combination of two or more of the following modular systems:

a lighting system carried by the canopy portion;

an electromechanical opening and closing system for opening and closing the canopy portion; or

a cooling system;

wherein each modular system is configured to be interchanged with each other, each modular system being conductively coupled to and powered by the rechargeable electrical power system.

11 17. (Allowed) The umbrella apparatus according to claim ¹⁰ 16, wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of cold cathode tube elements carried by the rib members, each cold

cathode tube element being conductively coupled to and powered by the rechargeable electrical power source.

12. ~~18.~~ ¹⁰ (Allowed) The umbrella apparatus according to claim ~~16~~, wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of light emitting diode elements carried by the rib members, each light emitting diode element being conductively coupled to and powered by the rechargeable electrical power source.

13. ~~19.~~ ¹⁰ (Allowed) The umbrella apparatus according to claim ~~16~~, wherein the cooling system comprises:

a fluid reservoir operably associated with the umbrella apparatus;

at least one mist nozzle coupled to the canopy portion, each mist nozzle being in fluid communication with the fluid;

a conduit creating fluid communication between the fluid reservoir and each mist nozzle; and

a pump for pumping the fluid from the reservoir through each mist nozzle.

14. ~~20.~~ ¹⁰ (Allowed) The umbrella apparatus according to claim ~~16~~, wherein the electromechanical opening and closing system comprises:

an electric motor carried by the pole portion;

a control system for controlling the electric motor;

a gear system coupled to the electric motor; and

a cable and pulley system coupled to the gear system and the canopy portion;

wherein the opening and closing of the canopy portion is achieved by the electric motor in response to selective operation of the control system.

REMARKS

Claims 1-20 are currently pending in the application. Claims 1, 4, 13, and 14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mueller et al. Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mueller et al. in view of Benton. Claims 5-12 and 15 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 16-20 are allowed.

Claim Objections:

Claim 12 stands objected to as containing a typographical error.

Claim 12 is hereby amended to correct the typographical error. The Applicant submits that Claim 12, as amended, is now in condition for allowance. Therefore, the Applicant respectfully requests that Claim 12, as amended, be allowed.

Claim Rejections Under 35 U.S.C. § 102(b):

Claims 1, 4, 13, and 14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mueller et al. The Examiner states that Mueller et al. disclose an umbrella having a base support portion, a pole portion coupled to the base support portion, a canopy portion hingedly coupled to the pole portion, a rechargeable electrical power system, a solar system carried by the pole portion above the canopy portion and coupled to the rechargeable electrical power system, and a cooling system having a fan carried by the canopy portion and coupled to the rechargeable electrical power system.

Claims 1, 4, 13, and 14 are hereby cancelled. However, the Applicant hereby reserves the right to file continuation applications to pursue Claims 1, 4, 13, and 14.

Claim Rejections Under 35 U.S.C. § 103(a):

Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mueller et al. in view of Benton. With regard to Claim 2, the Examiner states that Mueller et al. do not teach a rechargeable electrical power system and a solar energy system both

being carried by a housing mounted on the pole portion. The Examiner relies upon Benton for this feature, and states that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Mueller et al. umbrella apparatus by providing the rechargeable electrical power system and solar energy system as taught by Benton. With regard to Claim 3, the Examiner states that Mueller et al. do not teach a solar energy system being carried by a housing mounted on the pole portion. The Examiner relies upon Benton for this feature, and states that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Mueller et al. umbrella apparatus by providing the solar energy system carried by a housing mounted on the pole portion as taught by Benton.

Claims 2 and 3 are hereby cancelled. However, the Applicant hereby reserves the right to file continuation applications to pursue Claims 2 and 3.

Allowable Subject Matter:

Claims 5-12 and 15 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 16-20 are allowed.

The Applicant appreciates the Examiner's indication of allowability of Claims 5-12 and 15, and allowance of Claims 16-20.

Claims 5, 6, and 10 are hereby amended by rewriting them as independent claims with all of the limitations of Claim 1. Claim 15 is hereby amended by rewriting it as an independent claim with all of the limitations of Claims 1 and 13. The Applicant submits that Claims 5, 6, and 10, as amended, are now in condition for allowance. Therefore, the Applicant respectfully requests that Claims 5, 6, and 10 be allowed.

Claims 7-9 and 11 are not hereby amended. However, Claims 7-9 and 11 are dependent claims based upon allowable independent claims. As such, the Applicant submits that Claims 7-9 and 11 are allowable. Therefore, the Applicant respectfully requests that Claims 7-9 and 11 be allowed.

CONCLUSION

The subject application now contains five independent claims. Therefore, enclosed is a check in the amount of \$84.00 to cover the cost of two independent claims in excess of three (2 x \$42.00). No other fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees that are necessary, or credit any overpayments, to Deposit Account No. **50-1060**.

Respectfully submitted,

2/17/03
Date

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ATTORNEYS FOR APPLICANT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. 10/068,424

Filed: 7 FEBRUARY 2002

For: UMBRELLA APPARATUS

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Examiner: SAWHNEY, HARGOBIND S.

Art Unit: 2875

CLEAN VERSION OF THE AMENDED CLAIMS

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The following is a clean version of claims as amended by Applicant's Amendment
A filed herewith.

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MAR - 3 2003
TECHNOLOGY CENTER 2800

<p>CERTIFICATE OF MAILING 37 C.F.R. § 1.8(a)</p>
<p>I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail service with sufficient postage under 37 C.F.R. § 1.8(a) on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.</p>
<p>Date of Deposit: <u>2/17/03</u> By: <u>James E. Walther</u></p>

1. **(Hereby Cancelled).**

2. **(Hereby Cancelled).**

3. **(Hereby Cancelled).**

4. **(Hereby Cancelled).**

5. **(Once Amended)** An umbrella apparatus comprising:

a base support portion;

a pole portion coupled to the base support portion;

a canopy portion hingedly coupled to the pole portion;

a rechargeable electrical power system for providing electrical power to the

umbrella apparatus;

al cont. a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system; and

an electrical charging system for recharging the rechargeable electrical power system, the electrical charging system being adapted to receive power from an AC power outlet.

6. **(Once Amended)** An umbrella apparatus comprising:

a base support portion;

a pole portion coupled to the base support portion;

a canopy portion hingedly coupled to the pole portion;

a rechargeable electrical power system for providing electrical power to the

umbrella apparatus;

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a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system; and

a lighting system carried by the canopy portion, the lighting system being conductively coupled to and powered by the rechargeable electrical power system.

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7.

(Not Amended) The umbrella apparatus according to claim ~~6~~², wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of cold cathode tube elements carried by the rib members, each cold cathode tube element being conductively coupled to and powered by the rechargeable electrical power source.

4
8.

(Not Amended) The umbrella apparatus according to claim ~~6~~², wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of light emitting diode elements carried by the rib members, each light emitting diode element being conductively coupled to and powered by the rechargeable electrical power source.


5
9.

(Not Amended) The umbrella apparatus according to claim ~~6~~², wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of fluorescent light elements carried by the rib members, each fluorescent light element being conductively coupled to and powered by the rechargeable electrical power source.

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13. (Hereby Cancelled).

14. (Hereby Cancelled).

9 15. (Once Amended) An umbrella apparatus comprising:

- a base support portion;
- a pole portion coupled to the base support portion;
- a canopy portion hingedly coupled to the pole portion;
- a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

A2

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system; and

a cooling system carried by the canopy portion, the cooling system being conductively coupled to and powered by the rechargeable electrical power system, the cooling system comprising;

- a fluid reservoir operably associated with the umbrella apparatus;
- at least one mist nozzle coupled to the canopy portion, each mist nozzle being in fluid communication with the fluid;
- a conduit creating fluid communication between the fluid reservoir and each mist nozzle; and
- a pump for pumping the fluid from the reservoir through each mist nozzle.

16. (Allowed) An umbrella apparatus comprising:

- a base support portion;
- a pole portion coupled to the base support portion;
- a canopy portion hingedly coupled to the pole portion;

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6
10. **(Once Amended)** An umbrella apparatus comprising:
a base support portion;
a pole portion coupled to the base support portion;
a canopy portion hingedly coupled to the pole portion;
a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

ai a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system; and

an electromechanical opening and closing system for opening and closing the canopy portion, the electromechanical opening and closing system being conductively coupled to and powered by the rechargeable electrical power system.

7
11. **(Not Amended)** The umbrella apparatus according to claim 10, wherein the electromechanical opening and closing system comprises:

an electric motor carried by the pole portion;
a control system for controlling the electric motor;
a gear system coupled to the electric motor; and
a cable and pulley system coupled to the gear system and the canopy portion;
wherein the opening and closing of the canopy portion is achieved by the electric motor in response to selective operation of the control system.

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12. **(Once Amended)** The umbrella apparatus according to claim 11, wherein the control system comprises:

a receiver conductively coupled to the electric motor;
a remote transmitter for transmitting an encoded signal to the receiver; and
a decoder conductively coupled to the receiver for decoding the encoded signal
from the transmitter.

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a rechargeable electrical power system for providing electrical power to the umbrella apparatus;

a solar energy system carried by the pole portion above the canopy portion, the solar energy system being adapted to collect solar energy and convert the solar energy into electrical energy, the solar energy system being conductively coupled to the rechargeable electrical power system, such that the solar energy collected and converted into electrical energy recharges the rechargeable electrical power system; and

a combination of two or more of the following modular systems:

a lighting system carried by the canopy portion;

an electromechanical opening and closing system for opening and closing the canopy portion; or

a cooling system;

wherein each modular system is configured to be interchanged with each other, each modular system being conductively coupled to and powered by the rechargeable electrical power system.

17. **(Allowed)** The umbrella apparatus according to claim 16, wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of cold cathode tube elements carried by the rib members, each cold cathode tube element being conductively coupled to and powered by the rechargeable electrical power source.

18. **(Allowed)** The umbrella apparatus according to claim 16, wherein the lighting system comprises:

a plurality of rib members coupled to the canopy portion; and

a plurality of light emitting diode elements carried by the rib members, each light emitting diode element being conductively coupled to and powered by the rechargeable electrical power source.

19. **(Allowed)** The umbrella apparatus according to claim 16, wherein the cooling system comprises:

a fluid reservoir operably associated with the umbrella apparatus;

at least one mist nozzle coupled to the canopy portion, each mist nozzle being in fluid communication with the fluid;

a conduit creating fluid communication between the fluid reservoir and each mist nozzle; and

a pump for pumping the fluid from the reservoir through each mist nozzle.

20. **(Allowed)** The umbrella apparatus according to claim 16, wherein the electromechanical opening and closing system comprises:

an electric motor carried by the pole portion;

a control system for controlling the electric motor;

a gear system coupled to the electric motor; and

a cable and pulley system coupled to the gear system and the canopy portion;

wherein the opening and closing of the canopy portion is achieved by the electric motor in response to selective operation of the control system.

Applicant's Amendment A is filed herewith. Enclosed is a check in the amount of \$84.00 to cover the cost of two independent claims in excess of three (2 x \$42.00). No other fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees that are necessary, or credit any overpayments, to Deposit Account No. 50-1060.

Respectfully submitted,

2/17/03
Date

James E. Walton
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ATTORNEYS FOR APPLICANT



CP 2875

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. 10/068,424

Filed: 7 FEBRUARY 2002

For: **UMBRELLA APPARATUS**

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§
§
§
§
§
§

Examiner: **SAWHNEY, HARGOBIND S.**

Art Unit: 2875

RECEIVED
MAR - 3 2003
TECHNOLOGY CENTER 2800

TRANSMITTAL

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please file the following enclosed documents in the subject application:

1. This Transmittal with Certificate of Mailing;
2. Amendment A;
3. Clean Version of the Amended Claims;
4. Our check in the amount of \$84.00 to cover the cost of two independent claims in excess of three (2 x \$42.00); and
5. Our return postcard which we would appreciate you date stamping and returning to us.

CERTIFICATE OF MAILING 37 C.F.R. § 1.8(a)
I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail service with sufficient postage under 37 C.F.R. § 1.8(a) on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.
Date of Deposit: <u>2/17/03</u> By: <u>Jana E. Walters</u>

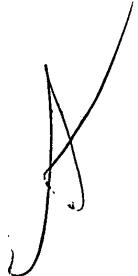
Enclosed is a check in the amount of \$84.00 to cover the cost of two independent claims in excess of three (2 x \$42.00). No other fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees that are necessary, or credit any overpayments, to Deposit Account No. **50-1060**.

Respectfully submitted,

2/17/03
Date

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ATTORNEYS FOR APPLICANT



	Type	Hits	Search Text	DBs
1	BRS	2710 3	solar adj (power or energy)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
2	BRS	957	((solar adj (power or energy)) and (recharg\$5 with (electrical or batter\$4)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
3	BRS	10	((solar adj (power or energy)) and (recharg\$5 with (electrical or batter\$4))) and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
4	BRS	1679 4	umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
5	BRS	66	(solar adj (power or energy)) and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
6	BRS	2242 5	recharg\$6 adj batter\$4	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
7	BRS	708	(solar adj (power or energy)) and (recharg\$6 adj batter\$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
8	BRS	7	umbrella and ((solar adj (power or energy)) and (recharg\$6 adj batter\$4))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
9	BRS	163	umbrella and 362/\$.cccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
10	BRS	5	("5007811" "5172711" "5273062" "5711331" "5765582").PN.	USPAT
11	BRS	9	("1148332" "14532802" "1555579" "2547896" "2627217" "2729220" "3177881" "4154255" "5007811").PN.	USPAT
12	BRS	20	("1148332" "1173665" "1555579" "1683270" "2627217" "2729220" "2817281" "3102547" "3177881" "3318560" "3444799" "4154255" "4628791" "4753411" "4850564" "4867187" "4915670" "5007811" "5161561" "5172711").PN.	USPAT
13	BRS	4	(umbrella and 362/\$.cccls.) and (solar adj (power or energy))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
14	BRS	448	362/96.cccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
15	BRS	11	362/96.cccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
16	BRS	4	362/102.cccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
17	BRS	59	362/102.cccls. and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
18	BRS	4	362/577.cccls. and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
19	BRS	1	362/577.cccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
20	BRS	0	362/577.cccls. and solar and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
21	BRS	0	362/209.cccls. and solar and umbrella	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
22	BRS	5	362/209.cccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
23	BRS	34	362/276.cccls. and solar	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
24	IS&R	2	("5172711").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
25	IS&R	2	("5349975").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
26	IS&R	2	("5463536").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
27	IS&R	2	("5172711").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
28	IS&R	2	("5273062").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

YOT-1002-0160

03/17/2003, EAST Version: 1.03.0002

	Type	Hits	Search Text	DBs
29	IS&R	2	("6017188").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
30	IS&R	8	("1148332").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
31	IS&R	6	((("6017188") or ("5273062") or ("5172711")).PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
32	BRS	0	362/209.ccls. and @pd > "20021201"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
33	BRS	13	362/96.ccls. and @pd > "20021201"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
34	BRS	28	362/276.ccls. and @pd > "20021201"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
35	BRS	3	362/577.ccls. and @pd > "20021201"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
36	BRS	6	362/102.ccls. and @pd > "20021201"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

YOT-1002-0161

03/17/2003, EAST Version: 1.03.0002

Notice of Allowability	Application No.	Applicant(s)	
	10/068,424	KUELBS, GREGORY G.	
	Examiner	Art Unit	
	Hargobind S Sawhney	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to the amendment filed on February 24, 2003.
 2. The allowed claim(s) is/are 5-12 and 15-20.
 3. The drawings filed on _____ are accepted by the Examiner.
 4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some* c) None of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) The translation of the foreign language provisional application has been received.
 6. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 8. CORRECTED DRAWINGS must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No. _____.
 - (b) including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

9. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____ | 6 <input type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

1. The amendment filed on February 24, 2003 has been entered. Accordingly:
 - Claims 1-4,13 and 14 have been cancelled; and
 - Claims 5,6,10,12 and 15 have been amended

Allowable Subject Matter

2. Claims 5-12 and 15-20 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The umbrella apparatus disclosed by the applicant generally comprises:

- a base support portion;
- a pole portion coupled to the base support portion, a canopy portion hingedly coupled to the pole portion, a rechargeable electric power system providing electrical power to the umbrella apparatus;
- a solar energy system carried by the pole portion, and being positioned above the canopy portion for collecting solar energy and converting it into electrical energy;
- the solar energy system being conductively coupled to the rechargeable batteries;
- a cooling system carried by the canopy portion, and electrically coupled to the rechargeable electrical power system; and
- the cooling system powered by electrical power system.

YOT-1002-0163

- the cooling system powered by electrical power system.

The prior art of record, including Mueller et al. (U.S. Patent No. 5,172,711) and Benton (U.S. Patent No. 6,017,188), does not show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not disclose proper motivation for combining:

- a rechargeable electrical power system rechargeable from an AC power outlet as recited in Claim 5;
- a lighting system carried by the canopy portion, and being powered by the rechargeable electrical power source as recited in Claim 6;
- an electromechanical opening and closing the canopy as recited in Claim 10; and
- a cooling system a fluid reservoir, a mist nozzle hydraulically coupled to a pump as recited in Claim 15.

Claims 7-9 are necessarily objected because of their dependency on the objected base Claim 6.

Claim 11 and 12 are necessarily objected because of their dependency on the objected base Claim 10;

Claims 17-20 are necessarily objected because of their dependency on the objected base Claim 16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

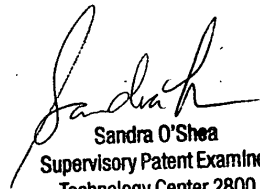
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is 703-306-5909. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 703-305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-93187724 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS

3/17/2003


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 03/20/2003
James E. Walton
HILL & HUNN, LLP
Suite 1440
201 Main Street
Fort Worth, TX 76102-3105

EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT CLASS-SUBCLASS

2875 362-102000

DATE MAILED: 03/20/2003

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
10/068,424 02/07/2002 Gregory G. Kuelbs 0638MH-40982-US 9580

TITLE OF INVENTION: UMBRELLA APPARATUS

Table with 6 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE, PUBLICATION FEE, TOTAL FEE(S) DUE, DATE DUE
nonprovisional YES \$650 \$0 \$650 06/20/2003

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

[] Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Box ISSUE FEE
Commissioner for Patents
Washington, D.C. 20231
Fax **(703)746-4000****

INSTRUCTIONS: This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

7590 03/20/2003

James E. Walton
 HILL & HUNN, LLP
 Suite 1440
 201 Main Street
 Fort Worth, TX 76102-3105

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,424	02/07/2002	Gregory G. Kuelbs	0638MH-40982-US	9580

TITLE OF INVENTION: UMBRELLA APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$650	\$0	\$650	06/20/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAWHNEY, HARGOBIND S	2875	362-102000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) individual corporation or other private group entity government

4a. The following fee(s) are enclosed:

- Issue Fee
- Publication Fee
- Advance Order - # of Copies _____

4b. Payment of Fee(s):

- A check in the amount of the fee(s) is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)

(Date)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMIT THIS FORM WITH FEE(S)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,424	02/07/2002	Gregory G. Kuelbs	0638MH-40982-US	9580
	7590 03/20/2003		EXAMINER	
James E. Walton HILL & HUNN, LLP Suite 1440 201 Main Street Fort Worth, TX 76102-3105			SAWHNEY, HARGOBIND S	
			ART UNIT	PAPER NUMBER
			2875	
			DATE MAILED: 03/20/2003	

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The patent term adjustment to date is 0 days. If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the term adjustment will be 0 days.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (<http://pair.uspto.gov>)

Any questions regarding the patent term extension or adjustment determination should be directed to the Office of Patent Legal Administration at (703)305-1383.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 10/068,424, 02/07/2002, Gregory G. Kuelbs, 0638MH-40982-US, 9580
Row 2: 7590, 03/20/2003, (empty), (empty), (empty)
Text: James E. Walton, HILL & HUNN, LLP, Suite 1440, 201 Main Street, Fort Worth, TX 76102-3105, UNITED STATES
Text: EXAMINER SAWHNEY, HARGOBIND S
Text: ART UNIT 2875, PAPER NUMBER
Text: DATE MAILED: 03/20/2003

Notice of Fee Increase on January 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after January 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on January 1, 2003. See Revision of Patent and Trademark Fees for Fiscal Year 2003; Final Rule, 67 Fed. Reg. 70847, 70849 (November 27, 2002).

The current fee schedule is accessible from: http://www.uspto.gov/main/howtofees.htm.

If the issue fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due," but not the correct amount in view of the fee increase, a "Notice to Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice to Pay Balance of Issue Fee," if the response to the Notice of Allowance and Fee(s) due form is to be filed on or after January 1, 2003 (or mailed with a certificate of mailing on or after January 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

**NOTICE OF DRAFTSPERSON'S
PATENT DRAWING REVIEW**

The drawing(s) filed (insert date 2/7/02):

- A. approved by the Draftsperson under 37 CFR 1.84 or 1.152.
 B. objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be submitted according to the instructions on the back of this notice.

<p>1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color. ___ Color drawings are not acceptable until petition is granted. Fig(s) _____ ___ Pencil and non black ink not permitted. Fig(s) _____</p> <p>2. PHOTOGRAPHS. 37 CFR 1.84(b) ___ 1 full-tone set is required. Fig(s) _____ ___ Photographs may not be mounted. 37 CFR 1.84(e) ___ Poor quality (half-tone). Fig(s) _____</p> <p>3. TYPE OF PAPER. 37 CFR 1.84(e) ___ Paper not flexible, strong, white, and durable. Fig(s) _____ ___ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) _____ ___ Mylar, velum paper is not acceptable (too thin). Fig(s) _____</p> <p>4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes: ___ 21.0 cm by 29.7 cm (DIN size A4) ___ 21.6 cm by 27.9 cm (8 1/2 x 11 inches) ___ All drawing sheets not the same size. Sheet(s) _____ ___ Drawings sheets not an acceptable size. Fig(s) _____</p> <p>5. MARGINS. 37 CFR 1.84(g): Acceptable margins: Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11 Margins not acceptable. Fig(s) _____ Top (T) _____ Left (L) _____ Right (R) _____ Bottom (B) _____</p> <p>6. VIEWS. 37 CFR 1.84(h) REMINDER: Specification may require revision to correspond to drawing changes. Partial views. 37 CFR 1.84(h)(2) ___ Brackets needed to show figure as one entity. Fig(s) _____ ___ Views not labeled separately or properly. Fig(s) _____ ___ Enlarged view not labeled separately or properly. Fig(s) _____</p> <p>7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3) ___ Hatching not indicated for sectional portions of an object. Fig(s) _____ ___ Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____</p>	<p>8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i) ___ Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) <u>10/3005</u></p> <p>9. SCALE. 37 CFR 1.84(k) ___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) _____</p> <p>10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l) ___ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality). Fig(s) <u>10/1</u></p> <p>11. SHADING. 37 CFR 1.84(m) ___ Solid black areas pale. Fig(s) _____ ___ Solid black shading not permitted. Fig(s) _____ ___ Shaded lines, pale, rough and blurred. Fig(s) _____</p> <p>12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(n) ___ Numbers and reference characters not plain and legible. Fig(s) <u>10/1</u> ___ Figure legends are poor. Fig(s) _____ ___ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1) Fig(s) _____ ___ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s) _____ ___ Numbers, letters and reference characters must be at least 32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) _____</p> <p>13. LEAD LINES. 37 CFR 1.84(q) ___ Lead lines cross each other. Fig(s) _____ ___ Lead lines missing. Fig(s) _____</p> <p>14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t) ___ Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) _____</p> <p>15. NUMBERING OF VIEWS. 37 CFR 1.84(u) ___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____</p> <p>16. CORRECTIONS. 37 CFR 1.84(w) ___ Corrections not made from prior PTO-948 dated _____</p> <p>17. DESIGN DRAWINGS. 37 CFR 1.152 ___ Surface shading shown not appropriate. Fig(s) _____ ___ Solid black shading not used for color contrast. Fig(s) _____</p>
<p>COMMENTS</p>	

REVIEWER _____

DATE 3/17/03

TELEPHONE NO. 7033058484

ATTACHMENT TO PAPER NO. 5

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YOT-1002-0170

MSH/SL/01

REMINDER

Drawing changes may also require changes in the specification, e.g., if Fig. 1 is changed to Fig. 1A, Fig. 1B, Fig. 1C, etc., the specification, at the Brief Description of the Drawing, must likewise be changed. Please make such changes by 37 CFR 1.312 Amendment at the time of submitting drawings.

SL/SL

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Drawings - 37 CFR 1.85

File new drawings with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Review Branch.

2. Timing for Corrections

Applicant is required to submit acceptable corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37).

Failure to take corrective action within set period will result in **ABANDONMENT** of the Application.

3. Corrections other than Defects Noted by the Drawing Review Branch on the Form PTO-948

All changes to the drawings, other than defects noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted other than correction of defects, unless the examiner has approved the proposed changes.

MSH/SL/01

DATE 5/17/95

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Approved
Lawmey
7/3/03

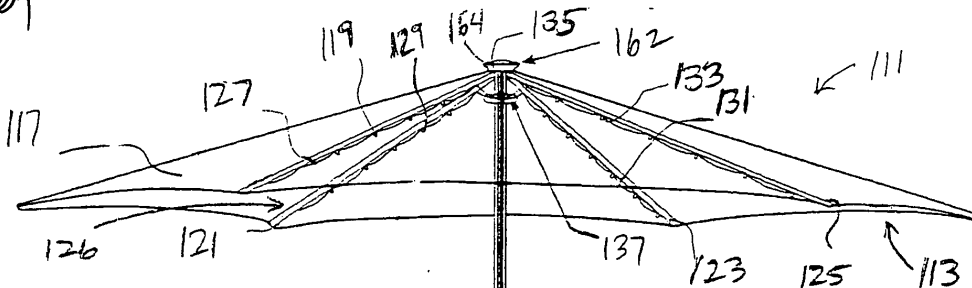


FIGURE 2B

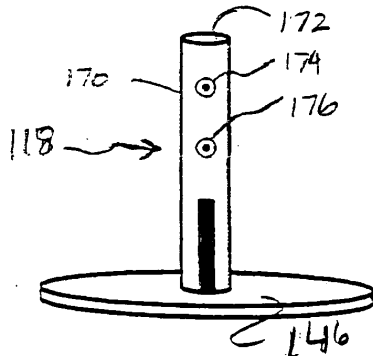
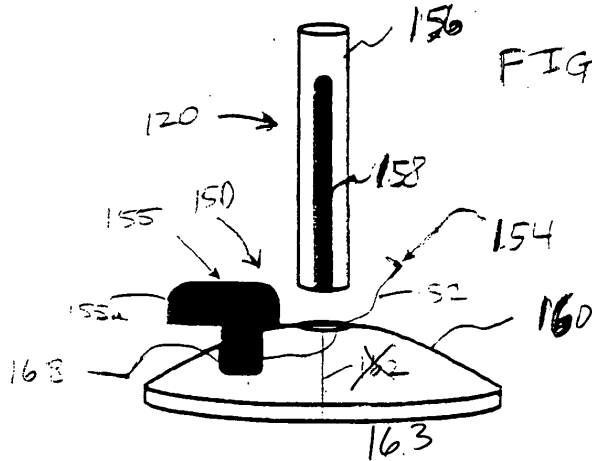


FIGURE 2A

FIGURE 2C



YOT-1002-0172

O.I.P.E. JCT. 102
 JUN 10 2003
 PATENT & TRADEMARK OFFICE

*Approved
 @ Sawhney
 7/23/03*

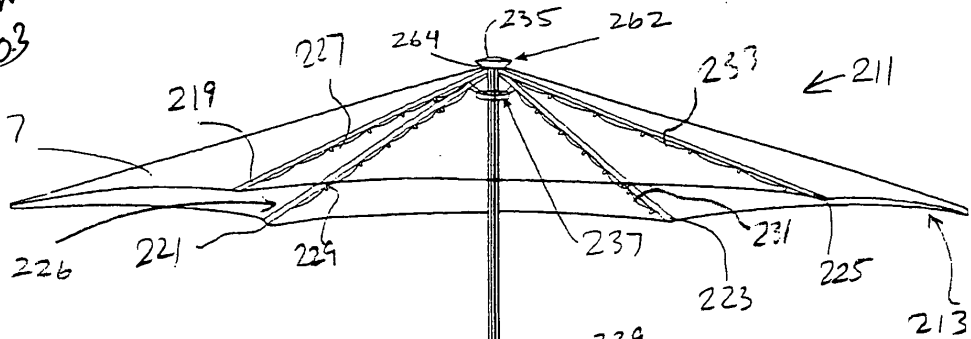


FIGURE 3A

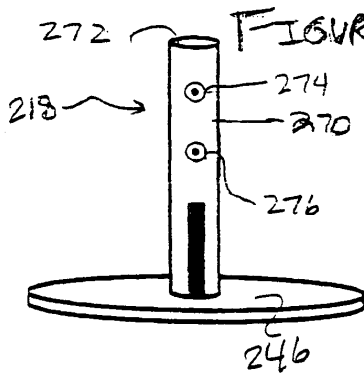


FIGURE 3B

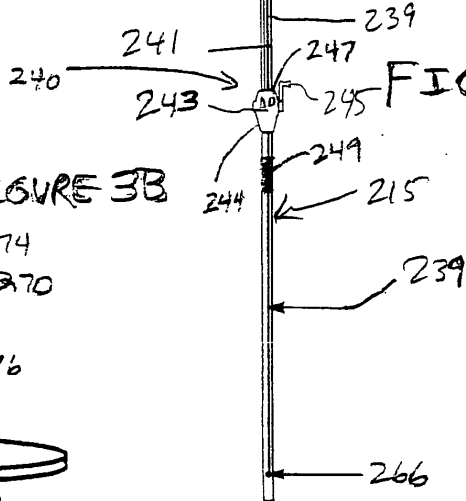
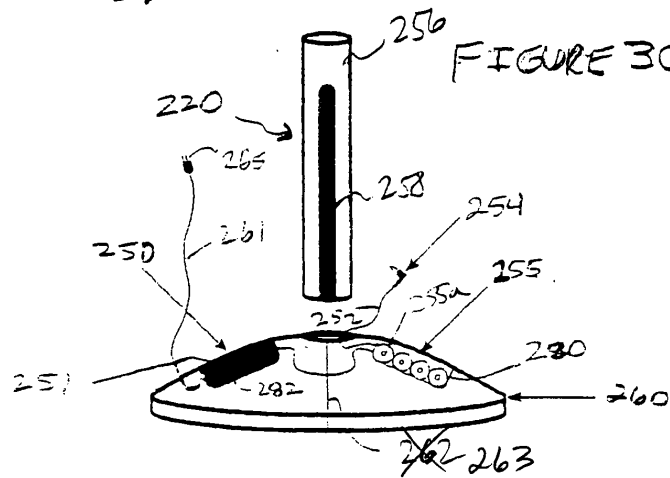


FIGURE 3C



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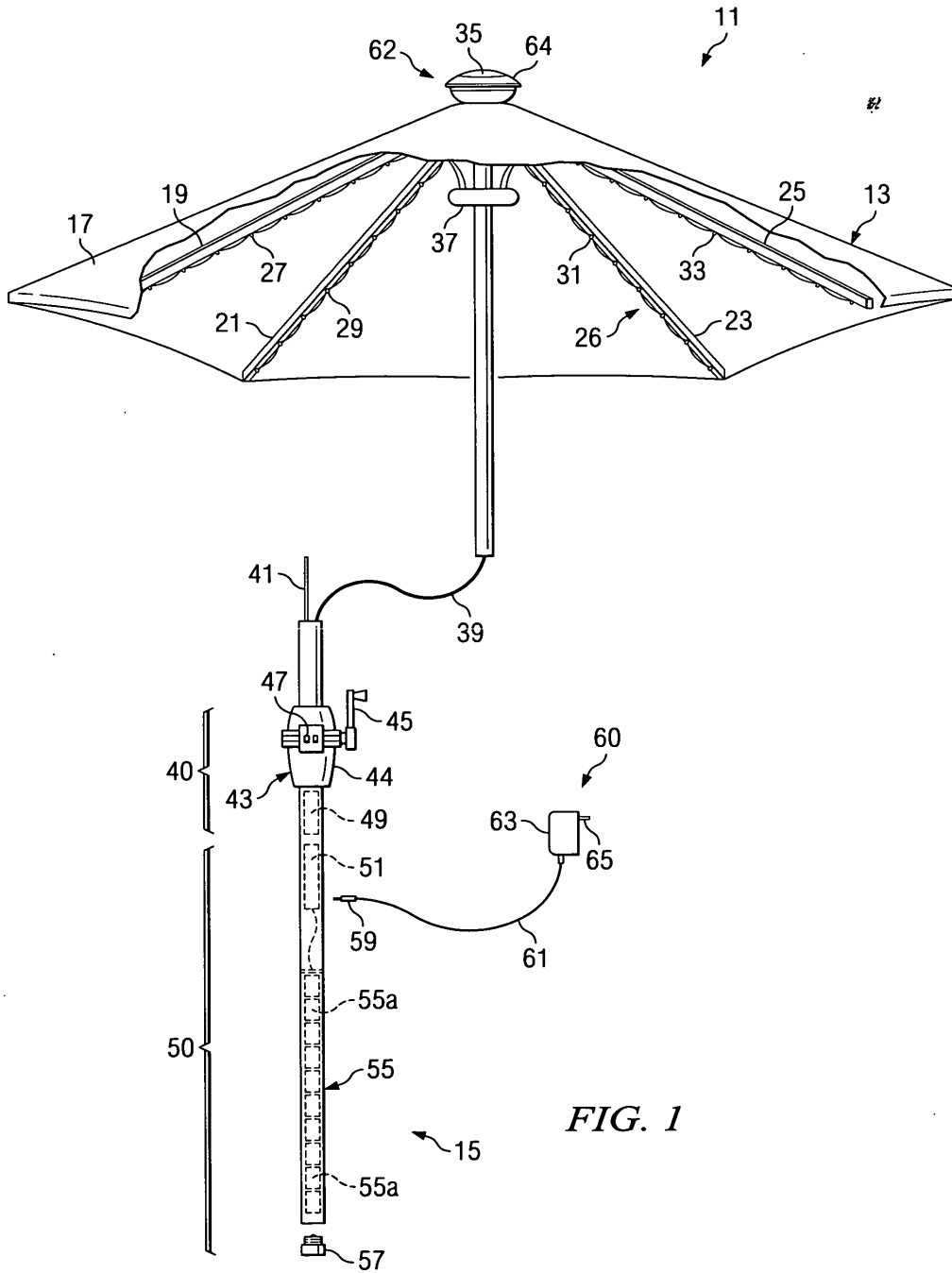


FIG. 1

YOT-1002-0174



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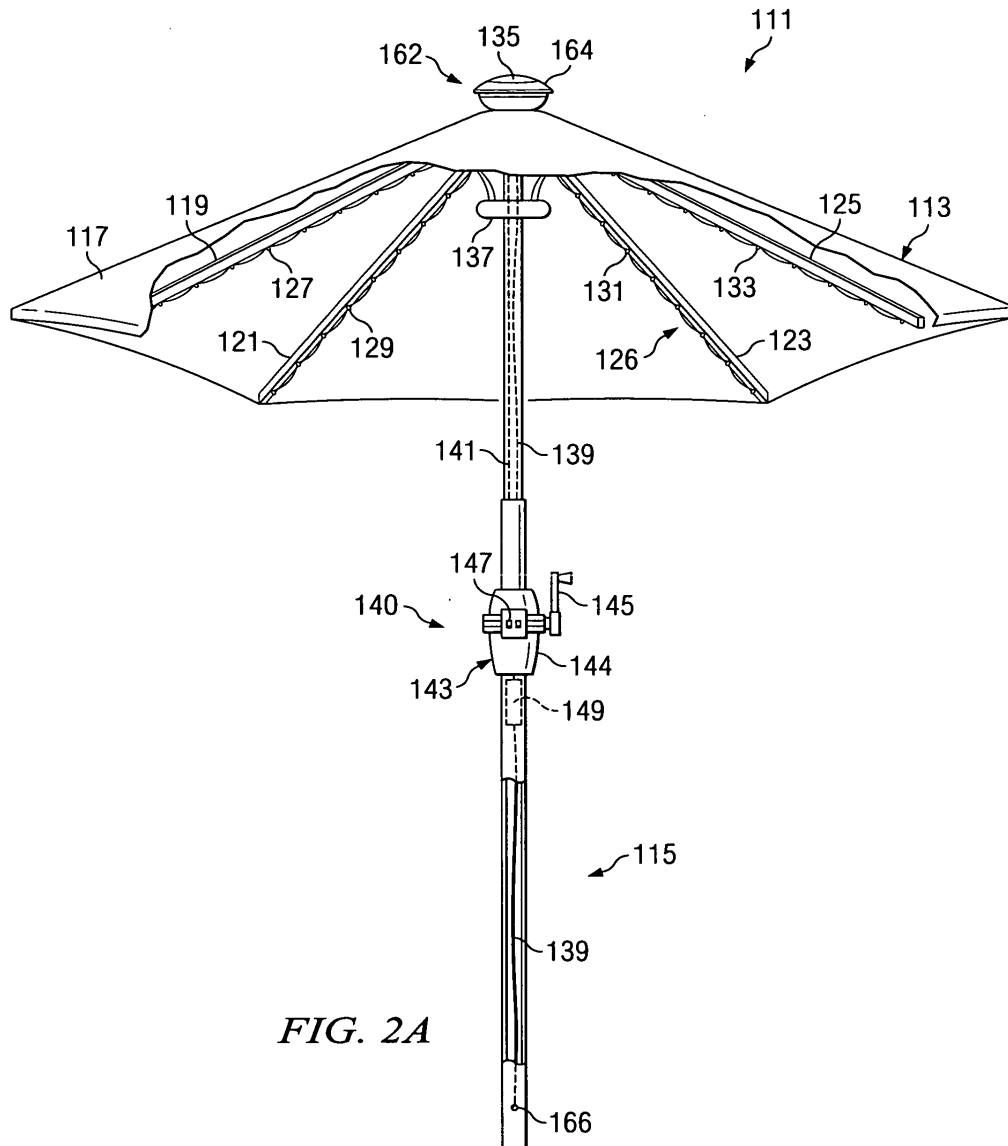


FIG. 2A

YOT-1002-0175

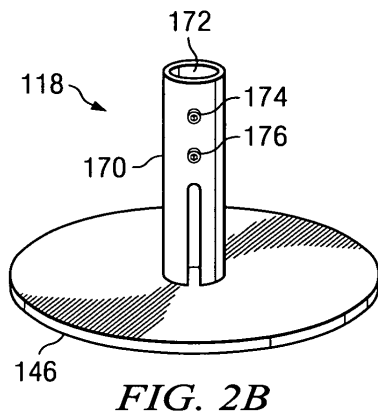


FIG. 2B

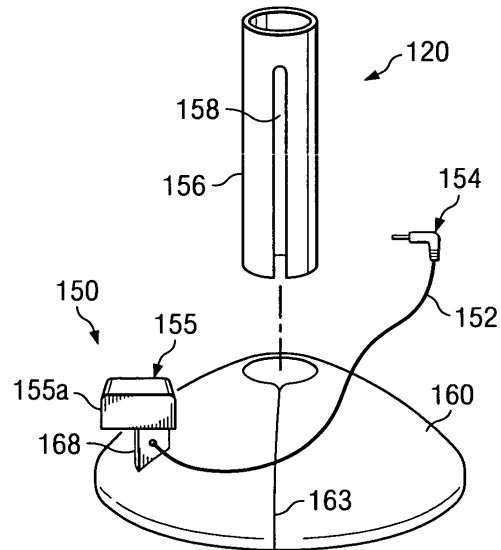


FIG. 2C

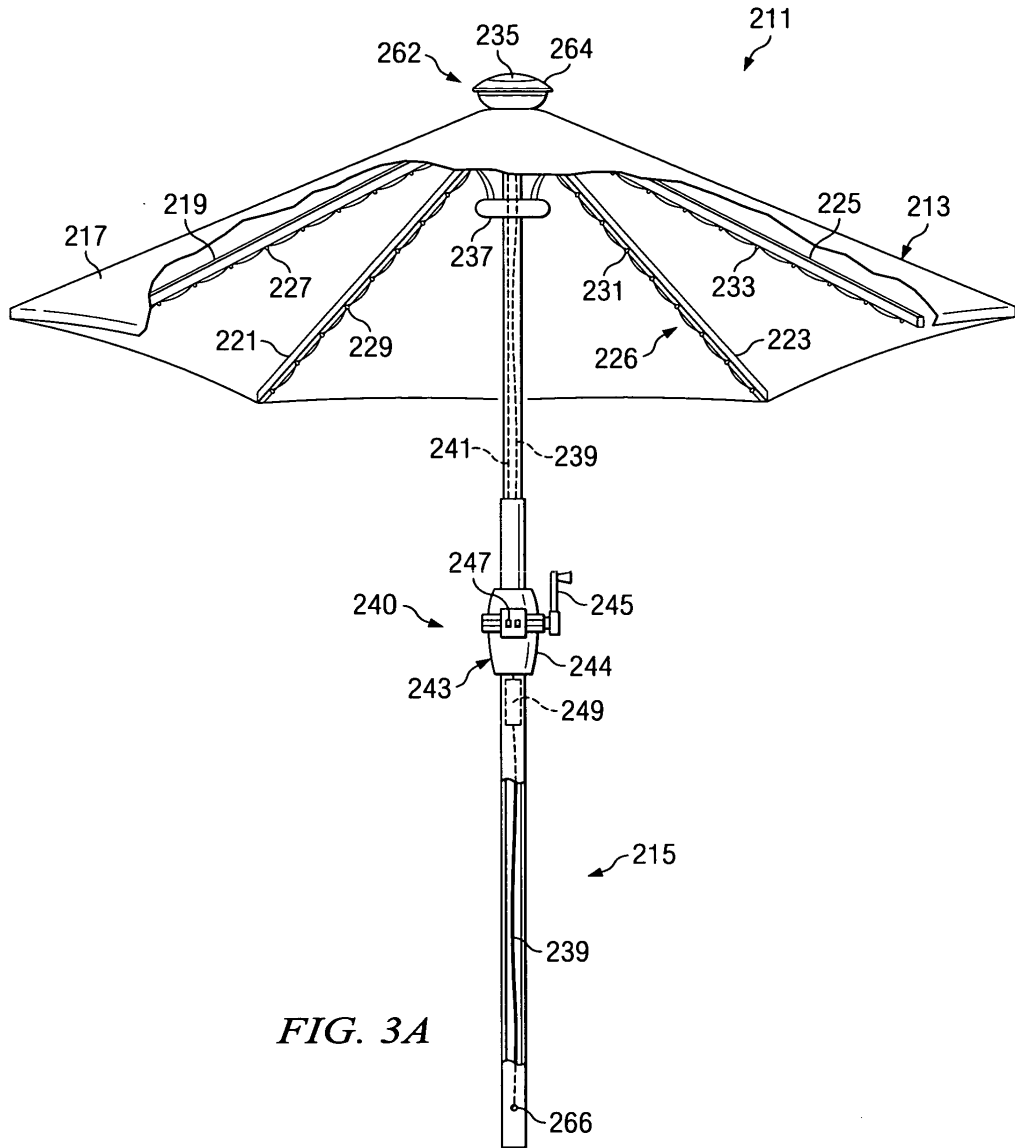


FIG. 3A

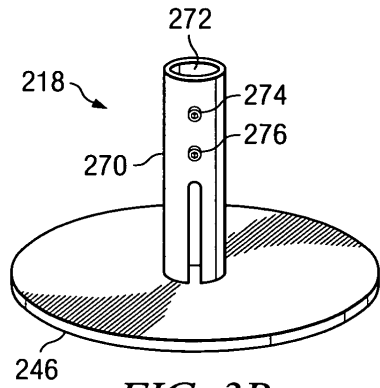


FIG. 3B

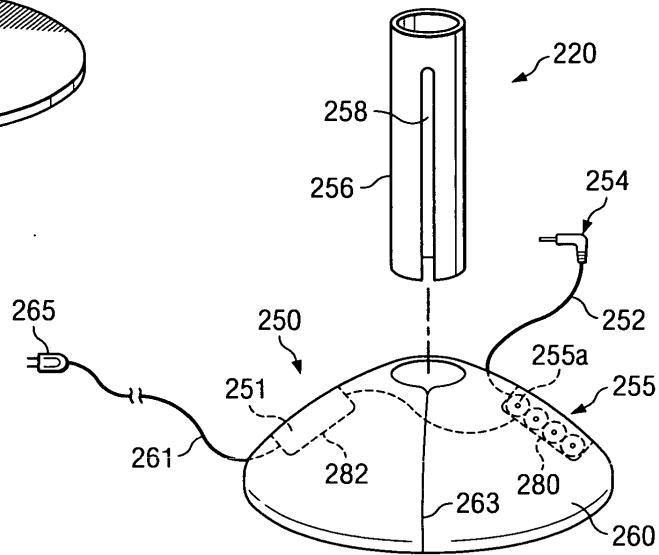


FIG. 3C

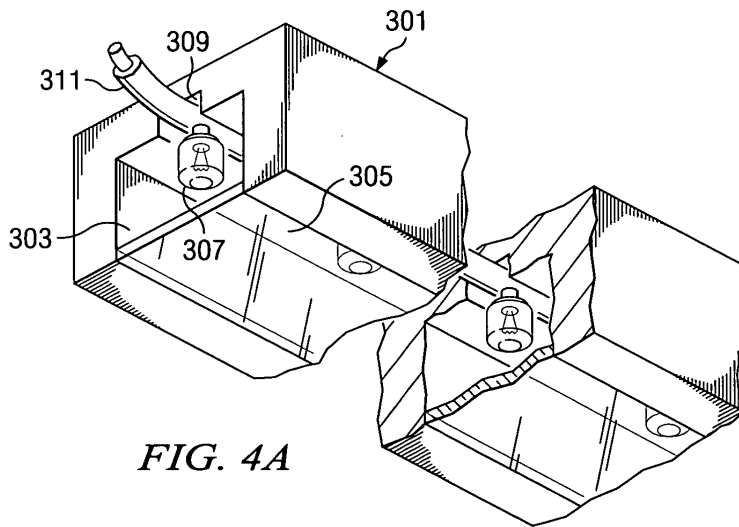


FIG. 4A

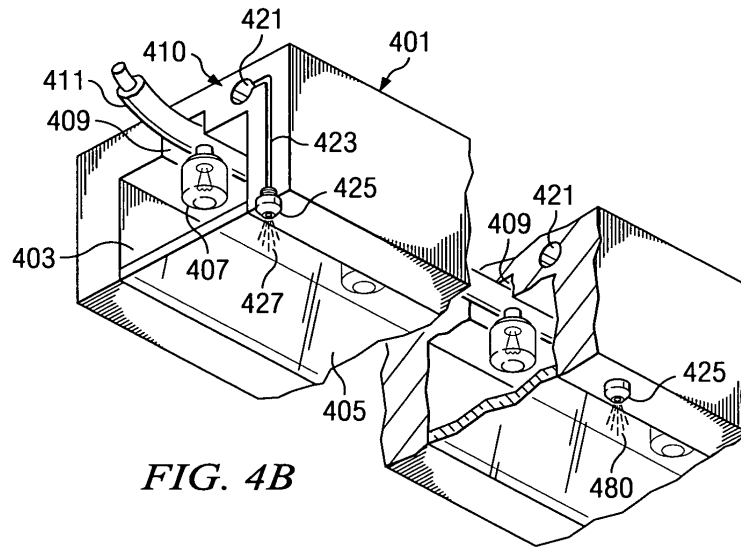


FIG. 4B

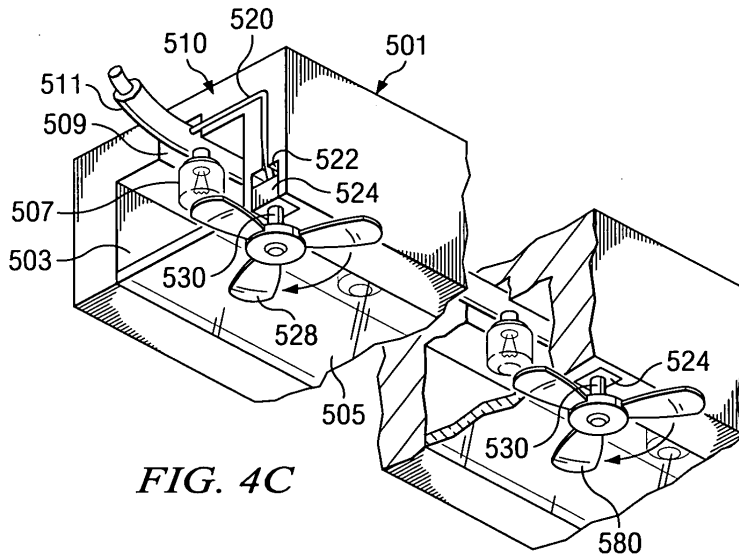


FIG. 4C

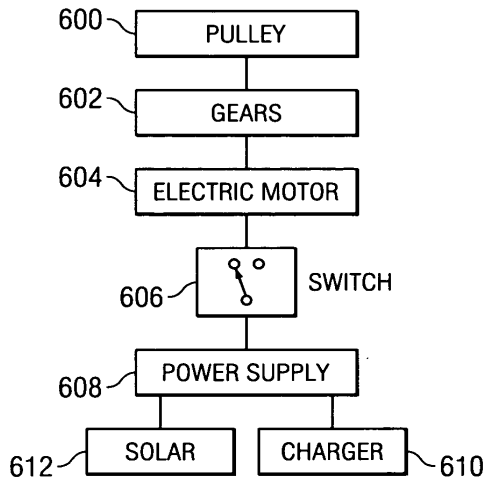


FIG. 5A

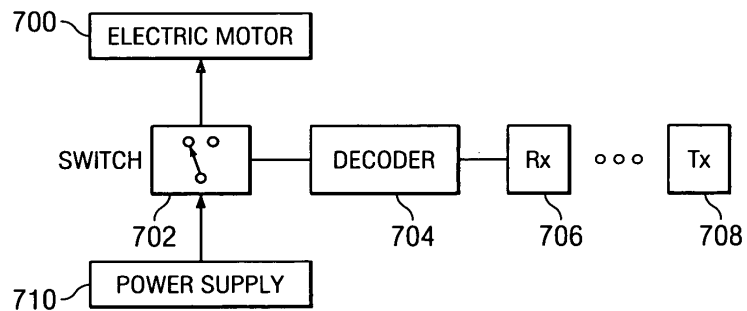


FIG. 5B



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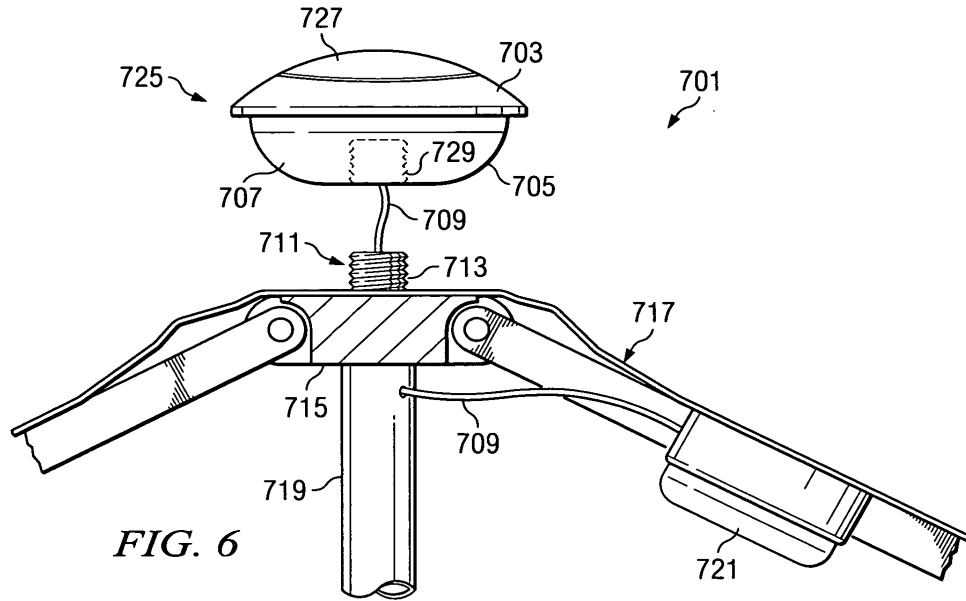


FIG. 6

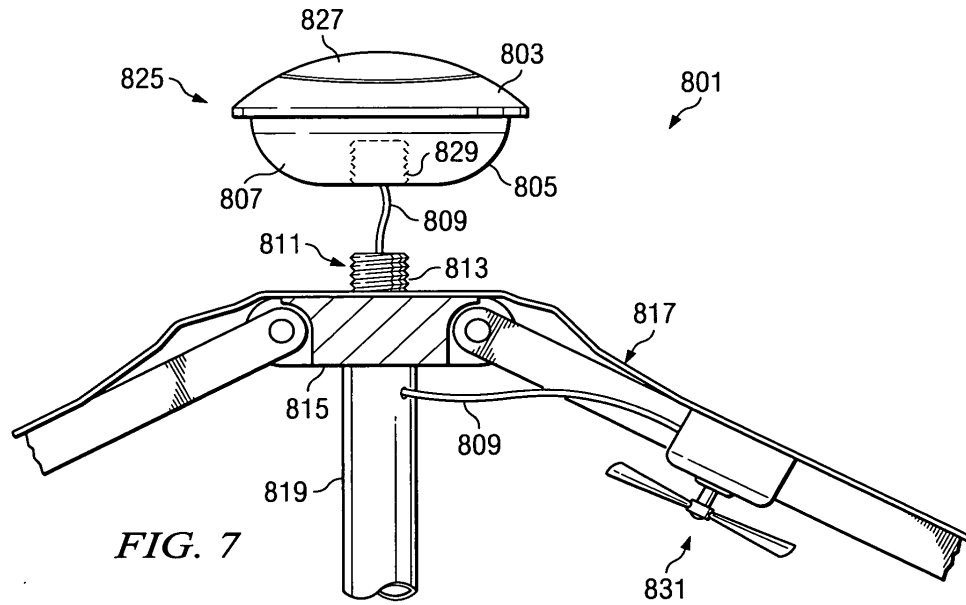


FIG. 7

YOT-1002-0181



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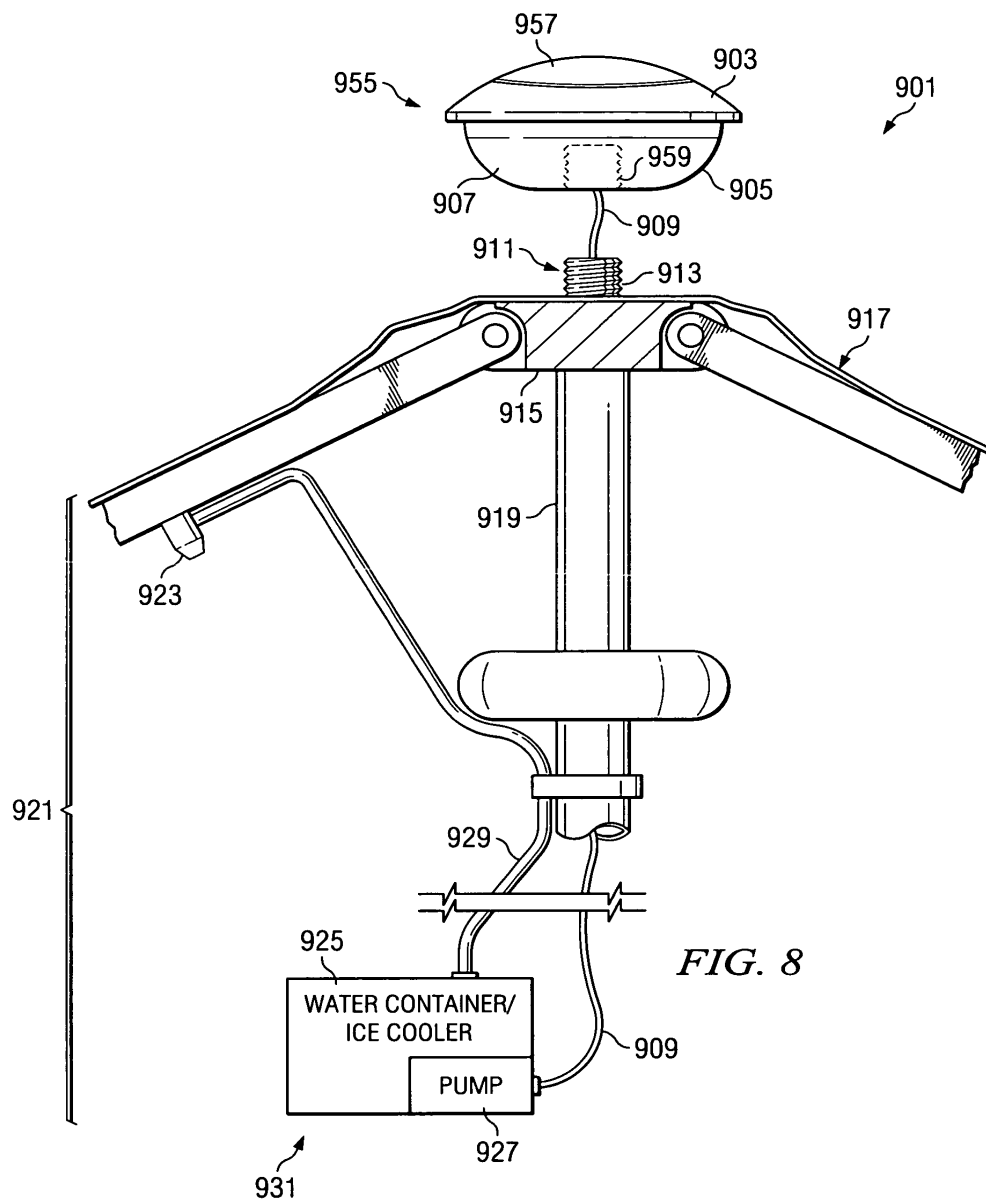


FIG. 8

YOT-1002-0182



0638MH-40982-US

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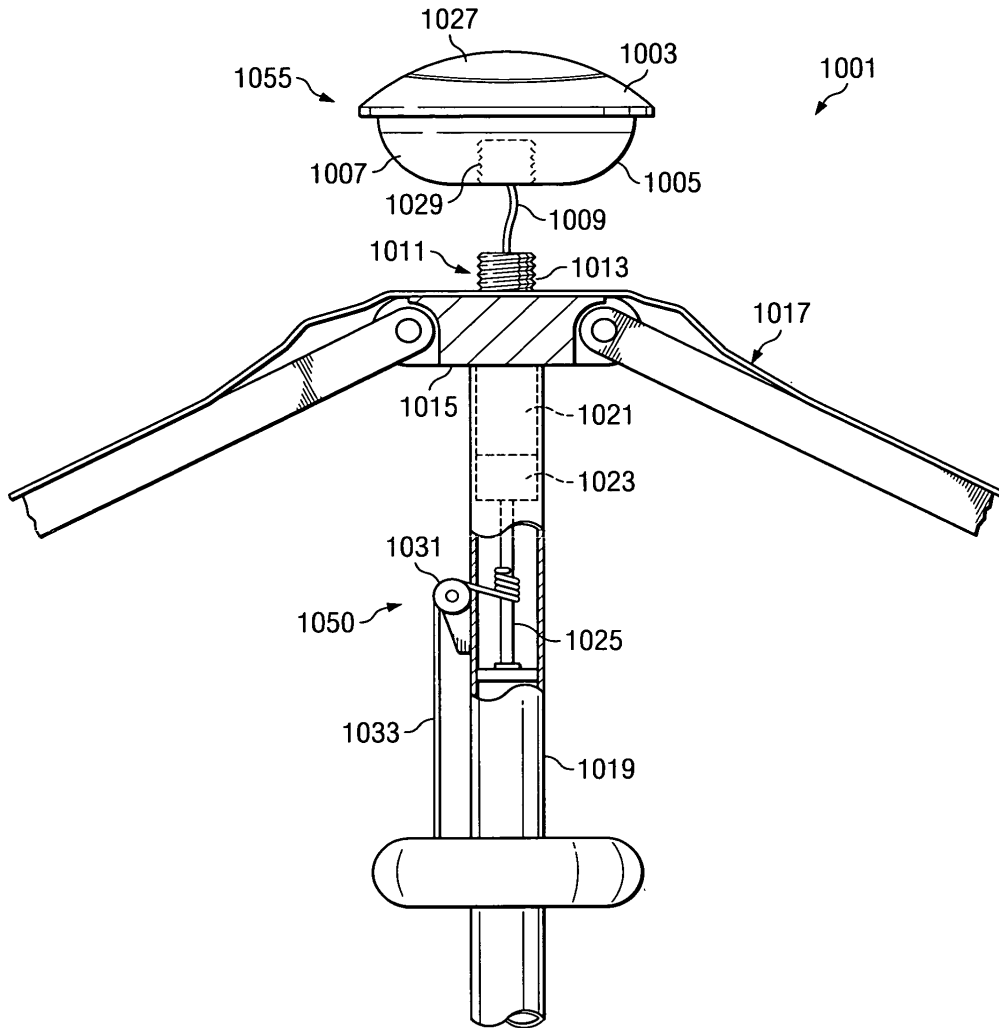


FIG. 9

YOT-1002-0183

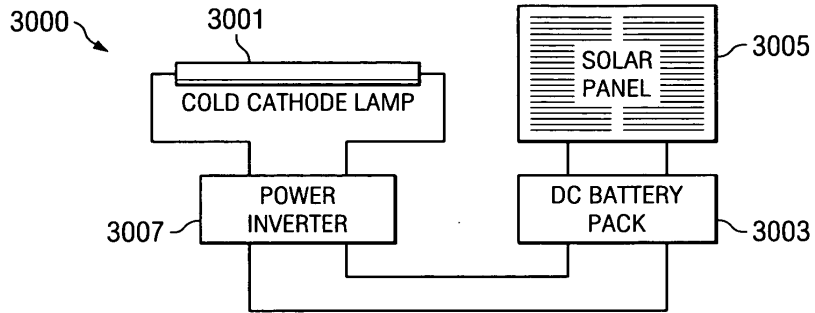


FIG. 10

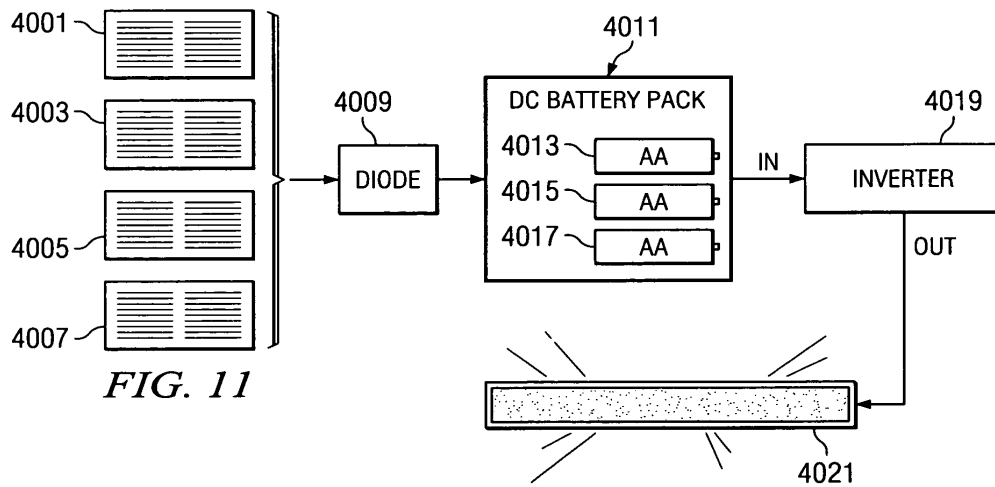


FIG. 11



g

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#7 / Amndt B
7/17/03
C. P. ...
7/24/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of: **GREGORY G. KUELBS**
Serial No. **10/068,424**
Filed: **7 FEBRUARY 2002**
For: **UMBRELLA APPARATUS**

§
§
§
§
§
§
§
§
§
§

Examiner: **SAWHNEY, HARGOBIND S.**

Art Unit: **2875**

AMENDMENT AFTER ALLOWANCE UNDER 37 C.F.R. § 1.312

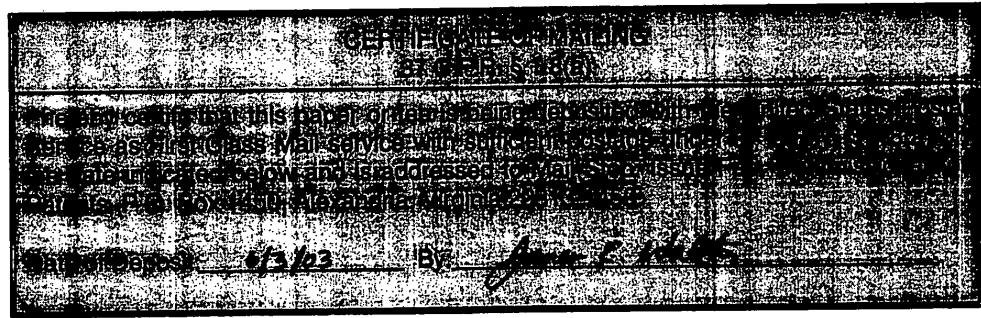
MAIL STOP: ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Match and Return

Sir:

This Amendment After Allowance is filed to correct a clerical error in the drawings. Part B of Form PTOL-85 is filed herewith along with the Issue Fee.

Please enter the following amendments, consider the following remarks, and issue the subject application.



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YOT-1002-0185

IN THE SPECIFICATION:

Please enter the following amendments to the Specification:

1. On page 13, line 3, change "162" to ~~-163-~~.
2. On page 16, line 19, change "262" to ~~-263-~~.

*Approved
B. Stacey
7/23/03*

A Marked-Up Version of the Amended Paragraphs in the Specification in which the foregoing amendments are designated is filed herewith.

The Applicant submits that the following amendments add no new matter to the application. In addition, the Applicant submits that the amendments proposed herein will not cause any undue burden on the Office.

IN THE DRAWINGS:

Please make the following changes in the drawings:

1. In Figure 2C, change reference numeral "162" to -163--.
2. In Figure 3C, change reference numeral "262" to -263--.

Two sheets of drawings with the foregoing proposed changes to Figures 2C and 3C marked in red ink are enclosed herewith.

Also enclosed are 11 sheets of formal drawings in which the foregoing changes to Figures 2C and 3C have been incorporated. Two paragraphs in the Specification are hereby amended to conform to the foregoing changes in the drawings.

The Applicant submits that the following amendments add no new matter to the application. In addition, the Applicant submits that the amendments proposed herein will not cause any undue burden on the Office.

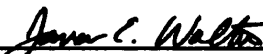
*Approved
Examiner:
H. S. Eastman
7/23/2003*

REMARKS

The Issue Fee is paid herewith. No other fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees that are necessary, and credit any overpayments, to Deposit Account No. 50-1060.

Respectfully submitted,

6/3/03
Date


James E. Walton, Reg. No. 47,245
Kenneth C. Hill, Reg. No. 29,650
Melvin A. Hunn, Reg. No. 32,574
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jimwalton@hillandhunn.com (e-mail)
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melhunn@hillandhunn.com (e-mail)

ATTORNEYS FOR APPLICANT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. 10/068,424

Filed: 7 FEBRUARY 2002

For: **UMBRELLA APPARATUS**

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Examiner: **SAWHNEY, HARGOBIND S.**

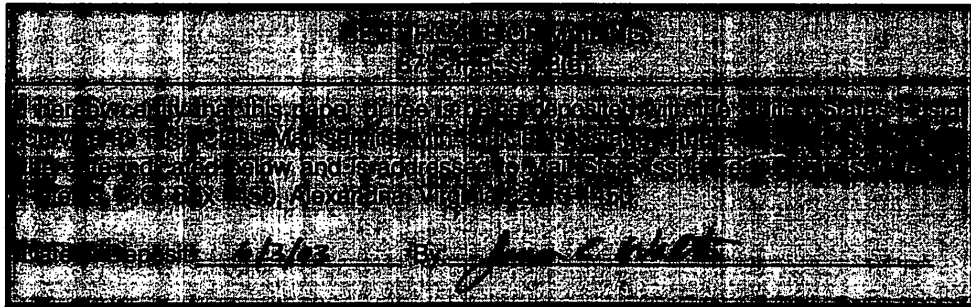
Art Unit: 2875

MARKED-UP VERSIONS OF THE AMENDED PARAGRAPHS IN THE SPECIFICATION

MAIL STOP: ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This Marked-Up Versions of the Amended Paragraphs in the Specification corresponds to the amendments proposed in Applicant's Amendment After Allowance, which is filed herewith. Part B of Form PTOL-85 is filed herewith along with the Issue Fee.



BEST AVAILABLE COPY

Marked-Up Versions of the Amended Paragraphs in the Specification
Attorney Docket No. 0638MH-40982-US
Page 1

YOT-1002-0189

IN THE SPECIFICATION:

1. On page 13, line 3, change "162" to ~~163~~.

Base portion 120 includes a removable cylindrical sleeve 156, a removable cover 160, and a receiver 168. Sleeve 156 is configured to slip over the exterior of shaft portion 170, and includes a longitudinal slot 158 that allows access to screw clamps 174 and 176 when sleeve 156 is placed over shaft portion 170. Slot 158 also allows access to a connector 166 disposed in the lower portion of pole portion 115 when sleeve 156 is placed over shaft portion 170. Connector 166 is conductively coupled to the wires from alternate power system charger 162 and solar cells 135. Cover 160 is preferably concave in shape, thereby defining an interior space which may be used to house the electronics (not shown) of power system 150. Cover 160 may include one or more seams [162] 163 that allow access to the interior space defined by cover 160. Receiver 168 releasably receives battery pack 155a. A wire 152 and plug 154 conductively couple battery pack 155a to connector 166, thereby providing an electrical circuit between rechargeable battery pack 155a and light strands 119, 121, 123, and 125 of lighting system 126.

*7/23/03
Approved
[Signature]*

2. On page 16, line 19, change "262" to ~~263~~.

Base portion 220 includes a removable cylindrical sleeve 256, a removable cover 260, and recessed portions 280 and 282. Sleeve 256 is configured to slip over the exterior of shaft portion 270, and includes a longitudinal slot 258 that allows access to screw clamps 274 and 276 when sleeve 256 is placed over shaft portion 270. Slot 258 also allows access to a connector 266 disposed in the lower portion of pole portion 215 when sleeve 256 is placed over shaft portion 270. Connector 266 is conductively coupled to the wires from alternate power system charger 262 and solar cells 235. Cover 260 is preferably concave in shape, thereby defining an interior space which may be used to house the electronics (not shown) of power system 250. Cover 260 may include one or more seams [262] 263 that allow access to the interior space defined by cover 260. Recessed portion 280 releasably receives batteries 255a, and recessed portion 282 releasably receives external power system charger 251. A wire 252 and plug 254 conductively couple batteries 255a to connector 266, thereby providing an electrical circuit between rechargeable batteries 255a and light strands 219, 221, 223, and 225 of lighting system 226.

*Approved
D. Sawney
7/23/2003*

REMARKS

The Issue Fee is paid herewith. No other fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees that are necessary, and credit any overpayments, to Deposit Account No. 50-1060.

Respectfully submitted,

6/3/03
Date

James E. Walton
James E. Walton, Reg. No. 47,245
Kenneth C. Hill, Reg. No. 29,650
Melvin A. Hunn, Reg. No. 32,574
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jimwalton@hillandhunn.com (e-mail)
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melhunn@hillandhunn.com (e-mail)

ATTORNEYS FOR APPLICANT



#10
JG

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 0638MH-40982-US

In re Application of:

GREGORY G. KUELBS

Serial No. 10/068,424

Filed: 7 FEBRUARY 2002

For: **UMBRELLA APPARATUS**

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§
§
§
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§
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§

Examiner: **SAWHNEY, HARGOBIND S.**

Art Unit: 2875

#6/drawing
7/17/03
C.Pai

LETTER TO THE OFFICIAL DRAFTSPERSON

MAIL STOP: ISSUE FEE

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Enclosed herewith are 11 sheets of formal drawings for the subject application. These drawings incorporate proposed changes to Figures 2C and 3C, which have been submitted to the Examiner along with an Amendment After Allowance.

CERTIFICATE OF MAILING 37 C.F.R. § 1.8(a)	
I hereby certify that this paper or fee is being deposited with the United States Postal Service as First Class Mail service with sufficient postage under 37 C.F.R. § 1.8(a) on the date indicated below and is addressed to Mail Stop: Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.	
Date of Deposit: <u>6/3/03</u>	By: <u>James E. Walts</u>

03, 03 YOT-1002-193

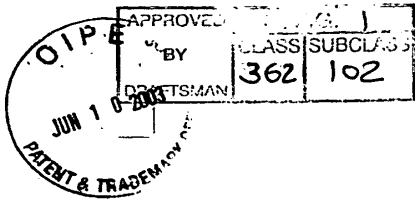
The Issue Fee is paid herewith. No other fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any additional fees that are necessary, and credit any overpayments, to Deposit Account No. **50-1060**.

Respectfully submitted,

6/3/03
Date

James E. Walton
James E. Walton, Reg. No. 47,245
Kenneth C. Hill, Reg. No. 29,650
Melvin A. Hunn, Reg. No. 32,574
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jimwalton@hillandhunn.com (e-mail)
kenhill@hillandhunn.com (e-mail)
melhunn@hillandhunn.com (e-mail)

ATTORNEYS FOR APPLICANT



0638MH-40982-US

10/068,424

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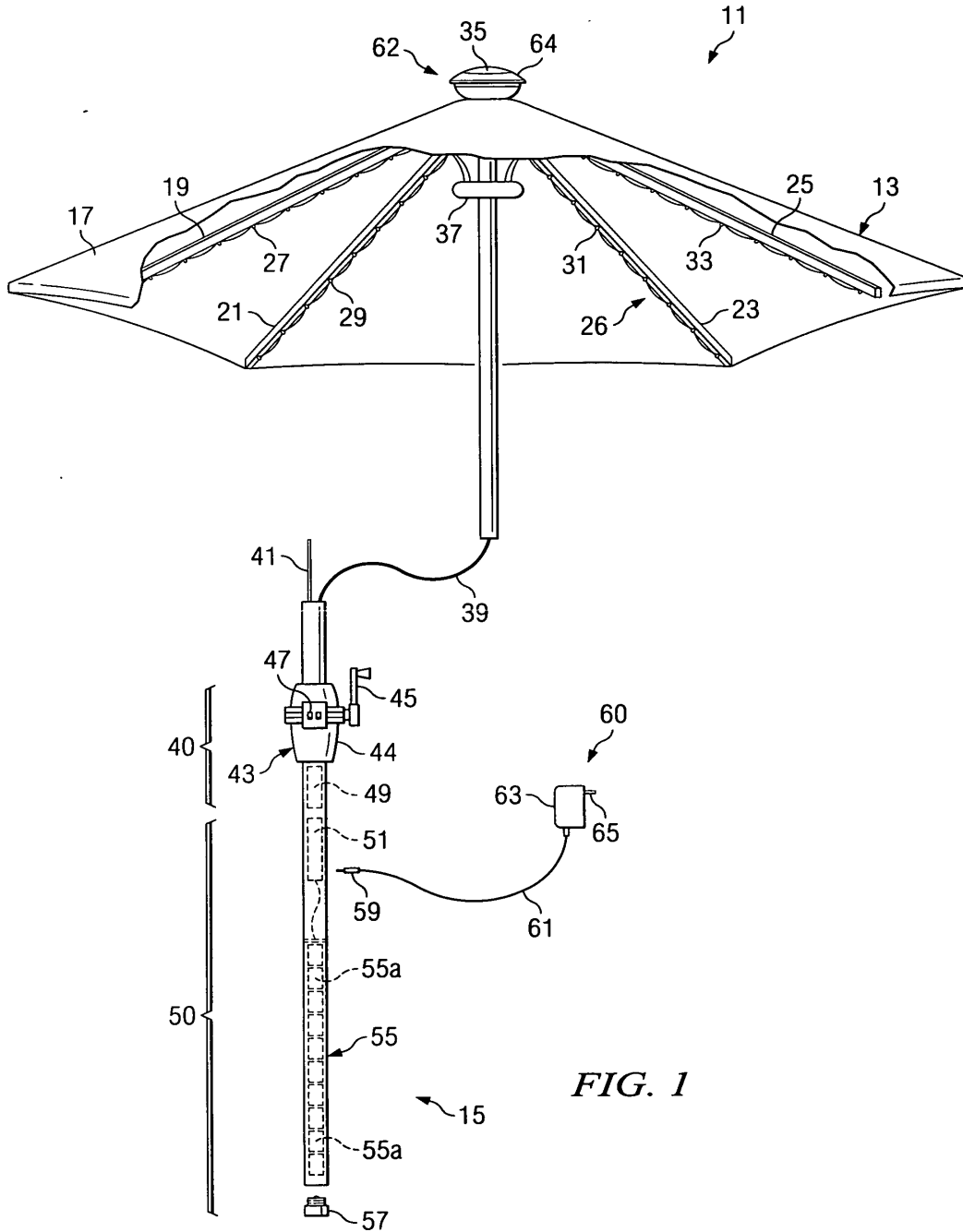
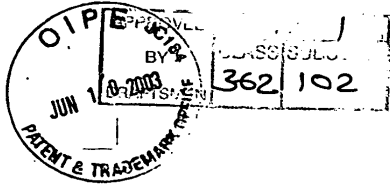


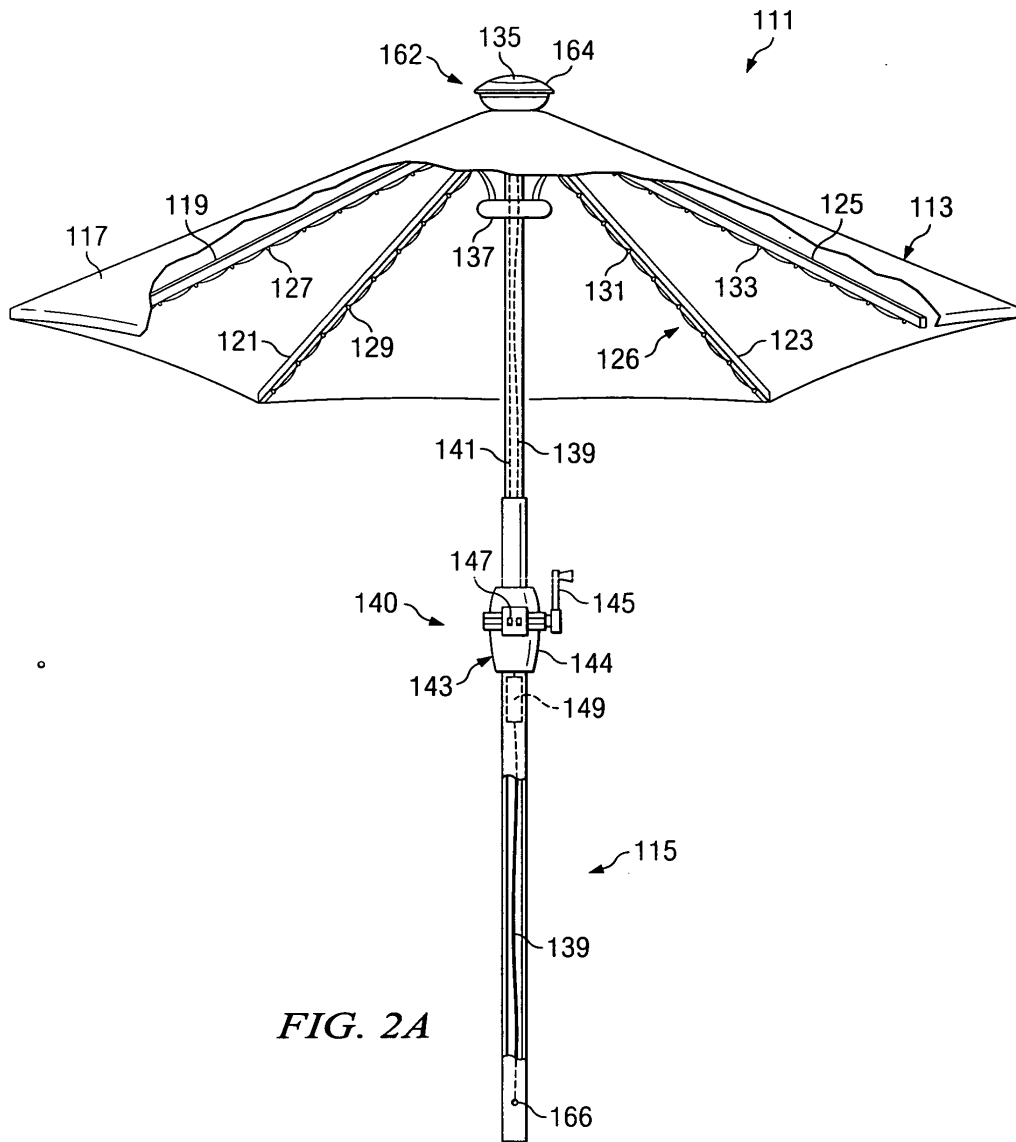
FIG. 1

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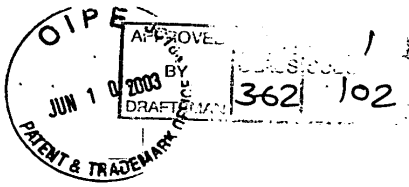


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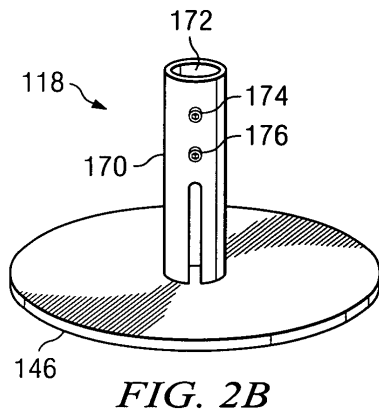


FIG. 2B

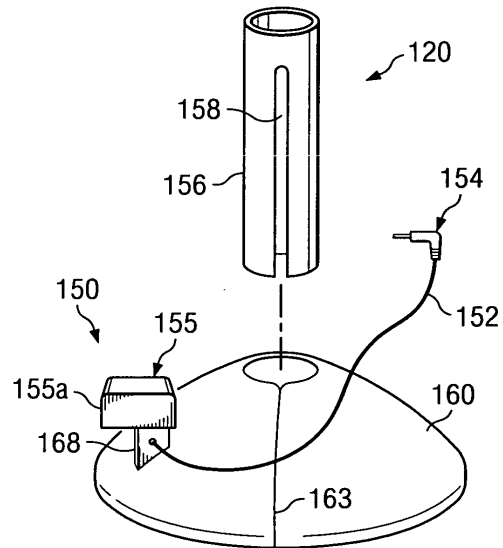
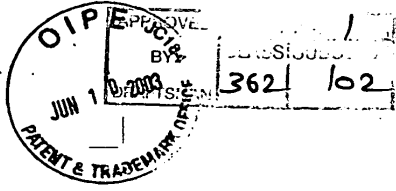


FIG. 2C

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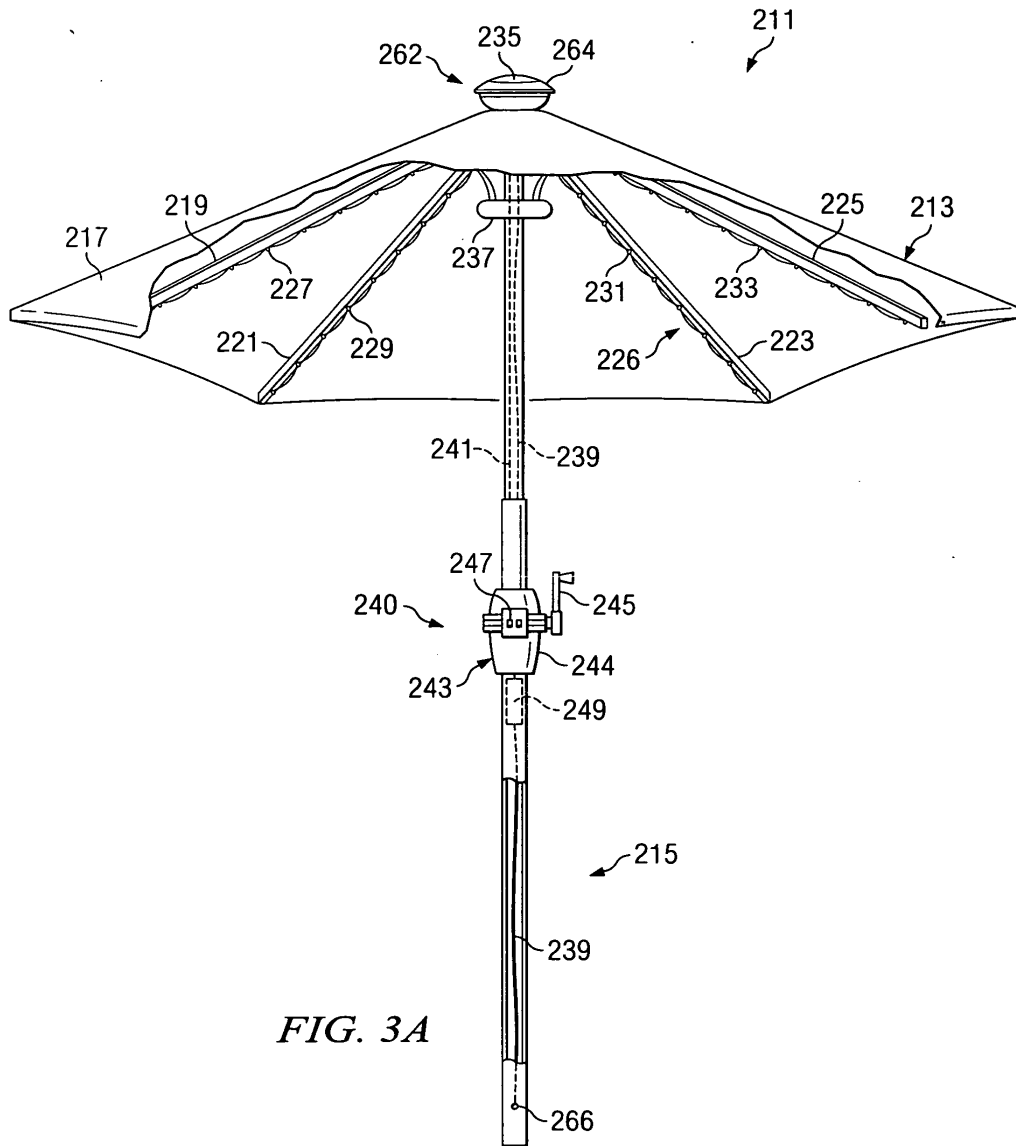
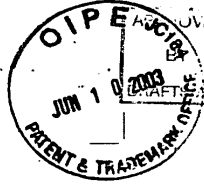


FIG. 3A

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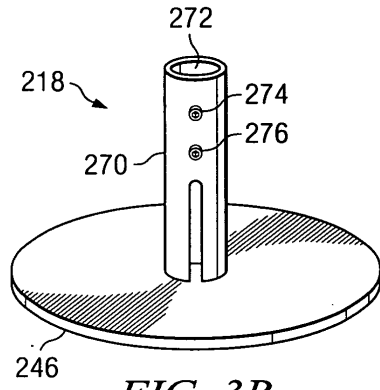


FIG. 3B

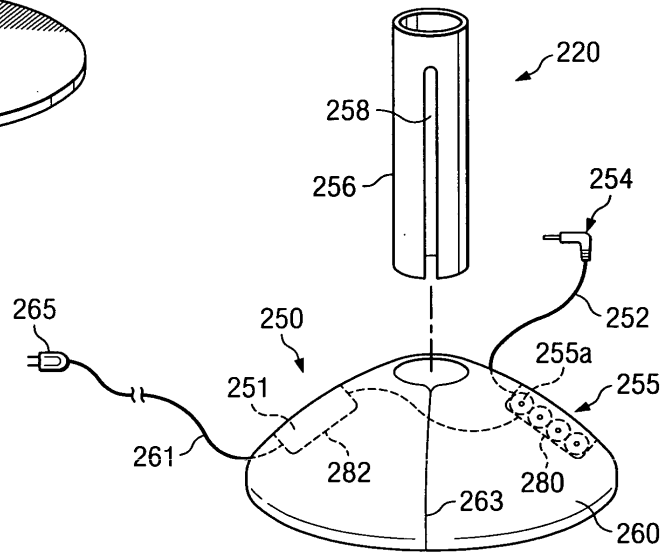


FIG. 3C

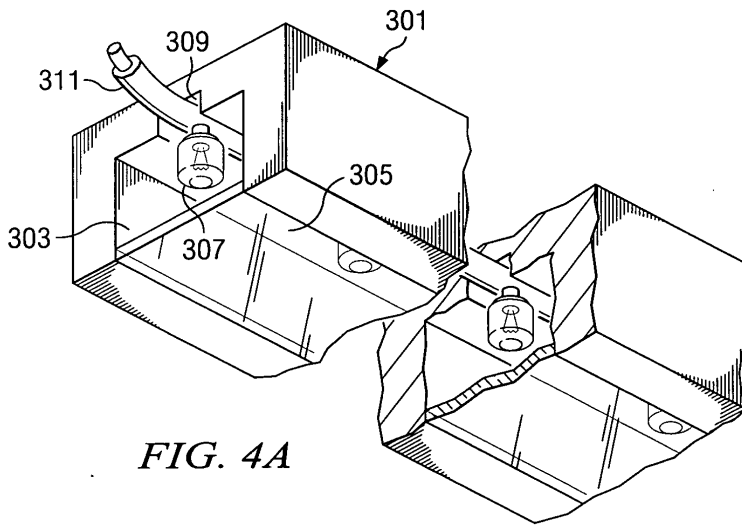


FIG. 4A

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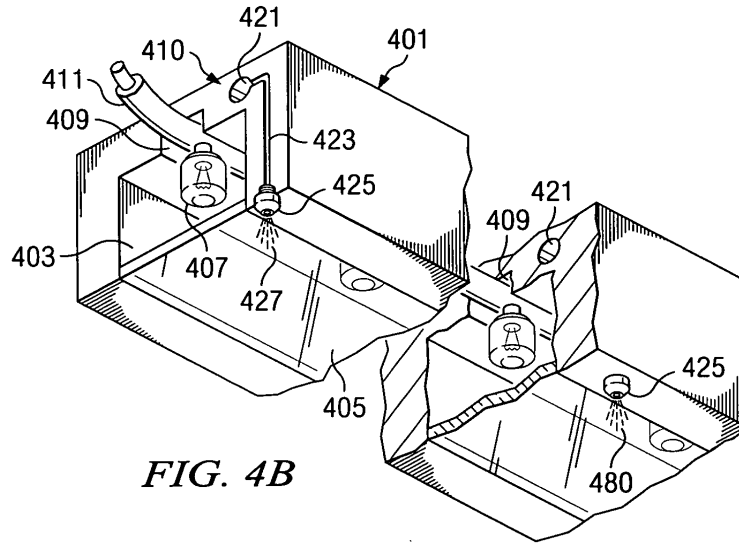


FIG. 4B

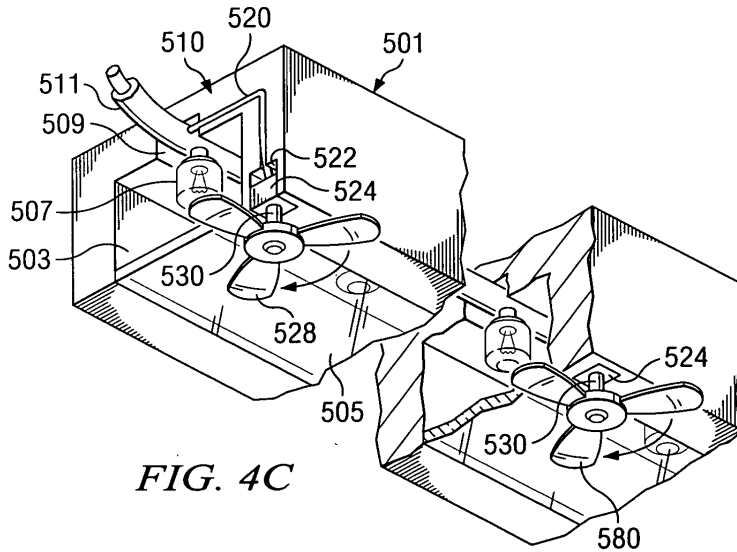
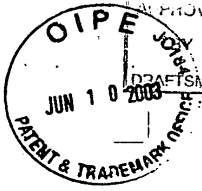


FIG. 4C

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CLASSIFICATION: 362 102

0638MH-40982-US

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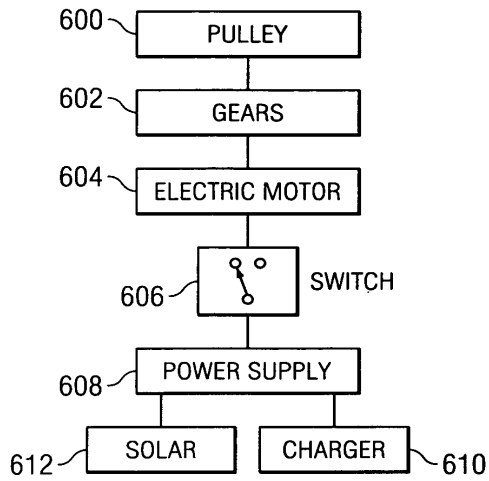


FIG. 5A

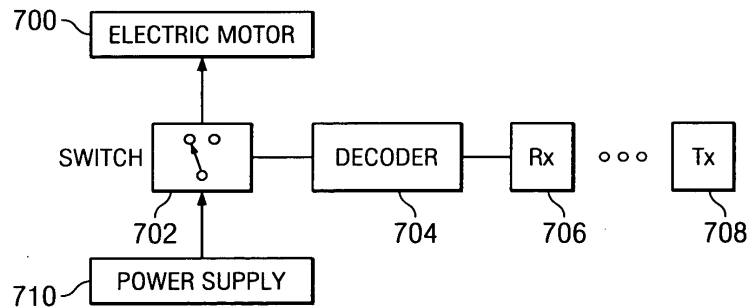
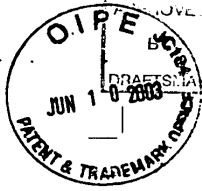


FIG. 5B

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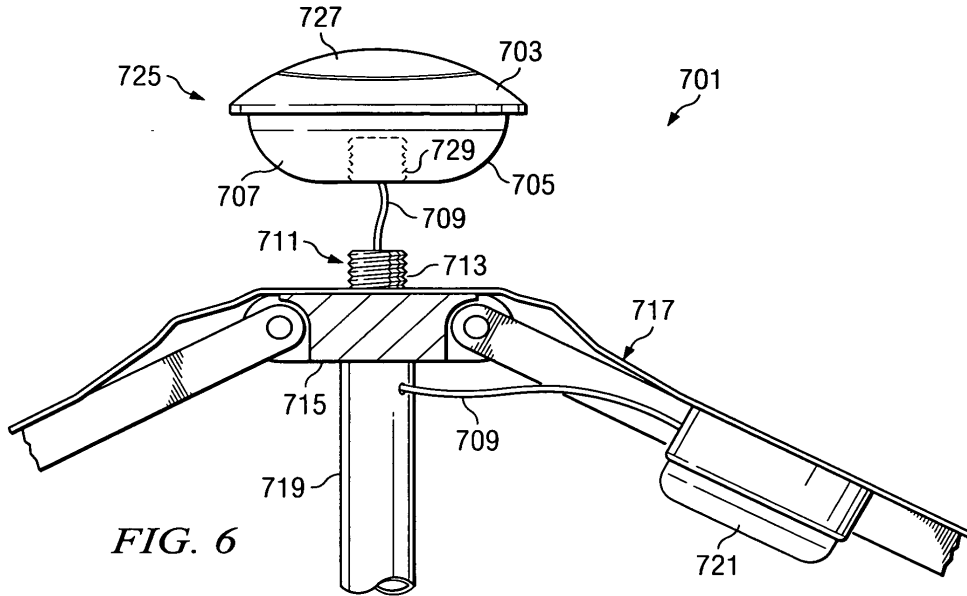


FIG. 6

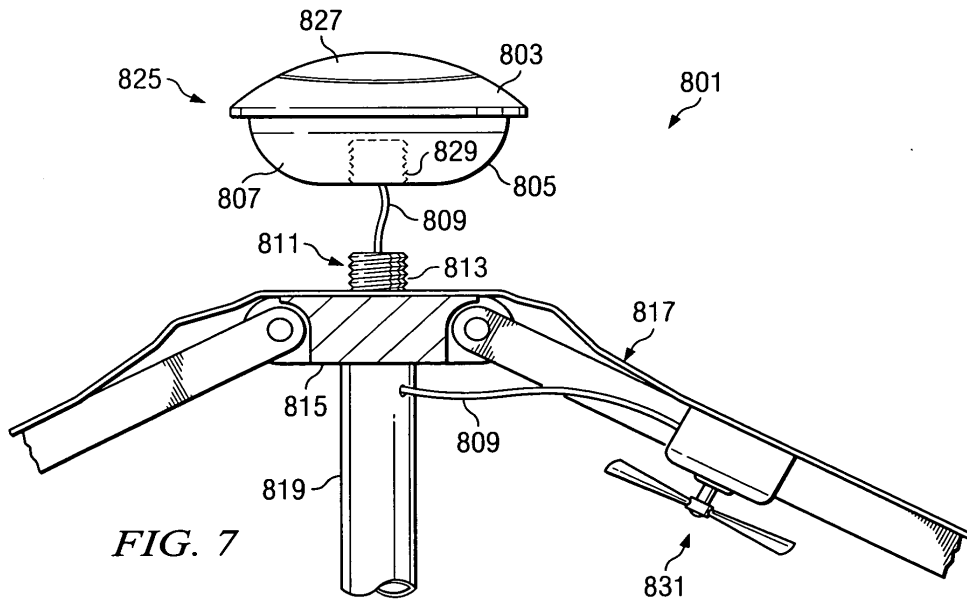
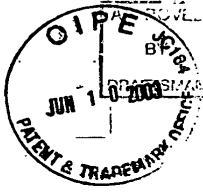


FIG. 7

YOT-1002-0202



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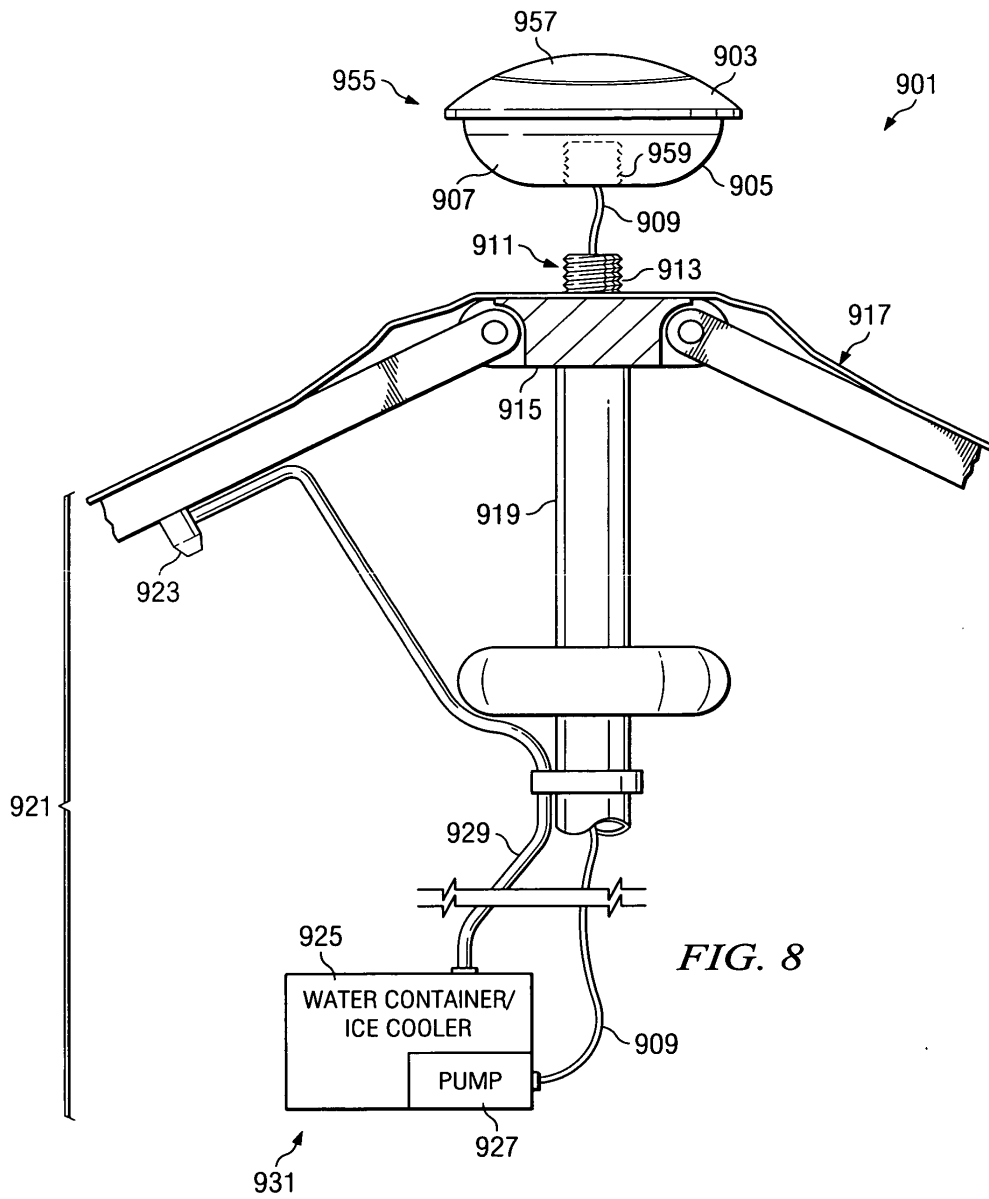
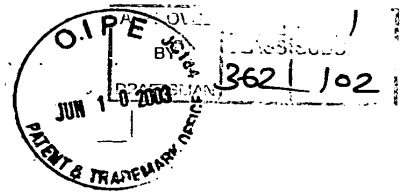


FIG. 8

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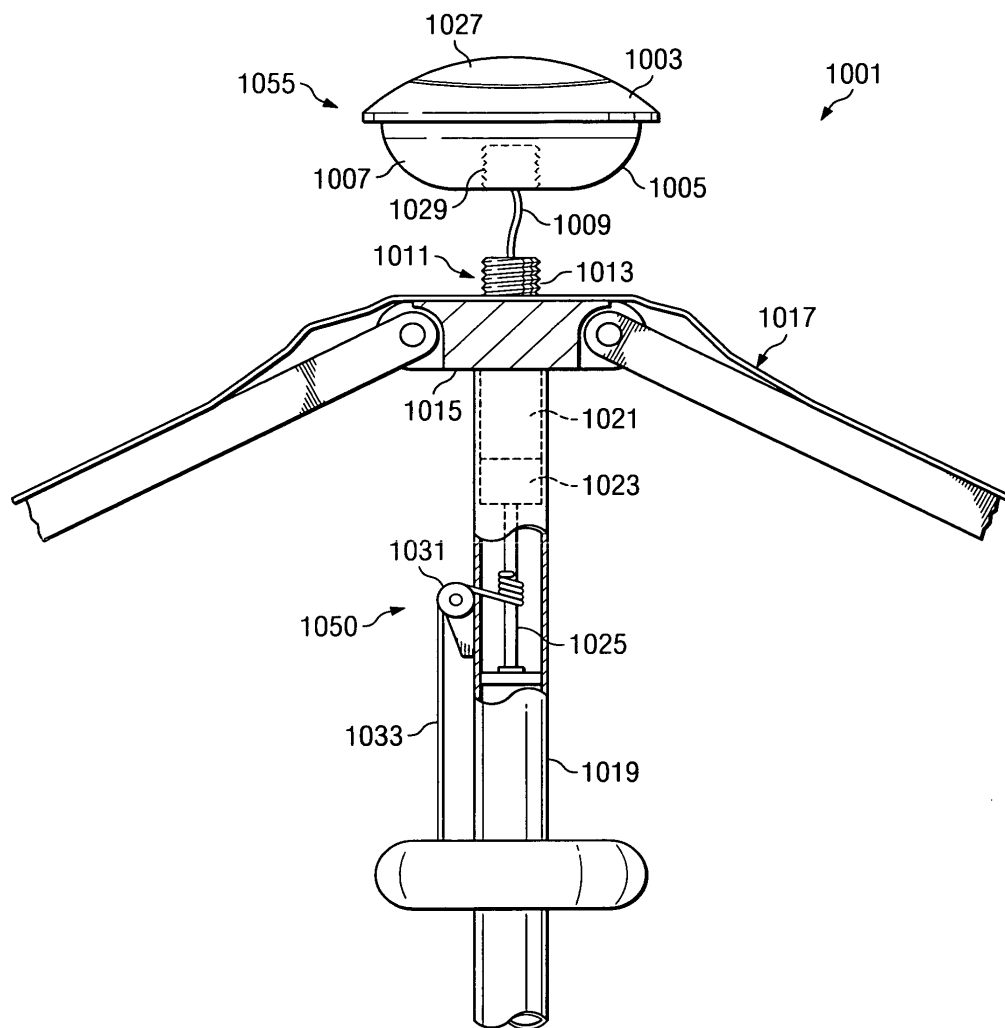
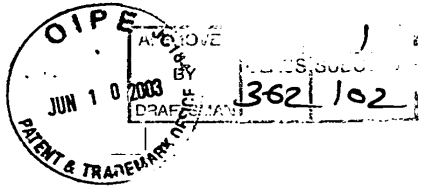


FIG. 9

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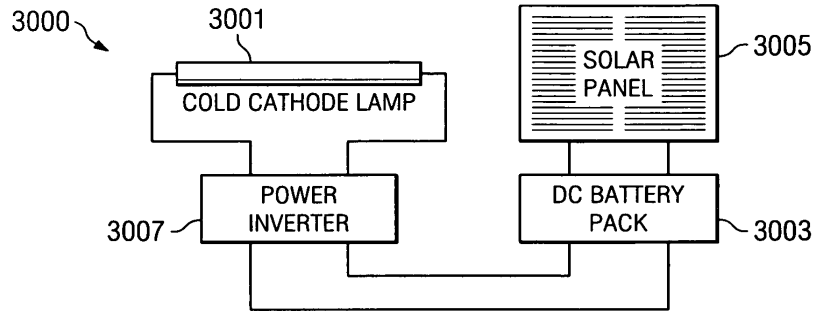


FIG. 10

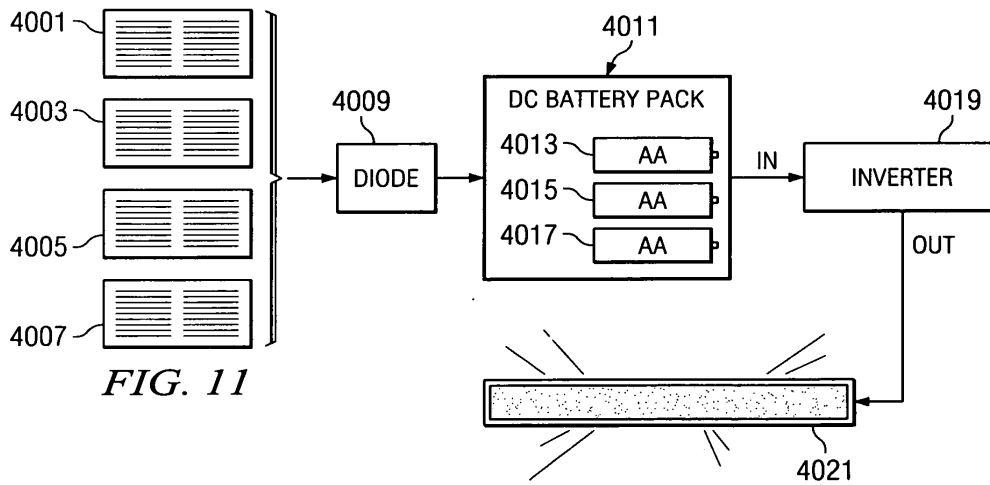


FIG. 11

YOT-1002-0205

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail Box ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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 7590 03/20/2003

James E. Walton
 HILL & HUNN, LLP
 Suite 1440
 201 Main Street
 Fort Worth, TX 76102-3105



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James E. Walton (Depositor's name)
James E. Walton (Signature)
 6/3/03 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,424	02/07/2002	Gregory G. Kuelbs	0638MH-40982-US	9580

TITLE OF INVENTION: UMBRELLA APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$650	\$0	\$650	06/20/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAWHNEY, HARGOBIND S	2875	362-102000

- Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.
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- James E. Walton
- Melvin A. Hunn
- Hill & Hunn LLP

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World Factory, Inc. Southlake, Texas

Please check the appropriate assignee category or categories (will not be printed on the patent) individual corporation or other private group entity government

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 Publication Fee
 Advance Order - # of Copies 10
- 4b. Payment of Fee(s):
 A check in the amount of the fee(s) is enclosed.
 Payment by credit card. Form PTO-2038 is attached.
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Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature) *James E. Walton* (Date) 6/3/03
 Reg. No. 47,245

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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TRANSMIT THIS FORM WITH FEE(S)

PTOL-85 (REV. 04-02) Approved for use through 01/31/2004. OMB 0651-0033

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

06/17/2003 10068424 650.00 30.00
 0151:6501 0151:4001

YOT-1002-0206



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,424	02/07/2002	Gregory G. Kuelbs	0638MH-40982-US	9580

7590 07/28/2003
James E. Walton
HILL & HUNN, LLP
Suite 1440
201 Main Street
Fort Worth, TX 76102-3105

EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT PAPER NUMBER

2875

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

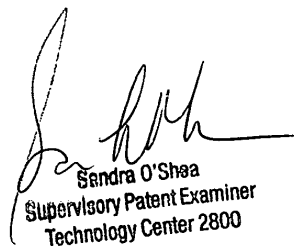
Response to Rule 312 Communication	Application No.	Applicant(s)	
	10/068,424	KUELBS, GREGORY G.	
	Examiner	Art Unit	
	Hargobind S Sawhney	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. The amendment filed on 10 June 2003 under 37 CFR 1.312 has been considered, and has been:

- a) entered.
- b) entered as directed to matters of form not affecting the scope of the invention.
- c) disapproved because the amendment was filed after the payment of the issue fee.
 Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.
- d) disapproved. See explanation below.
- e) entered in part. See explanation below.

The requested changes in figures 2C and 3C, and in pages 13 and 16 of the specification have been entered as these changes do not affect the scope of the invention. Further, the requested changes do not add new matter.


 Sandra O'Shea
 Supervisory Patent Examiner
 Technology Center 2800

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	--

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 3:14-cv-1348	DATE FILED 4/14/2014	U.S. DISTRICT COURT Northern District of Texas
PLAINTIFF LakeSouth Holdings, LLC		DEFENDANT Ace Evert, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713	9/2/2003	LakeSouth Holdings, LLC
2		
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/N. Taylor	DATE 4/14/14
-------------------------	----------------------------------	-----------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas, Dallas Division on the following
 Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:14-cv-01877-M	DATE FILED 5/22/2014	U.S. DISTRICT COURT Northern District of Texas, Dallas Division
PLAINTIFF LakeSouth Holdings LLC		DEFENDANT Wal-Mart Stores Inc et al
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713 B1	9/2/2003	World Factory, Inc
2 6,612,713 C1	9/23/2013	World Factory, Inc.
3 6,901,882 B2	6/7/2005	World Factory, Inc.
4 7,017,521 B2	3/28/2006	World Factory, Inc.
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/Shakira K. Todd	DATE 5/23/2014
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YOT-1002-0210

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas, Dallas Division on the following
 Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:14-cv-01877-M	DATE FILED 5/22/2014	U.S. DISTRICT COURT Northern District of Texas, Dallas Division
PLAINTIFF LakeSouth Holdings LLC		DEFENDANT Wal-Mart Stores Inc et al
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713 B1	9/2/2003	World Factory, Inc
2 6,612,713 C1	9/23/2013	World Factory, Inc.
3 6,901,882 B2	6/7/2005	World Factory, Inc.
4 7,017,521 B2	3/28/2006	World Factory, Inc.
5		

In the above--entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above--entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/Shakira K. Todd	DATE 5/23/2014
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YOT-1002-0211

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ACE EVERT, INC.,
Petitioner,

v.

LAKESOUTH HOLDINGS, LLC,
Patent Owner.

Case IPR2015-00987
Patent 6,612,713 B1

Before MICHAEL W. KIM, KRISTINA M. KALAN, and BETH Z. SHAW,
Administrative Patent Judges.

KALAN, *Administrative Patent Judge.*

TERMINATION
Dismissing the Proceeding
37 C.F.R. § 42.5(a), 37 C.F.R. § 42.71(a)

IPR2015-00987
Patent 6,612,713 B1

The parties have requested that the above-captioned proceeding be terminated pursuant to a settlement. The Board authorized the parties to file a joint motion to terminate the above-captioned proceeding on July 1, 2015.

On July 6, 2015, and pursuant to 35 U.S.C. § 317, the parties filed a joint motion to terminate the above-captioned proceeding (Paper 9), along with a joint motion to file the settlement agreement as business confidential information, to be kept separate from the patent file pursuant to 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c) (Paper 10). The joint motion to file the settlement agreement as business confidential information included a copy of the settlement agreement. Paper 10, Exhibit 1.

Generally, the Board expects that a proceeding will terminate after the filing of a settlement agreement. *See, e.g.*, Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,768 (Aug. 14, 2012). This case is in the preliminary proceeding stage. A preliminary proceeding begins with the filing of a petition for instituting a trial and ends with a written decision as to whether trial will be instituted. *See* 37 C.F.R. § 42.2. Petitioner filed a Petition on April 1, 2015. Patent Owner has not yet filed a Preliminary Response, which is due on or before July 10, 2015. No decision whether to institute a trial has been made.

The joint motion to terminate indicates that the parties have settled their dispute involving U.S. Patent No. 6,612,713 B1 (“the ’713 patent”). Paper 9, 1. The joint motion to terminate further indicates that the ’713 Patent “is not the subject of any other proceeding pending before the United States Patent & Trademark Office, and there are no current or contemplated pending litigation proceedings involving the ’713 Patent.” *Id.* at 2.

IPR2015-00987
Patent 6,612,713 B1

Based on the facts of the case, and in view of the parties' joint request for termination of this proceeding, we determine that it is appropriate to dismiss the petition as to both Petitioner and Patent Owner without rendering either a decision to institute or a final written decision. *See* 37 C.F.R. §§ 42.5(a); 42.71(a). Therefore, the joint motion to terminate and the request to treat the settlement agreement as business confidential information are *granted*. This paper does not constitute a final written decision pursuant to 35 U.S.C. § 318(a).

Accordingly, it is

ORDERED that the joint motion to treat the settlement agreement as business confidential information, to be kept separate from the patent file, is *granted*;

FURTHER ORDERED that the joint motion to terminate the proceeding is *granted*; and

FURTHER ORDERED that the Petition for *Inter Partes* Review of the above-referenced patent is *dismissed*.

IPR2015-00987
Patent 6,612,713 B1

FOR PETITIONER:

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Steven McMahon Zeller
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szeller@dykema.com

FOR PATENT OWNER:

Michael A. Benefield
ALBRITTON LAW FIRM
ls@emafirm.com

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas on the following
 Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:14-cv-1348	DATE FILED 4/14/2014	U.S. DISTRICT COURT Northern District of Texas
PLAINTIFF LakeSouth Holdings, LLC		DEFENDANT Ace Evert, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713	9/2/2003	LakeSouth Holdings, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT Order entered 9/25/2015

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/B. Boles	DATE 9/25/2015
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AO 120 (Rev. 08/10)

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following
 Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:15-cv-07562	DATE FILED	U.S. DISTRICT COURT Central District of California
PLAINTIFF SECURED MAIL SOLUTIONS, LLC		DEFENDANT UNIVERSAL WILDE, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 See Attachment "A"		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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YOT-1002-0217

Attachment A

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1.	7,814,032	10/12/2010	Secured Mail Solutions, LLC
2.	7,818,268	10/19/2010	Secured Mail Solutions, LLC
3.	8,073,787	12/6/2011	Secured Mail Solutions, LLC
4.	8,260,629	9/4/2012	Secured Mail Solutions, LLC
5.	8,429,093	4/23/2013	Secured Mail Solutions, LLC
6.	8,910,860	12/16/2014	Secured Mail Solutions, LLC
7.	9,105,002	8/11/2015	Secured Mail Solutions, LLC

YOT-1002-0218

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:16-cv-1027	DATE FILED 4/15/2016	U.S. DISTRICT COURT Northern District of Texas
PLAINTIFF LakeSouth Holdings, LLC		DEFENDANT Tuesday Morning Corporation and Tuesday Morning, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713 B1	9/2/2003	LakeSouth Holdings, LLC
2 6,612,713 C1	9/23/2013	LakeSouth Holdings, LLC
3 8,794,781 B2	8/5/2014	LakeSouth Holdings, LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK CLERK OF COURT	(BY) DEPUTY CLERK s/S. Shelby	DATE 4/15/2016
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YOT-1002-0219

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas, Dallas Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:16-cv-1026-G	DATE FILED 4/15/2016	U.S. DISTRICT COURT Northern District of Texas, Dallas Division
PLAINTIFF LakeSouth Holdings LLC		DEFENDANT Lowe's Companies Inc et al
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713 B1	9/2/2003	LakeSouth Holdings LLC
2 6,612,713 C1	9/23/2013	LakeSouth Holdings LLC
3 8,794,781 B2	8/5/2014	LakeSouth Holdings LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/T. Knighton	DATE 4/15/2016
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of Texas, Dallas Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:16-cv-1024-D	DATE FILED 4/15/2016	U.S. DISTRICT COURT Northern District of Texas, Dallas Division
PLAINTIFF LakeSouth Holdings LLC		DEFENDANT Kohl's Department Stores Inc et al
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713 B1	9/2/2003	LakeSouth Holdings LLC
2 6,612,713 C1	9/23/2013	LakeSouth Holdings LLC
3 8,794,781 B2	8/5/2014	LakeSouth Holdings LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY		
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/T. Knighton	DATE 4/15/2016
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YOT-1002-0221

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Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 3:16-cv-1026-G	DATE FILED 4/15/2016	U.S. DISTRICT COURT Northern District of Texas, Dallas Division
PLAINTIFF LakeSouth Holdings LLC		DEFENDANT Lowe's Companies Inc et al
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,612,713 B1	9/2/2003	LakeSouth Holdings LLC
2 6,612,713 C1	9/23/2013	LakeSouth Holdings LLC
3 8,794,781 B2	8/5/2014	LakeSouth Holdings LLC
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Karen Mitchell	(BY) DEPUTY CLERK s/T. Knighton	DATE 4/15/2016
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YOT-1002-0222

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3 8,794,781 B2	8/5/2014	LakeSouth Holdings, LLC
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK CLERK OF COURT	(BY) DEPUTY CLERK s/S. Shelby	DATE 4/15/2016
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YOT-1002-0223