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TURN LAMPS AND SIDE MARKER LAMPS FOR FRONT AND REAR OF A VEHICLE

Abstract

An integrated assembly of turn signal light source and a side marker light source is implemented for a vehicle. The assembly may be one of several assemblies for the vehicle. Multiple assemblies may be carried by bumper (e.g., front bumper and rear bumper) of the vehicle. For example, the assembly may be located at each of a front driver's side corner and a passenger's side corner, with each assembly positioned in the front bumper. Additionally, the assembly may be located at each of a rear driver's side corner and a passenger's rear corner, with each assembly positioned in the rear bumper.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION(S) [0001] This application claims the benefit of priority to U.S. Provisional Application No. 63/553,599 filed on Feb. 14, 2024, titled “TURN LAMPS AND SIDE MARKER LAMPS FOR FRONT AND REAR OF A VEHICLE”, the disclosure of which is incorporated herein by reference in its entirety.

INTRODUCTION

[0002] The present disclosure is directed to lamps for vehicles, and more particularly, to turn lamps and side marker lamps integrated together in multiple locations of a vehicle.

SUMMARY

[0003] Vehicles may include turn lamps that, when illuminated (e.g., blinking), provide an indication to drivers and passengers in other vehicles, as well as pedestrians, that the vehicle may be turning in a particular direction. Further, vehicles may include side marker lamps that, when illuminated, increase visibility of the vehicle, such as during the night or other low-visibility conditions. Each of the turn lamps and side marker lamps may be located at the front and rear of vehicles. In one or more implementations, both the turn lamp and the side marker lamp are integrated into a single assembly.

[0004] In one or more aspects of the present disclosure, an apparatus is described. The apparatus may include a housing that defines an internal volume. The apparatus may further include a first light source disposed in the internal volume. The first light source may be configured to provide a turn signal for a vehicle. The apparatus may further include a second light source disposed in the internal volume. The second light source may be configured to provide a side marker for the vehicle.

[0005] The housing may be located at a front corner of the vehicle. The housing may be carried within a front bumper of the vehicle. The apparatus may further include a lens covering the first light source and the second light source. The front bumper may include a first curvature, and the lens may include a second curvature that may conform to the first curvature.

[0006] The housing may be located at a rear corner of the vehicle. The housing may be carried within a rear bumper of the vehicle. The apparatus may further include a lens covering the first light source and the second light source. The rear bumper may include a first curvature, and the lens may include a second curvature that may conform to the first curvature.

[0007] In one or more aspects of the present disclosure, a lamp assembly is described. The lamp assembly may include a first light source configured to provide a first indicator for a vehicle. The lamp assembly may further include a second light source configured to provide a second indicator for the vehicle. The first light source may be stacked over the second light source.

[0008] The first light source may include a turn signal for the vehicle. The second light source may include a side marker for the vehicle. The first light source and the second light source may be configured to be located in a housing disposed in a front bumper of the vehicle. Alternatively or in combination, the first light source and the second light source are configured to be located in a housing disposed in a rear bumper of the vehicle.

[0009] The apparatus may further include a lens that covers the first light source and the second light source. The lens may conform to a curvature of a front bumper or a rear bumper. The apparatus may further include a housing. The first light source and the second light source may be carried by the housing.

[0010] In one or more aspects of the present disclosure, a vehicle is described. The vehicle may

include a bumper. The vehicle may further include a lamp assembly carried by the bumper. The lamp assembly may include a housing that defines an internal volume. The lamp assembly may further include a first light source disposed in the internal volume. The first light source may be configured to provide a turn signal for the vehicle. The lamp assembly may further include a second light source disposed in the internal volume. The second light source may be configured to provide a side marker for the vehicle.

[0011] The first light source may be stacked over the second light source. Alternatively, the second light source may be stacked over the first light source. The vehicle may further include a lens covering the first light source and the second light source. The bumper may include a front bumper that may include a first curvature, and the lens may include a second curvature that may conform to the first curvature.

[0012] The vehicle may further include a lens covering the first light source and the second light source. The bumper may include a rear bumper that may include a first curvature, and the lens may include a second curvature that may conform to the first curvature. In this regard, the housing may be located at a front corner of the vehicle or at a rear corner of the vehicle.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Certain features of the subject technology are set forth in the appended claims. However, for purpose of explanation, several embodiments of the subject technology are set forth in the following figures.

[0014] FIG. **1** illustrates a side view of an example of a vehicle, in accordance with one or more aspects of the present disclosure.

[0015] FIG. **2** illustrates a side view of an alternate example of a vehicle, in accordance with one or more aspects of the present disclosure.

[0016] FIG. **3** illustrates a front perspective view of a vehicle showing an example of an apparatus with multiple light sources, in accordance with one or more aspects of the present disclosure.

[0017] FIG. **4**A and FIG. **4**B illustrate front views of the apparatus of the vehicle, showing different light sources in the front of the vehicle illuminated, in accordance with one or more aspects of the present disclosure.

[0018] FIG. **5** illustrates an enlarged view showing a bumper of a vehicle, showing a lamp integrated with the bumper, in accordance with one or more aspects of the present disclosure.

[0019] FIG. **6** illustrates a rear perspective view of a vehicle showing an example of an apparatus with multiple light sources, in accordance with one or more aspects of the present disclosure.

[0020] FIG. **7**A and FIG. **7**B illustrate rear views of the apparatus of the vehicle, showing different light sources in the rear of the vehicle illuminated, in accordance with one or more aspects of the present disclosure.

[0021] FIG. **8** illustrates a rear view of a vehicle, in accordance with one or more aspects of the present disclosure.

[0022] FIG. **9** illustrates a rear view of a vehicle showing an alternate embodiment of an apparatus with multiple rear lights, in accordance with one or more aspects of the present disclosure.

[0023] FIG. **10** illustrates an enlarged rear perspective view of a vehicle showing an alternate embodiment of an apparatus with multiple rear lights, in accordance with one or more aspects of the present disclosure.

[0024] FIG. **11** illustrates a flow diagram showing an example of a process that may be performed for assembling a lamp, in accordance with one or more aspects of the present disclosure.

DETAILED DESCRIPTION

[0025] The detailed description set forth below is intended as a description of various

configurations of the subject technology and is not intended to represent the only configurations in which the subject technology can be practiced. The appended drawings are incorporated herein and constitute a part of the detailed description. The detailed description includes specific details for the purpose of providing a thorough understanding of the subject technology. However, the subject technology is not limited to the specific details set forth herein and can be practiced using one or more other implementations. In one or more implementations, structures and components are shown in block diagram form in order to avoid obscuring the concepts of the subject technology.

[0026] The present disclosure is directed to lamps, including lamp assemblies, for vehicles, including turn lamps and side marker lamps. As shown and/or described herein, lamps for vehicles may include multiple light sources integrated together, with each light source performing a different function. For example, one light source may illuminate in accordance with a frequency to provide a turn signal (e.g., left turn signal, right turn signal) for the vehicle. Another light source may illuminate to provide a side marker for enhanced visibility of the vehicle. By integrating two light sources together that perform different functions, lamps may take on a reduced footprint on the vehicle. Moreover, the lamps may reduce the overall mass of the vehicle (e.g., by reducing the number of housings and other associated components for two separate lamps performing two different functions) as well as the overall cost of the vehicle.

[0027] FIG. **1** illustrates an example of a vehicle **100**, in accordance with one or more aspects of the present disclosure. In the example shown in FIG. **1**, the vehicle **100** takes the form of a truck. Generally, the vehicle **100** may take the form of any motorized vehicle, including motorized vehicles with an internal combustion engine and/or one or more electric motors. Accordingly, other implementations of the vehicle **100** may include land-based vehicles, such as a car (e.g., sedan, hatchback), a van, or a commercial truck, as non-limiting examples.

[0028] The vehicle **100** may include a battery pack **102**. The battery pack **102** may be coupled (e.g., electrically coupled) to one or more electrical systems of the vehicle **100** to provide power to the one or more electrical systems. The vehicle **100** may further include a port **104** (e.g., charge port) designed to receive a cable connector (not shown in FIG. **1**) used to transmit power (e.g., alternating current (AC) power) that is converted to direct current (DC) power to charge the battery pack **102**. The battery pack **102** may couple to a drive unit **110**, representative of one or more drive units of the vehicle **100**. While the drive unit **110** is shown as generally being in the front of the vehicle **100**, the drive unit **110** may be located in the rear of the vehicle **100**. Further, when multiple drive units are used, at least one drive unit may be in the front of the vehicle **100** to drive the front wheels (e.g., wheel **112***a*), and at least one drive unit may be in the rear of the vehicle **100** to drive the rear wheels (e.g., wheel **112***b*). The drive unit **110** may include, for example, a motor, an inverter, a gear box, and a differential. In the example shown in FIG. **1**, the drive unit **110** takes the form of an electric motor. In this regard, the drive unit **110** may use energy (e.g., electrical energy) stored in the battery pack **102** for propulsion in order to drive (e.g., rotationally drive) the wheels of the vehicle **100**. The vehicle **100** may further include a bed **114** that may be used as a storage area for the vehicle **100**. Also, the vehicle **100** may include a bumper **116** (e.g., front bumper) and a bumper **118** (e.g., rear bumper).

[0029] FIG. **2** illustrates a side view of an alternate example of a vehicle **200**, in accordance with one or more aspects of the present disclosure. As shown, the vehicle **200** takes the form of a sport utility vehicle (SUV). The vehicle **200** may include several features similar in design and function as shown and/or described for the vehicle **100** (shown in FIG. **1**). For example, the vehicle **200** may include a battery pack **202**, a port **204** (e.g., charge port), a drive unit **210** (representative of one or more additional drive units), a wheel **212***a* (representative of an additional front wheel), and a wheel **212***b* (representative of an additional rear wheel), a bumper **216**, and a bumper **218**.

[0030] FIGS. **3-10** show various examples of vehicles with lamps that may be integrated into a housing, or enclosure. Also, each lamp may include two or more light sources. The vehicles shown in FIG. **3-8** may take the form of a truck (e.g., vehicle **100** shown in FIG. **1**) or an SUV (e.g.,

vehicle **200** shown in FIG. **2**).

[0031] FIG. **3** illustrates a front perspective view of a vehicle **300** showing an example of an apparatus **320** with multiple light sources, in accordance with one or more aspects of the present disclosure. As shown, the apparatus **320** (e.g., lamp assembly) is positioned in and carried by a bumper **316** (e.g., front bumper) of the vehicle **300**. The apparatus **320** may be representative of an additional apparatus (not shown in FIG. **3**) positioned in and carried by the bumper **316**. In this regard, the apparatus **320** is shown in a front driver corner of the bumper **316** of the vehicle **300** and the additional apparatus may be located in a front passenger corner of the bumper **316** of the vehicle **300**.

[0032] As shown in the enlarged view, the apparatus **320** includes a light source **322***a* and a light source **322***b*. Each of the light sources **322***a* and **322***b* may take the form of a light-emitting diode (LED) or an incandescent bulb, as non-limiting examples. Each of the light sources **322***a* and **322***b* may perform different functions for the vehicle **300**. For example, the light source **322***a* may function as a turn signal (e.g., left turn signal). In this regard, the light source **322***a*, when operational, may illuminate by blinking (e.g., turn on and off) to provide an indication the vehicle **300** is turning in the direction of the light source **322***a*. The light source **322***b* may function as a side marker for the vehicle **300**. In this regard, the light source **322***b* may illuminate to provide enhanced visibility for the vehicle **300**. Accordingly, each of the light sources **322***a* and **322***b* may provide a different type of indication. As shown, the light source **322***a* is centrally located relative to the light source **322***b*, thus the turn signal is centrally located relative to the side marker. However, in other implementations, the functionality is reversed.

[0033] Additionally, the apparatus **320** may include a housing **324** that provides an internal volume, allowing the housing **324** to carry both of the light sources **322***a* and **322***b*. Put another way, the lights sources **322***a* and **322***b* may be disposed in the housing **324**. In this regard, the light sources **322***a* and **322***b* are generally in the same location in the bumper **316** of the vehicle **300**. The apparatus **320** may further include a lens **326** coupled with the housing **324** and covering the light sources **322***a* and **322***b*. The lens **326** may include a curved surfaced to match the curvature of the bumper **316**. For example, the bumper **316** may include a curvature (e.g., curved surface) and the lens **326** may include a curvature that conforms to the curvature of the bumper **316**.

[0034] FIG. **4**A and FIG. **4**B illustrate front views of the apparatus **320** of the vehicle **300**, showing different light sources illuminated, in accordance with one or more aspects of the present disclosure. Referring to FIG. **4**A, the light source **322***a* is illuminated. Conversely, referring to FIG. **4**B, the light source **322***b*, is illuminated. FIG. **4**A and FIG. **4**B show the lights sources **322***a* and **322***b*, when implemented as a turn signal and a side marker, respectively, may be positioned adjacent and laterally with respect to each other.

[0035] FIG. **5** illustrates an enlarged view showing the bumper **316** of the vehicle **300**, showing a lamp integrated with the bumper, in accordance with one or more aspects of the present disclosure. As shown, the bumper **316** may include a surface **327** that is planar (e.g., vertical), or substantially planar. The apparatus **320** may include an inboard apparatus. In this regard, the lens **326** of apparatus **320** may be an inboard lens. For example, the lens **326** may be angled approximately in the range of 30 to 50 degrees relative to the surface **327**. In one or implementations, the angle is 45 degrees relative to the surface. Based on the inboard design, the apparatus **320** may be positioned inward with respect to the surface **327**. Put another way, the surface **327** may extend beyond (e.g., in the Y-direction of Cartesian coordinates) the apparatus **320**. In this regard, the apparatus **320** may be hidden, or at least partially hidden or relatively less visible, by the bumper **316** until at least one of the light source **322***a* or the light source **322***b* is illuminated. Although not shown, the apparatus **320** may alternatively include an outboard apparatus, and the lens **326** may extend laterally beyond the surface **327**.

[0036] FIG. **6** illustrates a rear perspective view of the vehicle **300** showing an example of an apparatus **330** with multiple light sources, in accordance with one or more aspects of the present

disclosure. As shown, the apparatus **330** (e.g., lamp assembly) is positioned in and carried by a bumper **318** (e.g., rear bumper) of the vehicle **300**. The apparatus **330** may be representative of an additional apparatus (not shown in FIG. **3**) positioned in and carried by the bumper **318**. In this regard, the apparatus **330** is shown in a rear driver corner of the bumper **318** of the vehicle **300** and the additional apparatus may be located in a rear passenger corner of the bumper **318** of the vehicle **300**.

[0037] As shown in the enlarged view, the apparatus **330** includes a light source **332***a* and a light source **332***b*. Each of the light sources **332***a* and **332***b* may each take the form of a light-emitting diode (LED) or an incandescent bulb, as non-limiting examples. Each of the light sources **332***a* and **332***b* may perform different functions for the vehicle **300**. For example, the light source **332***a* may function as a turn signal (e.g., left turn signal). In this regard, the light source **332***a*, when operational, may illuminate by blinking (e.g., turn on and off) to provide an indication the vehicle **300** is turning in the direction of the light source **332***a*. The light source **332***b* may function as a side marker for the vehicle **300**. In this regard, the light source **332***b* may illuminate to provide enhanced visibility for the vehicle **300**. Accordingly, each of the light sources **332***a* and **332***b* may provide a different type of indication. As shown, the light source **332***a* is centrally located relative to the light source **332***b*, thus the turn signal is centrally located relative to the side marker. However, in other implementations, the functionality is reversed.

[0038] Additionally, the apparatus **330** may include a housing **334** that provides an internal volume, allowing the housing **334** to carry both of the light sources **332***a* and **332***b*. Put another way, the lights sources **332***a* and **332***b* may be disposed in the housing **334**. In this regard, the light sources **332***a* and **332***b* are generally in the same location of the vehicle **300**. The apparatus **330** may further include a lens **336** coupled with the housing **334** and covering the light sources **332***a* and **332***b*. The lens **336** may include a curved surfaced to match the curvature of the bumper **318**. For example, the bumper **318** may include a curvature (e.g., curved surface) and the lens **336** may include a curvature that conforms to the curvature of the bumper **318**.

[0039] Also, the vehicle **300** may include a body **301** (e.g., vehicle body) and a closure **338** rotationally coupled with the body **401**. In one or more implementations, the closure **338** takes the form of a liftgate that rotates and generally moves in the Z-direction when opened. The apparatus **330** further includes an apparatus **331** that includes a light source **333** that functions as a braking light that illuminates when a brake pedal (not shown in FIG. **6**) of the vehicle **300** is depressed. In one or more implementations, the apparatus **331** includes at least two additional light sources, with one light source functioning as a left turn signal and another light source functioning as a right turn signal. As shown, the apparatus **331** is located on the closure **338**. Accordingly, movement of the closure **338** will also cause movement of the apparatus **331**.

[0040] FIG. **7**A and FIG. **7**B illustrate the apparatus **330**, showing different light sources illuminated, in accordance with one or more aspects of the present disclosure. Referring to FIG. **7**A, the light source **332***a* is illuminated. Conversely, referring to FIG. **7**B, the light source **332***b*, is illuminated. FIG. **7**A and FIG. **7**B (?) show the lights sources **332***a* and **332***b*, when implemented as a turn signal and a side marker, respectively, may be positioned adjacent and laterally with respect to each other. Additionally, the apparatus **330** may take the form of an inboard apparatus, and accordingly, the lens **336** (shown in FIG. **6**) of the apparatus **330** may take the form of an inboard lens. In this regard, the apparatus **330** may be hidden, or at least partially hidden or relatively less visible, by the bumper **318** until at least one of the light source **332***a* or the light source **332***b* is illuminated.

[0041] FIG. **8** illustrates a rear view of an alternate embodiment of a vehicle **400**, in accordance with one or more aspects of the present disclosure. Although not shown, the vehicle **400** may include a front bumper similar to the bumper **316** (shown in FIG. **3**). Accordingly, the vehicle **400** may include multiple apparatuses similar to the apparatus **320** (shown in FIG. **3**). However, the vehicle **400** may include some light sources in different positions in the rear portion. For example,

the vehicle **400** may include a body **401** (e.g., vehicle body) and a closure **438** rotationally coupled with the body **401**. In one or more implementations, the closure **438** takes the form of a liftgate that rotates and generally moves in the Z-direction when opened.

[0042] The vehicle **400** may include an apparatus **430***a*, an apparatus **430***b*, and an apparatus **430***c*. The apparatus **430***a* may include a light source **432***a* and a light source **432***b*. The light source **432***a* may function as a turn signal (e.g., left turn signal). In this regard, the light source **432***a*, when operational, may illuminate by blinking (e.g., turn on and off) to provide an indication the vehicle **300** is turning in the direction of the light source **432***a*. The light source **432***b* may function as a side marker for the vehicle **400**. Similarly, the apparatus **430***b* may include a light source **432***c* and a light source **432***d* that functions as a turn signal (e.g., right turn signal) and a side marker, respectively. Unlike prior embodiments in which an apparatus is integrated with a bumper (e.g., bumper **418**) of a vehicle, the apparatus **430***a* and the apparatus **430***b* are positioned on the body **401**. The apparatus **430***c* may include a light source **433** that functions as a braking light that illuminates when a brake pedal (not shown in FIG. **8**) of the vehicle **400** is depressed. As shown, the apparatus **430***c* is located on the closure **438**. Accordingly, movement of the closure **438** will also cause movement of the apparatus **430***c*.

[0043] FIG. **9** illustrates a rear view of a vehicle **500** showing an alternate embodiment of an apparatus **530** with multiple rear lights, in accordance with one or more aspects of the present disclosure. As shown, the apparatus **530** includes a light source **532***a*, a light source **532***b*, and a light source **532***c*. The apparatus **530** is positioned in and carried by a bumper **518** (e.g., rear bumper) of the vehicle **500**, and is representative of an additional apparatus (not shown in FIG. **9**) of the vehicle **500**. As non-limiting examples, the light source **532***a* may take the form of a turn signal, the light source **532***b* may take the form of a side marker, and the light source **532***c* make take the form of a reflex light source. As shown, the light sources **532***a*, **532***b*, and **532***c* are in a stacked configured, with the light source **532***c* stacked over the light source **532***a* and the light source **532***b* stacked over the light sources **532***a* and **532***c*.

[0044] FIG. **10** illustrates a rear view of a vehicle **600** showing an alternate embodiment of an apparatus **630** with multiple rear lights, in accordance with one or more aspects of the present disclosure. As shown, the apparatus **630** includes a light source **632***a* and a light source **632***b*.

[0045] The apparatus **630** is positioned in and carried by a tailgate **640** of the vehicle **600**, and is representative of an additional apparatus (not shown in FIG. **19**) of the vehicle **600**. As non-limiting examples, the light source **632***a* may take the form of a turn signal and the light source **632***b* may take the form of a side marker. As shown, the light sources **632***a* and **632***b* are in a stacked configured, with the light source **632***a* stacked over the light source **632***b*.

[0046] FIG. **11** illustrates a flow diagram showing example of a process **700** that may be performed for assembling a head lamp, in accordance with one or more aspects of the present disclosure. For explanatory purposes, the process **700** primarily described herein with reference to the lamps (e.g., head lamps) shown and/or described in FIGS. **3-10** and the accompanying portions of this detailed description. However, the process **700** are not limited to the lamps (e.g., apparatus) shown and/or described in FIGS. **3-10**, and one or more blocks (or operations) of the process **700** may be performed by one or more other components of other suitable moveable apparatuses, devices, or systems. Further for explanatory purposes, some of the blocks of the process **700** are described herein as occurring in serial, or linearly. However, multiple blocks of the process **700** may occur in parallel. In addition, the blocks of the process **700** need not be performed in the order shown and/or one or more blocks of the process need not be performed and/or can be replaced by other operations.

[0047] At block **702**, a housing is provided. The housing may be positioned in a bumper, such as a front bumper and/or a rear bumper of a vehicle.

[0048] At block **704**, a first light source is provided in the housing. The first light source make take the form of a turn signal.

[0049] At block **706**, a second light source is provided in the housing. The second light source make take the form of a side marker. The first light source and the second light source may be adjacent to each other, or conversely, may be in a stacked configuration.

[0050] As used herein, the phrase “at least one of” preceding a series of items, with the term “and” or “or” to separate any of the items, modifies the list as a whole, rather than each member of the list (i.e., each item). The phrase “at least one of” does not require selection of at least one of each item listed; rather, the phrase allows a meaning that includes at least one of any one of the items, and/or at least one of any combination of the items, and/or at least one of each of the items. By way of example, the phrases “at least one of A, B, and C” or “at least one of A, B, or C” each refer to only A, only B, or only C; any combination of A, B, and C; and/or at least one of each of A, B, and C.

[0051] When an element is referred to herein as being “connected” or “coupled” to another element, it is to be understood that the elements can be directly connected to the other element, or have intervening elements present between the elements. In contrast, when an element is referred to as being “directly connected” or “directly coupled” to another element, it should be understood that no intervening elements are present in the “direct” connection between the elements. However, the existence of a direct connection does not exclude other connections, in which intervening elements may be present.

[0052] The predicate words “configured to”, “operable to”, and “programmed to” do not imply any particular tangible or intangible modification of a subject, but, rather, are intended to be used interchangeably. In one or more implementations, a processor configured to monitor and control an operation or a component may also mean the processor being programmed to monitor and control the operation or the processor being operable to monitor and control the operation. Likewise, a processor configured to execute code can be construed as a processor programmed to execute code or operable to execute code.

[0053] Phrases such as an aspect, the aspect, another aspect, some aspects, one or more aspects, an implementation, the implementation, another implementation, some implementations, one or more implementations, an embodiment, the embodiment, another embodiment, some embodiments, one or more embodiments, a configuration, the configuration, another configuration, some configurations, one or more configurations, the subject technology, the disclosure, the present disclosure, other variations thereof and alike are for convenience and do not imply that a disclosure relating to such phrase(s) is essential to the subject technology or that such disclosure applies to all configurations of the subject technology. A disclosure relating to such phrase(s) may apply to all configurations, or one or more configurations. A disclosure relating to such phrase(s) may provide one or more examples. A phrase such as an aspect or some aspects may refer to one or more aspects and vice versa, and this applies similarly to other foregoing phrases.

[0054] The word “exemplary” is used herein to mean “serving as an example, instance, or illustration”. Any embodiment described herein as “exemplary” or as an “example” is not necessarily to be construed as preferred or advantageous over other embodiments. Furthermore, to the extent that the term “include”, “have”, or the like is used in the description or the claims, such term is intended to be inclusive in a manner similar to the term “comprise” as “comprise” is interpreted when employed as a transitional word in a claim.

[0055] All structural and functional equivalents to the elements of the various aspects described throughout this disclosure that are known or later come to be known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the claims. Moreover, nothing disclosed herein is intended to be dedicated to the public regardless of whether such disclosure is explicitly recited in the claims. No claim element is to be construed under the provisions of 35 U.S.C. § 112, sixth paragraph, unless the element is expressly recited using the phrase “means for” or, in the case of a method claim, the element is recited using the phrase “step for”.

[0056] The previous description is provided to enable any person skilled in the art to practice the

various aspects described herein. Various modifications to these aspects will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other aspects. Thus, the claims are not intended to be limited to the aspects shown herein, but are to be accorded the full scope consistent with the language claims, wherein reference to an element in the singular is not intended to mean “one and only one” unless specifically so stated, but rather “one or more”. Unless specifically stated otherwise, the term “some” refers to one or more. Pronouns in the masculine (e.g., his) include the feminine and neuter gender (e.g., her and its) and vice versa. Headings and subheadings, if any, are used for convenience only and do not limit the subject disclosure.

Claims

1. An apparatus, comprising: a housing that defines an internal volume; a first light source disposed in the internal volume, the first light source configured to provide a turn signal for a vehicle; and a second light source disposed in the internal volume, the second light source configured to provide a side marker for the vehicle.
2. The apparatus of claim 1, wherein the housing is located at a front corner of the vehicle.
3. The apparatus of claim 2, wherein the housing is carried within a front bumper of the vehicle.
4. The apparatus of claim 3, further comprising a lens covering the first light source and the second light source, wherein: the front bumper comprises a first curvature, and the lens comprises a second curvature that conforms to the first curvature.
5. The apparatus of claim 1, wherein the housing is located at a rear corner of the vehicle.
6. The apparatus of claim 5, wherein the housing is carried within a rear bumper of the vehicle.
7. The apparatus of claim 6, further comprising a lens covering the first light source and the second light source, wherein: the rear bumper comprises a first curvature, and the lens comprises a second curvature that conforms to the first curvature.
8. A lamp assembly, comprising: a first light source configured to provide a first indicator for a vehicle; and a second light source configured to provide a second indicator for the vehicle, wherein the first light source is stacked over the second light source.
9. The lamp assembly of claim 8, wherein the first light source comprises a turn signal for the vehicle.
10. The lamp assembly of claim 8, wherein the second light source comprises a side marker for the vehicle.
11. The lamp assembly of claim 8, wherein the first light source and the second light source are configured to be located in a housing disposed in a front bumper of the vehicle.
12. The lamp assembly of claim 8, wherein the first light source and the second light source are configured to be located in a housing disposed in a rear bumper of the vehicle.
13. The lamp assembly of claim 8, further comprising a lens that covers the first light source and the second light source, wherein the lens conforms to a curvature of a front bumper or a rear bumper.
14. The lamp assembly of claim 8, further comprising a housing, wherein the first light source and the second light source are carried by the housing.
15. A vehicle, comprising: a bumper; a lamp assembly carried by the bumper, the lamp assembly comprising: a housing that defines an internal volume; a first light source disposed in the internal volume, the first light source configured to provide a turn signal for the vehicle; and a second light source disposed in the internal volume, the second light source configured to provide a side marker for the vehicle.
16. The vehicle of claim 15, wherein the first light source is stacked over the second light source.
17. The vehicle of claim 15, wherein the second light source is stacked over the first light source.
18. The vehicle of claim 15, further comprising a lens covering the first light source and the second

light source, wherein: the bumper comprises a front bumper that includes a first curvature, and the lens comprises a second curvature that conforms to the first curvature.

19. The vehicle of claim 15, further comprising a lens covering the first light source and the second light source, wherein: the bumper comprises a rear bumper that includes a first curvature, and the lens comprises a second curvature that conforms to the first curvature.

20. The vehicle of claim 15, wherein the housing is located at a front corner of the vehicle or at a rear corner of the vehicle.