



- (51) International Patent Classification:
F21V 33/00 (2006.01)
- (21) International Application Number:
PCT/US2009/061129
- (22) International Filing Date:
19 October 2009 (19.10.2009)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
12/426,064 17 April 2009 (17.04.2009) US
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- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

[Continued on next page]

- (54) Title: SCREW-IN LED LIGHT AND SOUND BULB

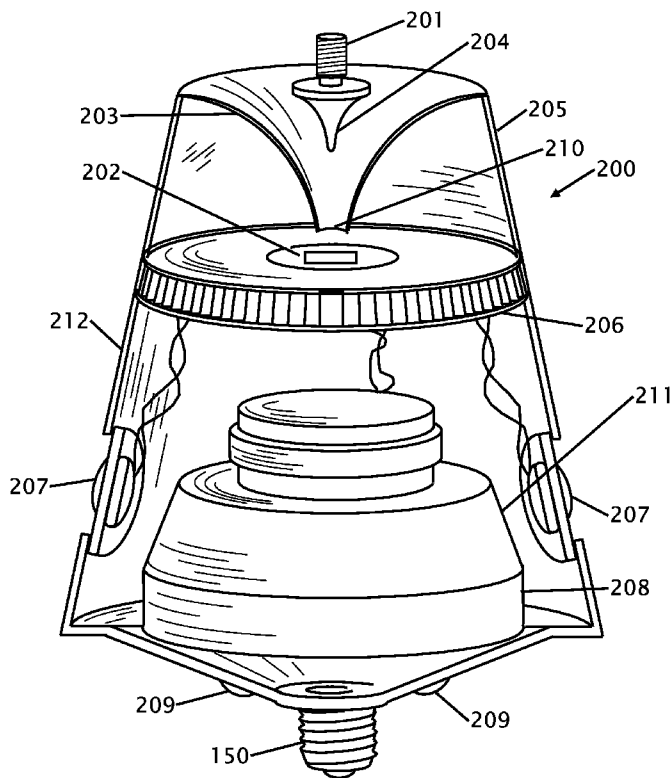


FIG. 5

(57) Abstract: A combination light and sound producing screw-in bulb or fixture with speakers element(s) where the screw-in bulb or fixture is installed in a wall or ceiling in an existing screw-in light bulb socket. The sound producing element(s) are coaxial opposed or planar arrangement of speakers having a low frequency transducer and one or more high frequency transducers that can be directed to emit sound in a particular direction. The fixture or bulb may further include digital signal processing to modify the sound to account for obstructions in or near the fixture. The surface of the sound transducer can be reflective in nature to provide focusing or diffusion of the light from the lighting element(s). The lighting element(s) are fluorescent, low voltage LED or cluster LED type that may include adjustment for lighting intensity and color. The screw-in bulb may further include mounting hardware for securing a lamp shade.

WO 2010/120328 A1



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- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
 - *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
- *with amended claims and statement (Art. 19(1))*

INVENTION TITLE

SCREW-IN LED LIGHT AND SOUND BULB

CROSS REFERENCE TO RELATED APPLICATION

[Para 1] This application is a continuation applicant's co-pending application Serial Number 12/426,064 filed April 17, 2009.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[Para 2] Not Applicable

THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT

[Para 3] Not Applicable

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC

[Para 4] Not Applicable

BACKGROUND OF THE INVENTION

[Para 5] Field of the Invention:

[Para 6] This invention relates to a screw-in light bulb with integrated speakers. More particularly, the present invention relates to a screw-in light bulb having a plurality of LED lighting elements where the lighting elements are placed around the screw-in light bulb housing to distribute light in an even distribution to simulate or improve the light diffusion found in an incandescent screw-in light bulb. The lighting elements are placed in combination with speakers in a single unit. The screw-in unit allows a person to place speakers within existing lighting socket to provide sound or surround sound without wiring. The existing light socket provides power for the light and the signal for the sound is either embedded onto the power to the fixture or is received from a wireless transmitter.

[Para 7] Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98:

[Para 8] Most houses constructed today include one or more can style lighting fixtures where the lighting fixture is recessed into a wall or ceiling. Many house is also include an intercom or speakers that are also mounted in the wall or ceiling. The installation of the lighting and sound are usually provided by different tradesman during the construction of the house. Some patents have been issued on products to try to combine the lighting and sound as a single element.

[Para 9] LED's have continued to improve in the amount of illumination that they can emit with multiple lighting elements within a single powered chip. The light from these

elements shines in a fairly directional manner. The directional manner is undesirable in a number of installations where a more even omni-directional light is preferred.

[Para 10] A lamp produces light in three primary ways: First, light is nearly always emitted through a hole in the top of a shade, projecting light onto the ceiling and sometimes washing nearby surfaces with a conical light pattern. Second, Light is directed downward (sometimes with the aid of a shade) to illuminate an area which is generally more confined and might be most often used for reading or close hand work such as sewing. Third, a portion of the light is ambient in nature and is used most often to illuminate the shade, making it glow, often changing the color and character of the light while highlighting (sometimes) aesthetic aspects of the shade.

[Para 11] It is the third which is hard to accomplish with LEDs. It is difficult to get an even wash of light across a lamp shade and thereby provide the necessary glow. The diffusion of light from LED's is further exacerbated with the placement of speakers on a light bulb where high frequency speakers also emit directional sound.

[Para 12] U.S. patent number 1,272,843 issued to H. G. Pape on July 06, 1918, U.S. pat number 4,433,363 issued on Feb 21, 1984 and 4,528,620 issued on July 9, 1985 both issued to Weber, nations sound lighting fixture that is suspended free ceiling. All three of these issued patents disclose a sound producing element combined with incandescent lighting. None of these three patents disclose that the lighting and sound fixture is for recessed ceiling or walled installation or for mounting on a wall or ceiling nor do they disclose using low voltage lighting, a wireless receiver or digital signal processing to account for placement or fixture construction. The orientation of the sound producing elements is also not adjustable to direct sound waves to a particular location.

[Para 13] U.S. patent number 4,776,018 issued to Cordier on October 04, 1988 and U.S. patent number 5,980,057 issued to Cristie on November 09, 1999 both disclose screw-in combination lighting / sound fixtures. Both of these two patents are for a standalone screw in lighting fixture that can be installed inside an existing lights socket and include a wireless receiver for receiving audio signal. Neither of these two patents provide a recessed lighting fixture they're simply lighting elements for installation in an existing fixture and do not include digital signal processing to account for placement or fixture construction. The sound producing elements are oriented to direct sound waves to a particular unidirectional location.

[Para 14] U.S. Patent Number 2,083,753 issued to A. R. Turner on June 15, 1937 and U.S. Patent Number 4,953,584 issued to Kawahata et al. on December 17, 1985 both disclose lighting fixtures for mounting on the ceiling. In the case of Turner, a portion of the fixture extends below the ceiling and above the ceiling. In the case of Kawahata et al. fixture is mounted in the ceiling. Neither of these two patents discloses using low voltage lighting within the fixture. The orientation of the sound producing element is fixed within the fixture and cannot be oriented to direct sound waves to particular location. Neither of these two patents includes digital signal processing to account for placement or construction of the fixture.

[Para 15] U.S. Patent 7,455,435 Issued November 25, 2008 to David K. Mathews et al., discloses a High Speed Data Interface to the AC Power Line through a Standard Light Bulb Socket. In this application a speaker is threaded into a light socket and the light bulb is then screwed into the speaker. This is not a single integrated speaker and light, nor does it provide omni-directional light.

[Para 16] What is needed is a combination lighting and sound bulb that is screwed directly into a standard light bulb socket. The illumination is provided from efficient LED elements and the light is diffused to provide even transmission of light that would be similar to an incandescent light bulb. The proposed application provides these features and functions in a complete package that can be installed in nearly any standard light bulb socket.

BRIEF SUMMARY OF THE INVENTION

[Para 17] It is an object of the combination lighting sound fixture bulb to provide a lighting element that disperses illumination away from the socket bottom to shine away from the connector. This lighting is most commonly found in incandescent light bulbs. This light is directed to send or project light out of the top of a light shade and onto a ceiling and onto walls or objects near the lamp.

[Para 18] It is another object of the combination lighting and sound bulb to provide a light that is directed downward in the direction of the base or socket side of the bulb. This lighting illuminates the area under a lamp shade where the illumination is useful for reading or close hand work such as sewing.

[Para 19] It is another object of the combination lighting and sound bulb to provide lenses and or reflective surface that are configured to evenly reflect the illumination away and around from a linear light path of a single or multiple element LED lighting source.

[Para 20] It is another object of the combination lighting and sound bulb to provide a light that is ambient in nature and is used most often to illuminate the shade, making it glow, often changing the color and character of the light while highlighting (sometimes) aesthetic aspects of the shade.

[Para 21] It is another object of the combination lighting and sound bulb to provide the lighting and sound bulb that is installed in the same manner as a conventional incandescent light bulb by unscrewing an incandescent bulb and screwing in the light and sound bulb. This allows installation with little or no training or licensing.

[Para 22] It is an object of the combination lighting and sound bulb to provide lighting that is low voltage and can be installed by both a licensed electrical contractor as well as a sound installation contractor. This provides the greatest flexibility for installation.

[Para 23] It is another object of the combination lighting and sound bulb to provide the multiple sound producing elements where some of the sound producing elements produced low frequency sound waves and others produce high frequency sound waves. The light and sound bulb may have one Low frequency transducer (woofer) multiple mid-range or high frequency (tweeter) transducers. These speakers can be arranged in a co-axial, opposed and or orthogonal orientations or in an on or off axis orientation.

[Para 24] It is another object of the combination lighting and sound bulb to provide the surface of the sound producing elements with the properties that allow the light to be reflected off the surface of the sound producing element(s) to direct the light into the room. The surface can alternatively diffuse the light to provide for more even lighting.

[Para 25] It is another object of the combination lighting and sound bulb to provide the signal to the sound producing elements as a wired connection or as a wireless connection. The wireless connection may also include a repeater that can increase the distance that the wireless signal is sent and received.

[Para 26] It is another object of the combination lighting and sound bulb to allow for interchangeable lighting elements. The lighting elements can include LED, incandescent, fluorescent, halogen or a variety of other lighting elements that are interchangeable. Lighting elements may also be filtered to provide lighting of different colors and may also be dimmable. A plurality of lighting elements can be used within the bulb without compromising the quality of sound that is produced. The lighting elements can vary intensity and color based upon the sound that is emitting from the speaker(s).

[Para 27] It is another object of the combination lighting and sound bulb for the fixture to be configured in a light bulb that can be screwed into a standard light socket. In this configuration the 110 voltage may include a digital signal. The voltage is converted for use with the LED lights and either the digital signal is amplified and transmitted to the speakers or the signal is wirelessly received, amplified and transmitted to the speakers. This light and sound bulb in this configuration eliminates visible speakers and places the sound in light fixtures that already exist within a room.

[Para 28] It is still another object of the combination lighting and sound bulb to include digital signal processing to account for construction of the fixture location of the fixture, placement of the bulb and or other characteristics. The digital signal processing may also include a notch filter for canceling out 60 cycle noise from AC power lines.

[Para 29] Various objects, features, aspects, and advantages of the present invention will become more apparent from the following detailed description of preferred embodiments of the invention, along with the accompanying drawings in which like numerals represent like components.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[Para 30] Figure 1 shows a block diagram of the combination lighting and sound fixture.

[Para 31] Figure 2 shows a block diagram of the combination lighting and sound fixture with wireless controls for adjustment and signal repeating.

[Para 32] Figure 3 shows a prior art lamp with an incandescent light bulb.

[Para 33] Figure 4 shows a preferred embodiment of the light bulb speaker installed in the figure shown in Figure 8.

[Para 34] Figure 5 shows a cross sectional view of the elements of the light bulb speaker from Figure 4.

[Para 35] Figure 6 shows a bottom perspective view of a screw-in can style light and sound bulb.

[Para 36] Figure 7 shows a top perspective view of the screw-in can style light and sound bulb from Figure 6.

[Para 37] Figure 8 shows a top perspective view of another embodiment of the screw-in can style light and sound bulb from Figure 6.

DETAILED DESCRIPTION OF THE INVENTION

[Para 38] Figure 1 shows a block diagram of the combination lighting and sound fixture. The sound source 2 in this figure shows only a left and right signal output that might be found in a 2.1 channel audio system, but other systems with additional audio signal such as 4.1 channels or more system(s) will operate in a similar method. The two channels in this example are left 6 and right 4. Only the left channel is shown in this figure for simplicity. The channel is sent to a Dual Gang Junction Box 70 that includes several components including; a volume control 72 that sets the volume that will be emitted from the audio transducer; a digital signal processing module 76 (DSP) to adjust the sound from the speakers to produce anything from a flat sound to surround sound. The user can further use the DSP to switch between omni-directional usage to facilitate distributed audio and also THX home theater applications. The DSP further filters out 60 cycle noise to reduce or eliminate the 60 cycle noise from being transmitted out of the speakers; and a Low Filter Amplifier 78; and a High Filter Amplifier. The signal from the Low Filter Amplifier drives the low frequency transducer 40, while the High Filter Amplifier 74 drives one or more mid / high frequency transducers 50. The mid / high frequency transducers are labeled in this figure as North, South, East and West indicating the proposed orientation of the speakers.

[Para 39] Power connection 65 supplies power to the array of high brightness LED's 60. The LED's can be filtered with fixed or removable light filters to alter or tune the color of the illumination. It is also contemplated that the LED's can include multi-colored LED's and the color of the lighting can be changed or altered by adjusting the intensity of the different colored LED's. It is further contemplated that the lighting elements can vary intensity and color based upon the sound that is emitting from the speaker(s).

[Para 40] Figure 2 shows a block diagram of the combination lighting and sound fixture with wireless controls for adjustment and signal repeating. The signal source 120 in this figure is a stereo connected to a wireless transmitter 130. The transmitter 130 sends a wireless signal to the receiver 140 placed on or within fixture 10. The fixture 10 utilizes the signal to emit sound. The receiver 140 may include a repeater that sends the signal to other fixtures 12, 14 and 200 that emit the sound and may further also have repeaters that send the signal to additional fixtures. A handheld or wall mounted control unit 110 controls the volume and or tone from one or more fixtures. This unit can also adjust the intensity or color of the illumination and or extend/retract the sound emitters 50 from the fixture(s).

[Para 41] Figure 3 shows a prior art lamp with an incandescent light bulb. This is a typical prior art arrangement of an incandescent light 164 screwed into a socket base 166. The base has support rods 163 that connect the structural lamp base or fixture 162 to the nut 165 that supports the shade 161. The support member 163 is necessary because the prior art incandescent bulb creates significant heat and lacks structural rigidity to support the lamp shade 161.

[Para 42] Figure 4 shows a preferred embodiment of the light bulb speaker installed in the figure shown in Figure 3. This figure shows a general configuration of the speaker bulb 200 using the prior art threaded base 166 on the lamp base or fixture 162 and the lamp shade 161. Due to the larger size of the speaker bulb 200 the support member is combined into the lamp bulb 200. The LED illumination components create less heat. The top of the light speaker includes a threaded top member 201 for installation of the nut that secures the lamp shade. Detail of the components and structure of the speaker bulb are found in figure 5.

[Para 43] Figure 5 shows a cross sectional view of the elements of the light bulb speaker from Figure 4. This preferred configuration of the light sound bulb 200 maintains all of the light emitting aspects of a CFL or incandescent bulb with the use of the smallest number of LEDs possible. The threaded base of the bulb 150 is configured to be threaded into any existing threaded base that would support a standard incandescent light bulb. The heart of the design will be around a LED cluster 202 that contains one or a number of individual clustered LED's. In one embodiment a 10 Watt cluster LED is used but LED(s) with more or less intensity is contemplated.

[Para 44] A bugle-head reflector 203 will be centered over the LED cluster 202 so that a percentage of the light will pass through the center of the horn 203 to be broadcast against the ceiling and nearby surfaces. The surface area of the cluster LED 202 on the outside of the horn will reflect light from the uncovered portion 210 of the LED cluster 202 and direct it toward the shade (shown in Figure 4). In one embodiment the uncovered portion 210 covers about 1/3 of the LED at the center, but other ratios are contemplated. The shape of the horn 203 is parabolic and the surface curved could be determined by an exact math expression, which might be different for different size shades or shade shapes. The reflectors provide even light dispersion to simulate an even glow to the lamp shade. A transparent or frosted housing 205 allows the light to be sent or diffused through the light sound bulb 200.

[Para 45] This figure shows a second parabolic reflector 204 attached to the lampshade threaded top member 201 or "fitter" and is conceived to direct light away from the bottom of the fitter 201 and back into the main lighting stream to reduce light loss at the fitter.

[Para 46] A plurality of bottom emitting LED's 209 emit light from the underside of the sound light bulb to provide illumination for reading, hand work, hobbies or the like.

[Para 47] Area 206 provides a location for electronics. The housing 212 is made from plastic or heat dissipating metal to cool the electronics and or the LED elements. Tweeters 207 are mounted in the side wall 212. In the embodiment shown two opposing tweeters 207 are shown but more or less tweeters can be incorporated into the housing to provide an even dispersion of the sound from the tweeters and to minimize to directionality of the tweeters. A lower frequency midrange speaker 208 provides mid range sound. In the embodiments shown the midrange speaker is shown mounted to transmit sound downward, but other embodiments are contemplated. The housing provides a structural frame to connect the threaded base 150 to a lamp shade.

[Para 48] Figure 6 shows a bottom perspective view of a screw-in can style light and sound bulb. From this figure, the threaded socket 150 is shown on the back of the housing 220. The housing 220 is shown as a solid tapered cylindrical unit, but it is contemplated that the shape can take a number of different configurations including but not limited to multiple sided shapes and open cage type designs. This figure shows retention arms 221 located on opposing sides of the housing 220 that will at least partially hold the light and sound bulb within a recessed can hole. The retention arms 221 help to reduce the loading on the threaded socket 150. A spring type bend 223 of the arms allows the retention arms 221 to be at least partially brought together or collapsed to fit into a standard can lighting recess. The end of the retention arms 221 have bent legs 222 to prevent the light and sound bulb from being dropped from an overhead hole. A cosmetic bezel 224 surrounds the housing 220 to provide a finished appearance of the screw-in can style light and sound bulb. The bezel 224 and the retention arms 221 are one contemplated embodiment and are not required in all installations and use. The screw-in can style light and sound bulb shown in Figure 8 does not include the bezel or the retention arms.

[Para 49] Figure 7 shows a top perspective view of the screw-in can style light and sound bulb from Figure 6. In this figure the screw-in can style light and sound bulb has a speaker 240 mounted within the housing 220. This speaker 240 can take a number of configurations including but not limited to a single speaker, coaxial, triaxial or a speaker with a wizzer cone. A bridge 230 is shown spanning across the housing 220. The bridge has an LED cluster light 231 to provide illumination. While an LED cluster light is shown, other types and styles of illumination elements are contemplated. The bridge 230 is constructed as a heat sink to provide cooling to the lighting element 231. It is also contemplated that the bridge 230 can have one or more higher frequency tweeter elements 243. The receiver 140 is shown extending from the housing. This configuration of screw-in light and sound bulb shows the retention arms 221 and the cosmetic bezel 224. An optically and or audio covering is optionally placed within the bezel 224 to cover and protect the inside of the screw-in light and sound bulb.

[Para 50] Figure 8 shows a top perspective view of another embodiment of the screw-in can style light and sound bulb from Figure 6. This configuration does not have retention arms or the cosmetic bezel. This configuration can be screwed directly into an existing can type lighting fixture where the existing can hardware provides the bezel and bezel retention. A bridge 230 is shown spanning across the housing 220. The bridge has an LED cluster light 231 to provide illumination. The bridge may be constructed for use with a plurality of individual LEDs that spread the light. The bridge 230 is constructed as a heat sink to provide cooling to the lighting element 231. This configuration shows multiple low frequency speakers 241 and multiple higher frequency speakers 242. The quantity and placement of the speakers is variable based upon the sound quality, volume and timbre. The receiver and or digital signal processor is located with the housing 220.

[Para 51] Thus, specific embodiments of a combination sound and light producing fixture and bulb have been disclosed. It should be apparent, however, to those skilled in the art that many more modifications besides those described are possible without departing from the inventive concepts herein. The inventive subject matter, therefore, is not to be restricted except in the spirit of the appended claims.

CLAIM OR CLAIMS

[Claim 1] A combination speaker lighting bulb comprising:

at least one light emitting illumination element, in combination with

at least one sound emitting element;

a light reflecting element that reflects light from said at least one light emitting illumination element into a plurality of directions;

an electrical connector configured for engage into a lighting socket, wherein

said electrical connector provides power to said at least one low voltage illumination element and said at least one sound emitting element.

[Claim 2] The combination speaker lighting bulb according to claim 1 in which said light reflecting element is a bugle-head reflector.

[Claim 3] The combination speaker lighting bulb according to claim 2 wherein said bugle-head reflector has an opening at the apex of said bugle-head reflector.

[Claim 4] The combination speaker lighting bulb according to claim 3 that further includes a horn that reflects illumination emitted through said opening.

[Claim 5] The combination speaker lighting bulb according to claim 1 in which said bulb further includes a digital signal processor to at least partially modulate a signal to the sound emitting element.

[Claim 6] The combination speaker lighting bulb according to claim 1 that further includes a wireless receiver to receive a wireless signal that is transmitted through said at least one sound emitting element.

[Claim 7] A combination speaker lighting bulb comprising:

an electrical base configured for insertion into a standard illumination base;

a housing secured to said electrical base providing a structural to support a lamp shade;

a power conversion circuit for converting electrical power from said electrical base into voltage to power at least one illumination element, a signal processor, an amplifier and at least one sound emitting element, wherein

said digital signal processor at least partially modulates a signal to said sound emitting element.

[Claim 8] The combination speaker lighting bulb according to claim 7 in which the fixture further includes a wireless receiver to receive a signal that is transmitted out of said at least one sound emitting element.

[Claim 9] The combination speaker lighting bulb according to claim 7 that further includes a wireless receiver to receive a wireless signal that is transmitted through said at least one sound emitting element.

[Claim 10] A combination speaker lighting bulb comprising:

an electrical base configured for insertion into a standard illumination base;

a housing having a back end secured to said electrical base providing a structural to support at least one illumination element and at least one sound producing element;

said housing having a front end with at least one sound producing element, and

said front end further having at least one light producing element located in front of said at least one sound producing element.

[Claim 11] The combination speaker lighting bulb from claim 10 wherein said at least one illumination element is secured to said housing with a connection mechanism that spans above said at least one sound producing element.

[Claim 12] The combination speaker lighting bulb from claim 11 wherein said securing to said housing spans across the sides of said housing and over said at least one sound producing element.

[Claim 13] The combination speaker lighting bulb from claim 10 wherein said at least one light producing element is a cluster LED.

[Claim 14] The combination speaker lighting bulb according to claim 10 that further includes a wireless receiver to receive a signal that is transmitted out of said at least one sound emitting element.

[Claim 15] The combination speaker lighting bulb according to claim 10 that further includes digital signal processor at least partially modulates a signal to said at least one sound emitting element.

AMENDED CLAIMS
received by the International Bureau on 12 February 2010 (12.02.2010)

- Claim 1 A combination speaker lighting bulb comprising:
- at least one light emitting illumination element, in combination with
 - at least one sound emitting element;
 - a light reflecting element that reflects light from said at least one light emitting illumination element into a plurality of directions;
 - said light reflecting element is a bugle-head reflector having both an internal hole for light to shine through said bugle-head reflector and a parabolic outer surface to reflect light away from said bugle-head reflector;
 - an electrical connector configured for engage into a lighting socket, wherein
 - said electrical connector provides power to said at least one low voltage illumination element and said at least one sound emitting element.
- Claim 2
- Claim 3 The combination speaker lighting bulb according to claim 1 wherein said bugle-head reflector has an opening at the apex of said bugle-head reflector.
- Claim 4 The combination speaker lighting bulb according to claim 3 that further includes a horn that reflects illumination emitted through said opening.
- Claim 5 The combination speaker lighting bulb according to claim 1 in which said bulb further includes a digital signal processor to at least partially modulate a signal to the sound emitting element.
- Claim 6 The combination speaker lighting bulb according to claim 1 that further includes a wireless receiver to receive a wireless signal that is transmitted through said at least one sound emitting element.

Claim 7 A combination speaker lighting bulb comprising:

a male threaded electrical base configured for insertion into a standard illumination female socket base;

a housing secured to said male threaded electrical base providing a structural support to support a lamp shade;

a power conversion circuit for converting electrical power from said electrical base into voltage to power at least one illumination element, a signal processor, an amplifier and at least one sound emitting element, wherein

said digital signal processor at least partially modulates a signal to said sound emitting element.

Claim 8 The combination speaker lighting bulb according to claim 7 in which the fixture further includes a wireless receiver to receive a signal that is transmitted out of said at least one sound emitting element.

Claim 9 The combination speaker lighting bulb according to claim 7 that further includes a wireless receiver to receive a wireless signal that is transmitted through said at least one sound emitting element.

STATEMENT UNDER ARTICLE 19 (1)

Novelty

The examiner identifies that Haase discloses a combination speaker lighting bulb that emits light in a plurality of directions in claim 1. The applicant has amended claim 1 to include the limitation of claim 2 and has further added limitations to claim 1 that distinguishes claim 1 from the Marshall reference. In the Marshall reference the light is shined through the opening of the reflector, as shown in figure 5. In the pending application the bugle-headed reflector uses both the inner clearance hole to shine light outward and as the outer surface of the reflector to shine light out the sides. The reflector in Marshall focuses the light and mixes light from different colored LED's. There is no disclosure in Marshall or in Haase for light to be reflected out the front and separately out the sides of the sound light bulb.

Regarding claims 3 and 4 supra the argument for claim 1

The examiner has rejected claim 7 with a combination of Haase and Ivey. The examiner has more specifically identified paragraph 0053 of Ivey. Paragraph 0053 references figure 8A where the speaker is located on the bottom of the lamp pole and the standard light bulb is located on the top of the lamp pole. The applicant has amended claim 7 to further limit the structure for the base of the speaker lighting bulb. These limitations identify that the structure that supports a lampshade is supported through the male threaded base of the speaker lighting bulb. In the Ivey reference there is no lamp shade and the light bulb is free standing without a lamp shade being connected to the bulb or the threaded base of the light bulb.

A prior art reference "must be considered in its entirety, i.e., as a whole, including portions that would lead away from the invention..." It is error to "focus on isolated minutiae in a prior art patent while disregarding its scope, i.e., its entire disclosure, and how its disclosed structure works". *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568, 1574, (1 USPQ2d 1593, 1597, 1602, (Fed. Cir. 1987).

Original Claims: 4, 5, 6, 8 and 9

Currently amended claims: 1, 3 and 7

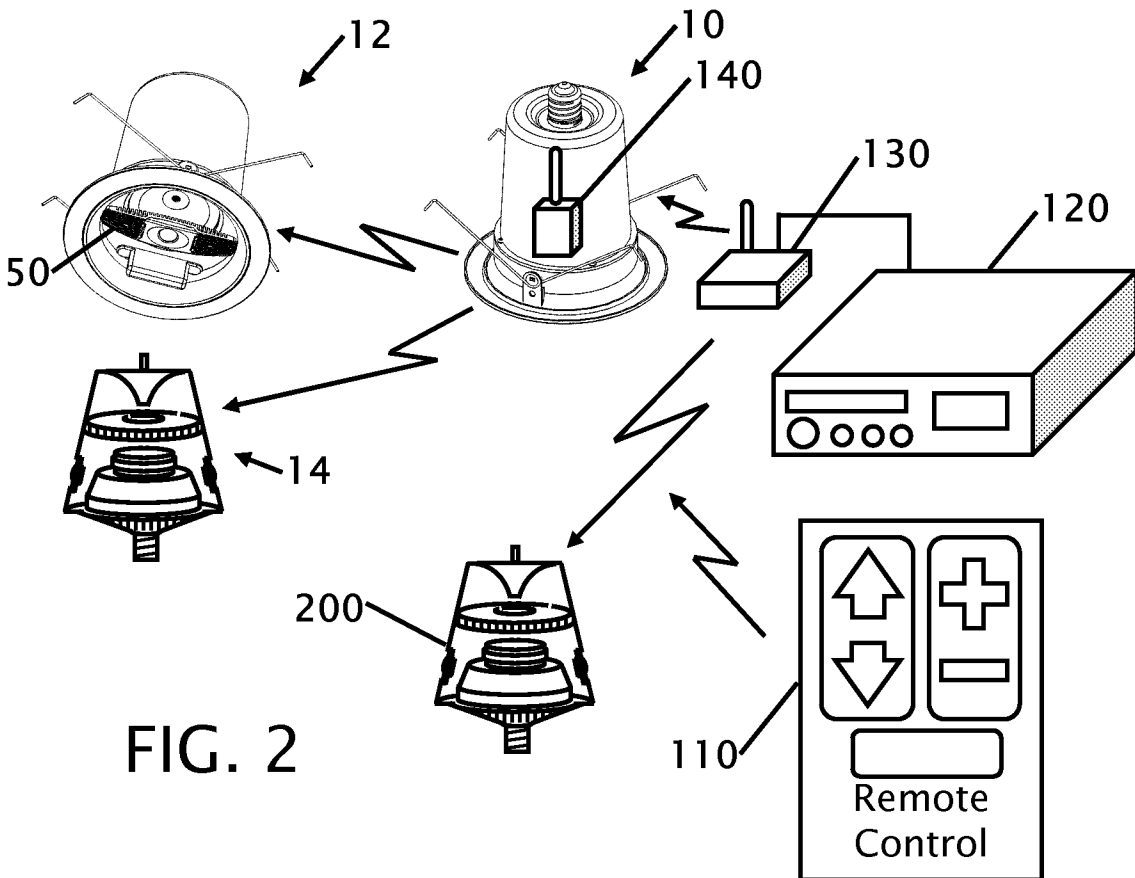
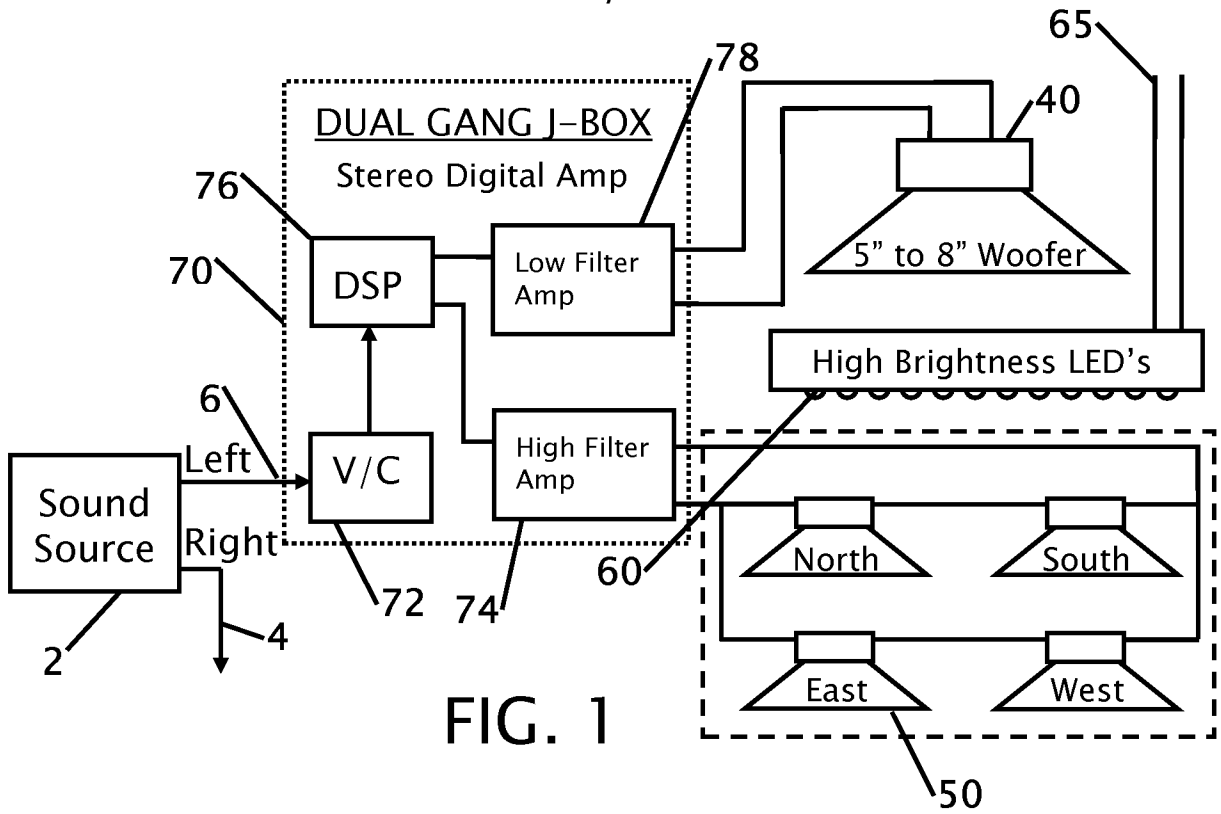
Canceled Claims: 2, 10, 11, 12, 13, 14 and 15

The applicant respectfully requests further consideration of the amended claims and additional search if required to determine novelty.

Respectfully submitted,
BUHLER & ASSOCIATES

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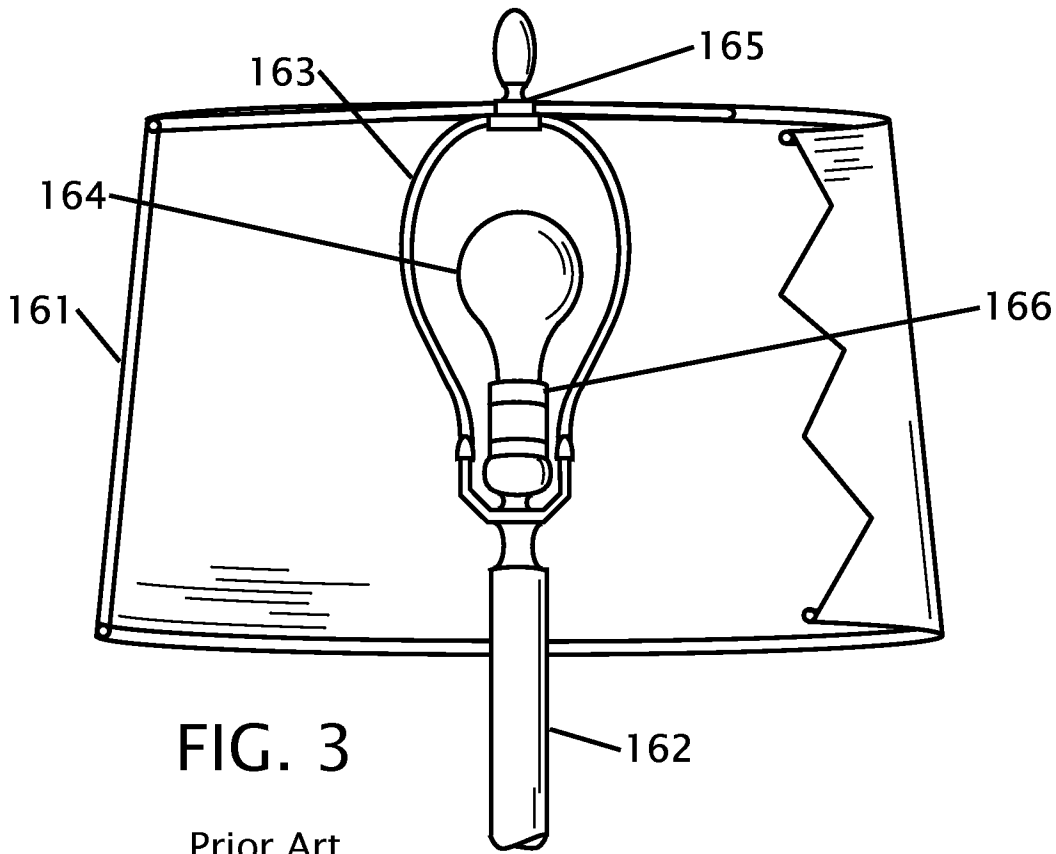


FIG. 3

Prior Art

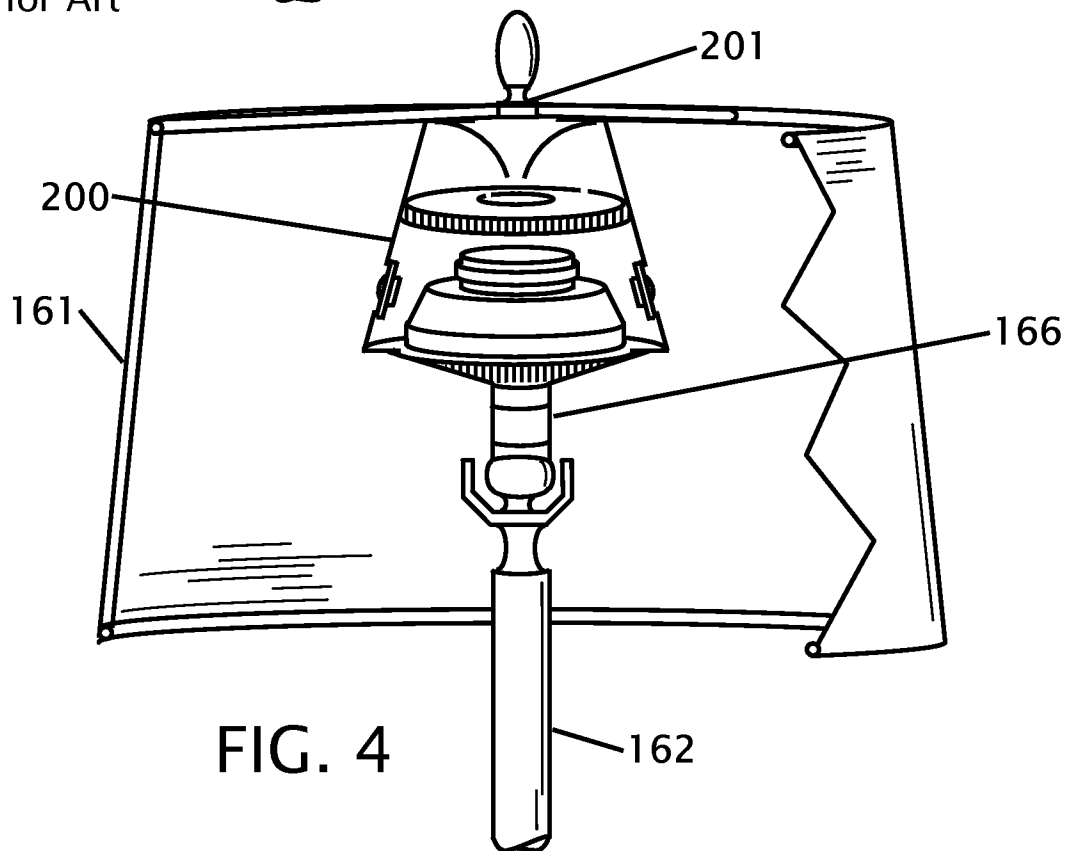


FIG. 4

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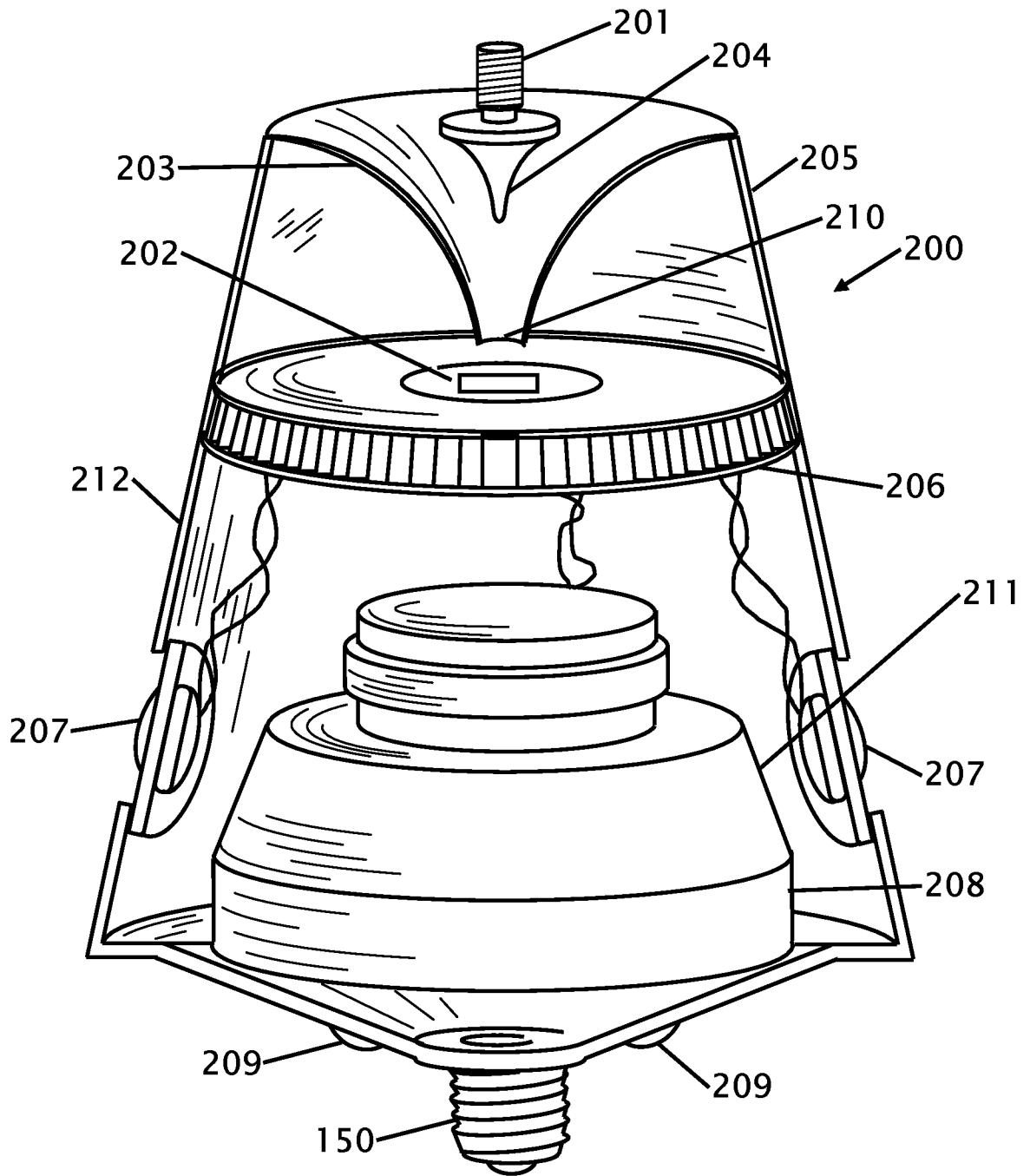


FIG. 5

FIG. 6

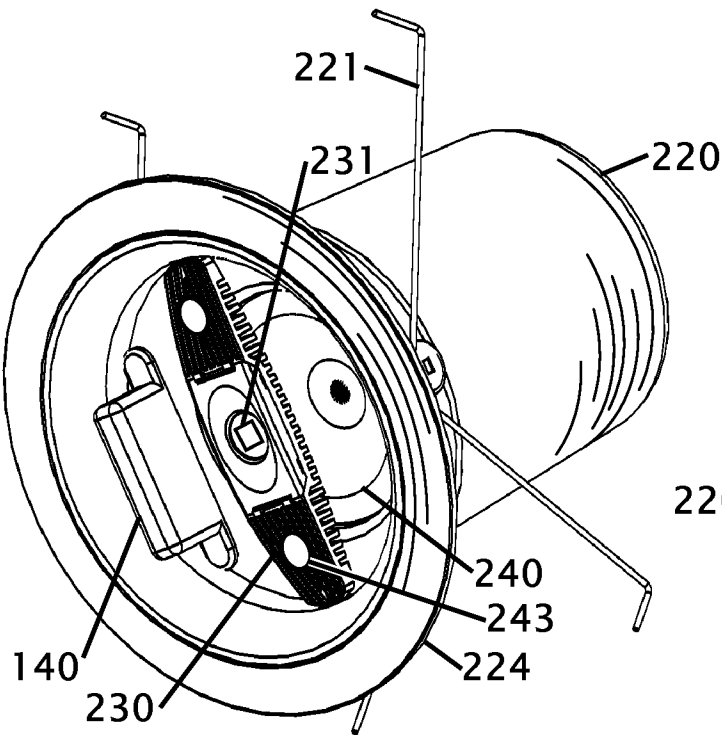
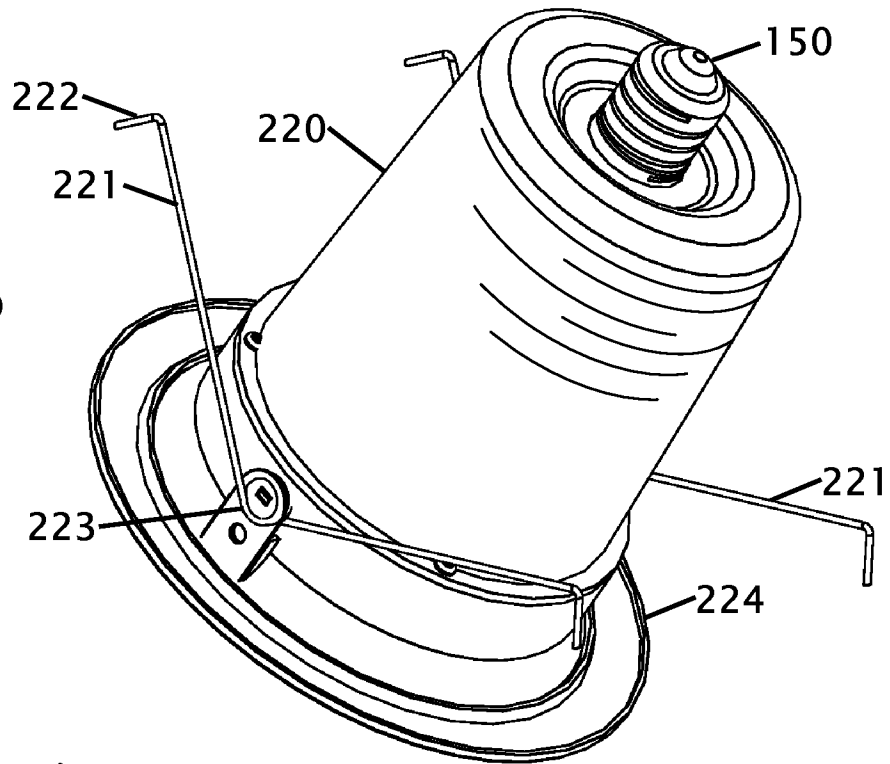


FIG. 7

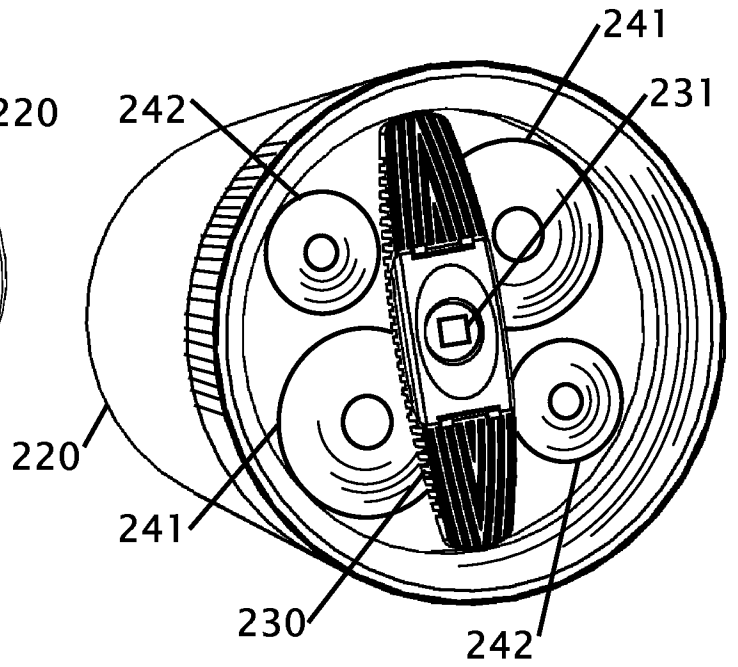


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 09/61129

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F21V 33/00 (2009.01)

USPC - 362/253

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 362/253Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 340/326,815.69; 362/86,253,257,297,311.02,341,800Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST(USPT,PGPB,EPAB,JPAB); Google Patents
Search Terms: speaker, light, bugle, horn, reflector, screw, sound, led, bulb

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2008/0143495 A1 (Haase) 19 June 2008 (19.06.2008), para [0008], [0011], [0015], [0018], [0028], [0031], [0037], [0040], [0045]	1, 5, 6, 10-15 ----- 2-4, 7-9
Y	US 6,200,002 B1 (Marshall et al.) 13 March 2001 (13.03.2001), col 2, ln 5-10	2-4
Y	US 2009/0067663 A1 (Ivey et al.) 12 March 2009 (12.03.2009), para [0053]	7-9

 Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

06 December 2009 (06.12.2009)

Date of mailing of the international search report

14 DEC 2009

Name and mailing address of the ISA/US

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