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(54) **EXTERIOR REARVIEW MIRROR OR WINGLET FOR A VEHICLE HAVING AN ELECTRICAL DEVICE ATTACHED TO A HOUSING**

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(52) **U.S. Cl.**

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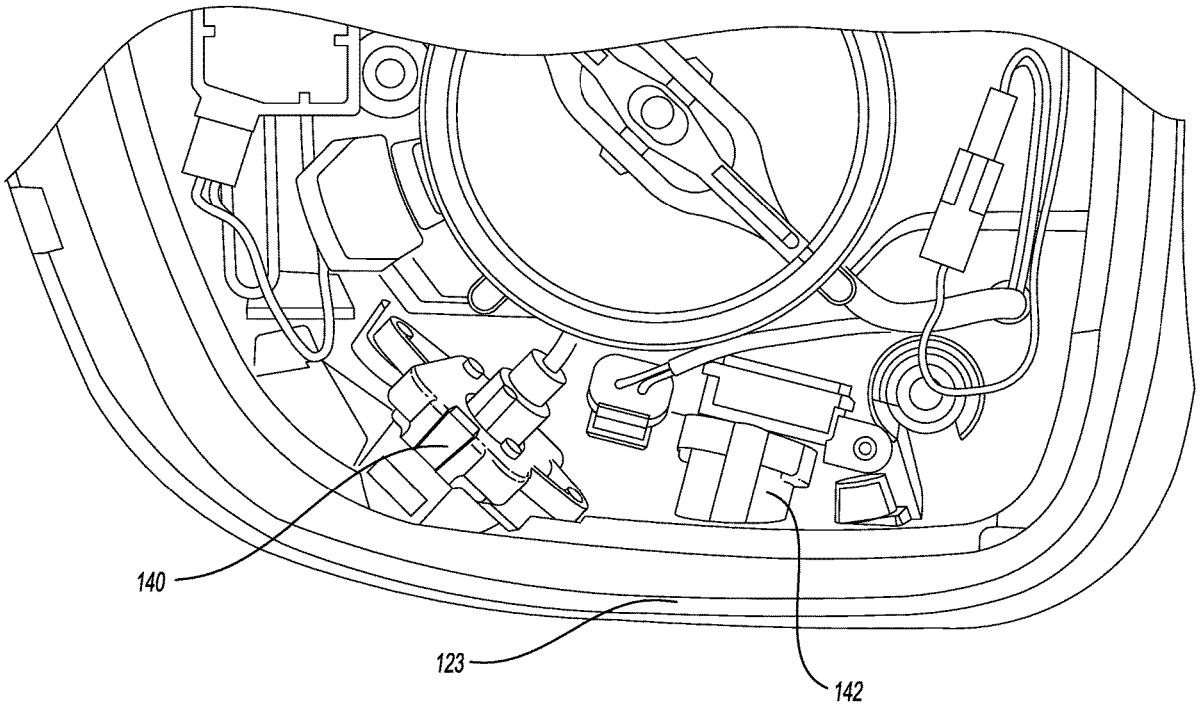
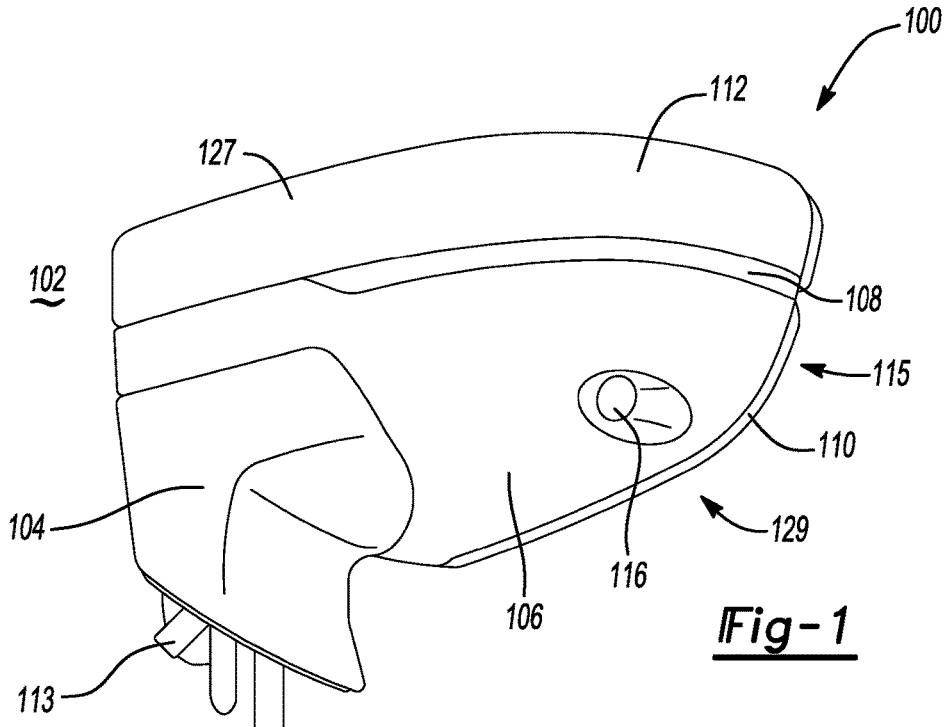
(57) **ABSTRACT**

In at least one embodiment, an exterior rearview winglet assembly for a vehicle is provided. The assembly includes an exterior shell, a base bracket, a first housing, a finisher, and a first electrical device. The exterior shell includes a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle. The base bracket is positioned in the exterior shell to couple the exterior shell to the vehicle. The first housing is positioned in the exterior shell. The finisher is being attached to the first housing and extending from at least a portion of the exterior shell at the second side of the exterior shell. The first electrical device is directly attached to the first housing and the first electrical device is independent of attachment to the finisher.

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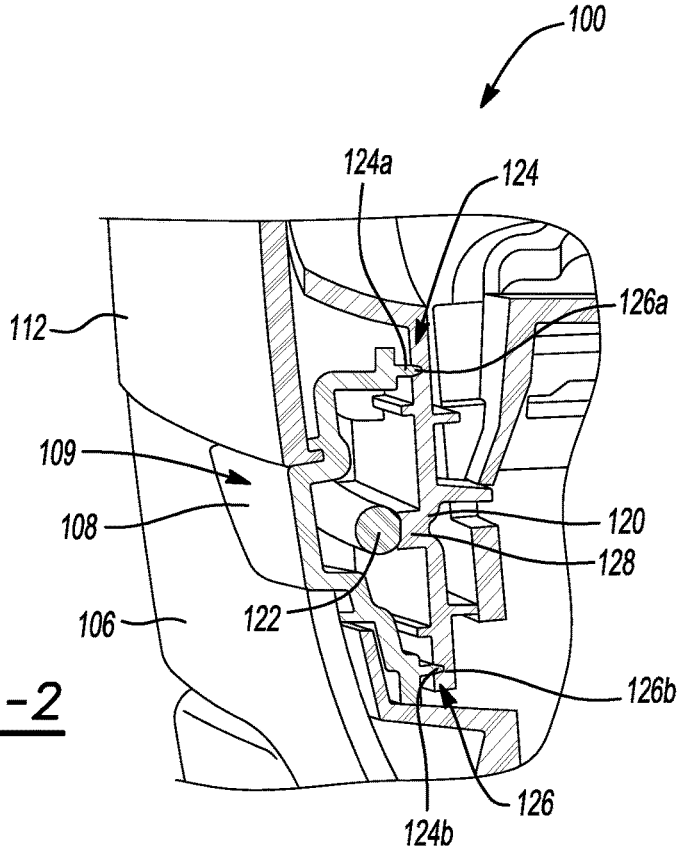
114

Fig-1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124a
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126a
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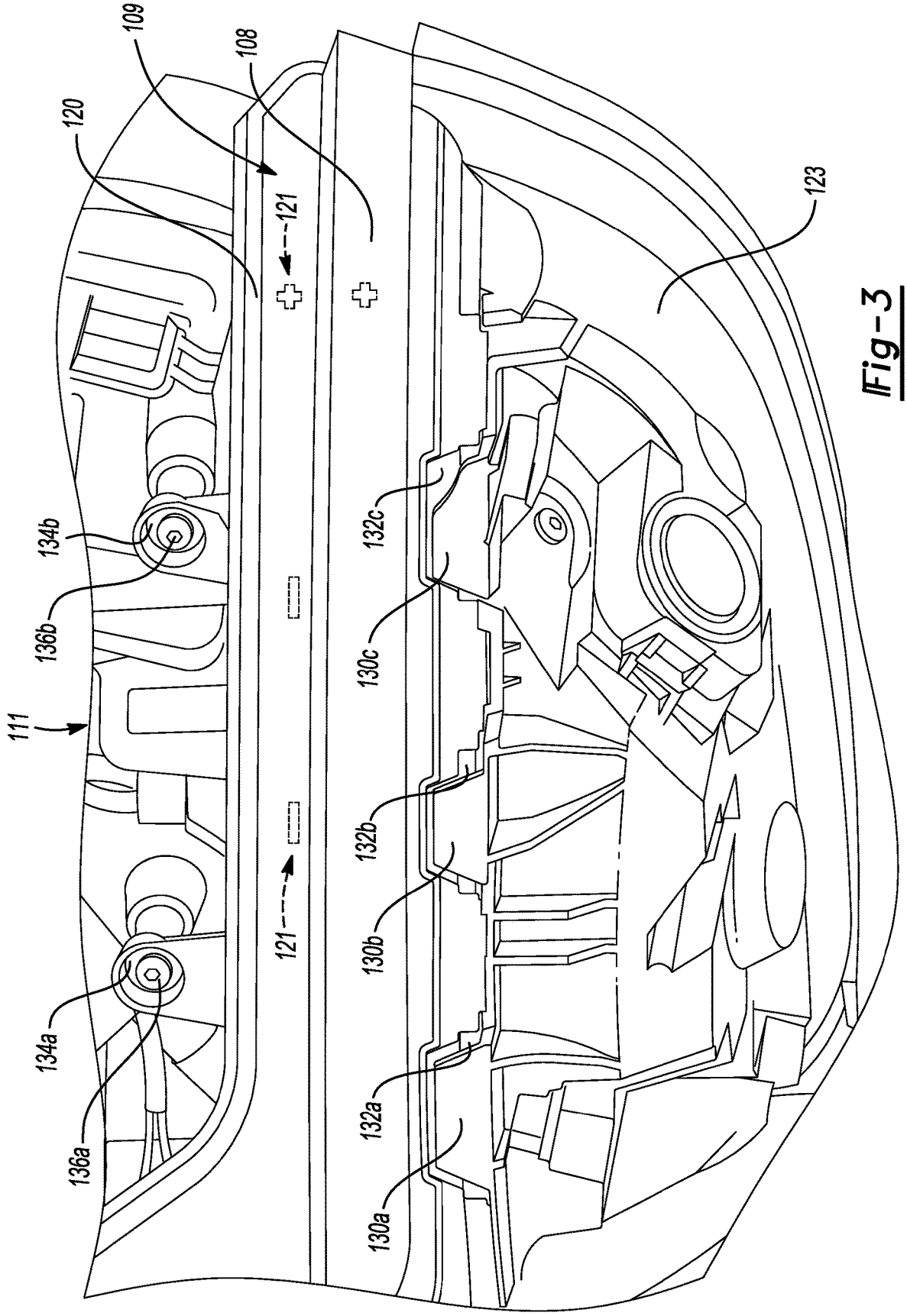
122
126b
126
124b

Fig-2


109
108
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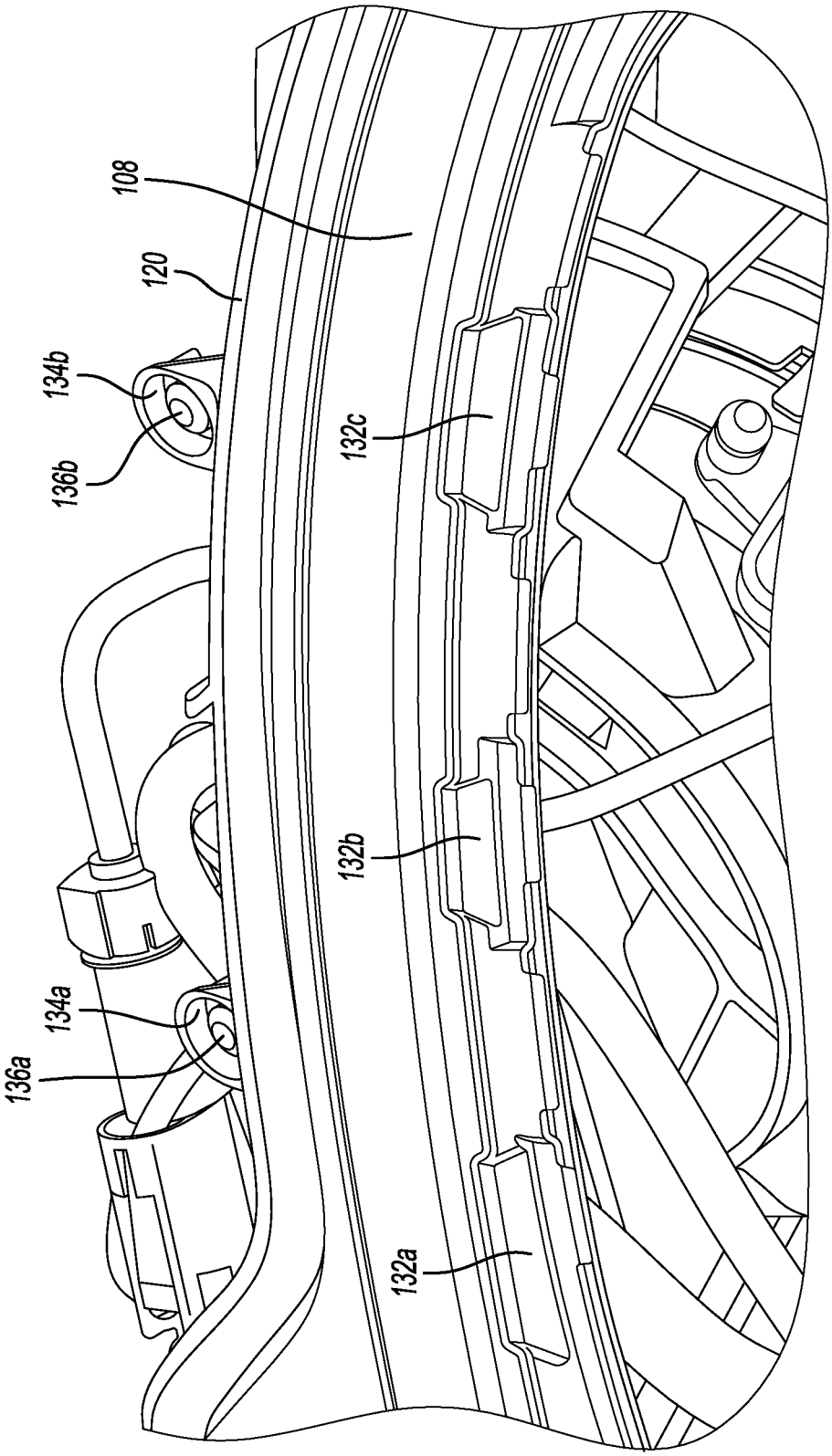
134b
136b
111
132c
130c
132b
130b
121
134a
136a
132a
130a

Fig-3



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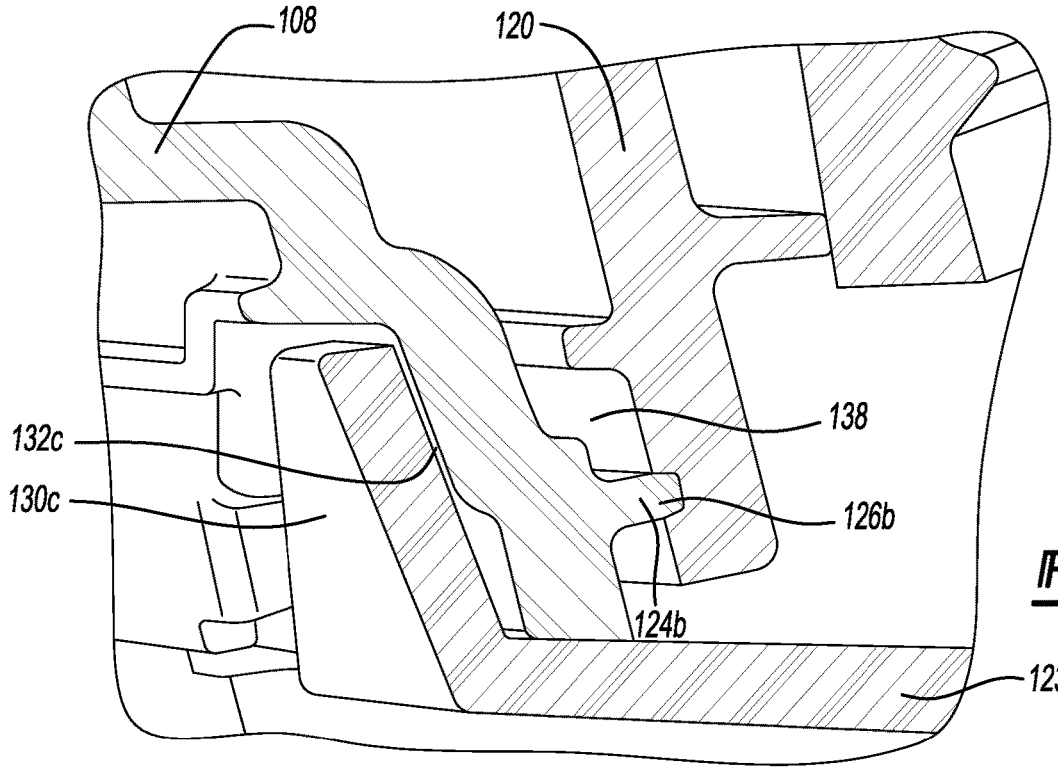
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120
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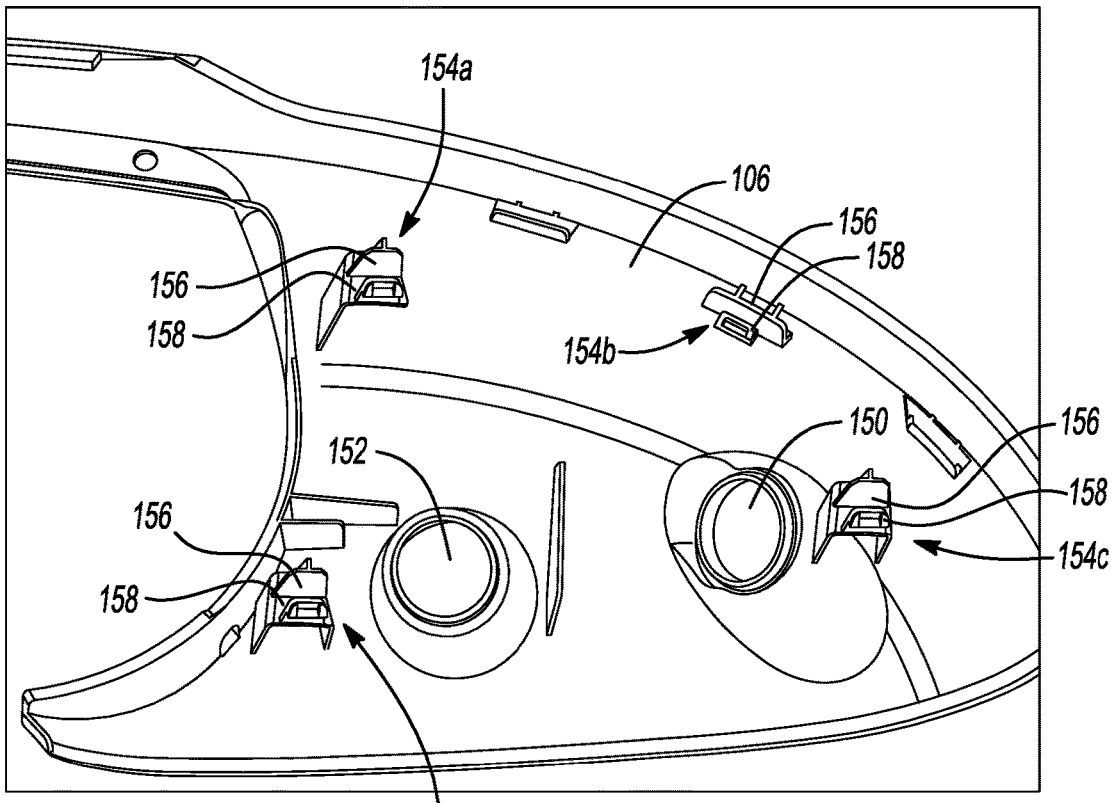
132c
130c
126b
124b
123

Fig-5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154b
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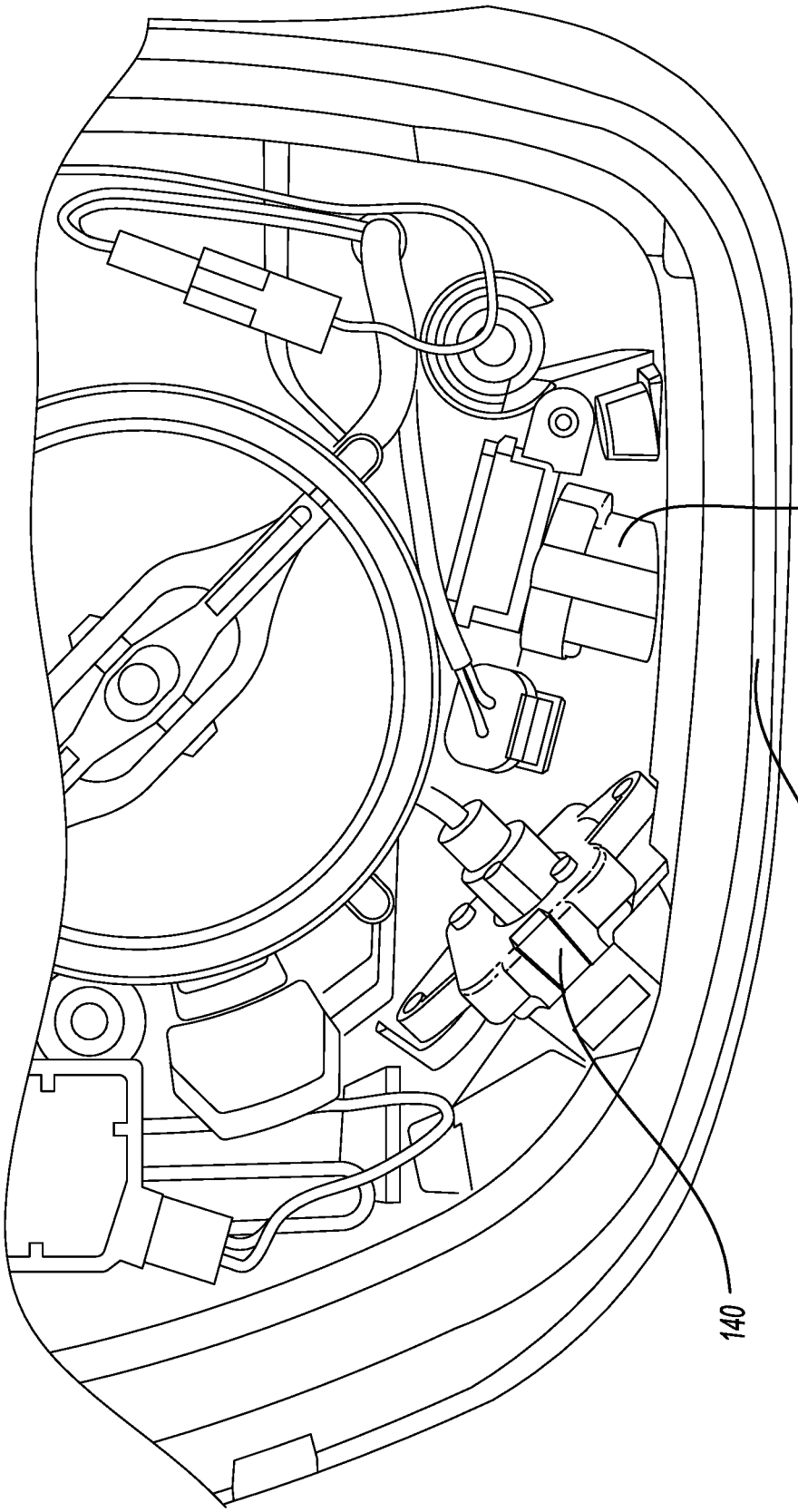
154c
154d

Fig-8



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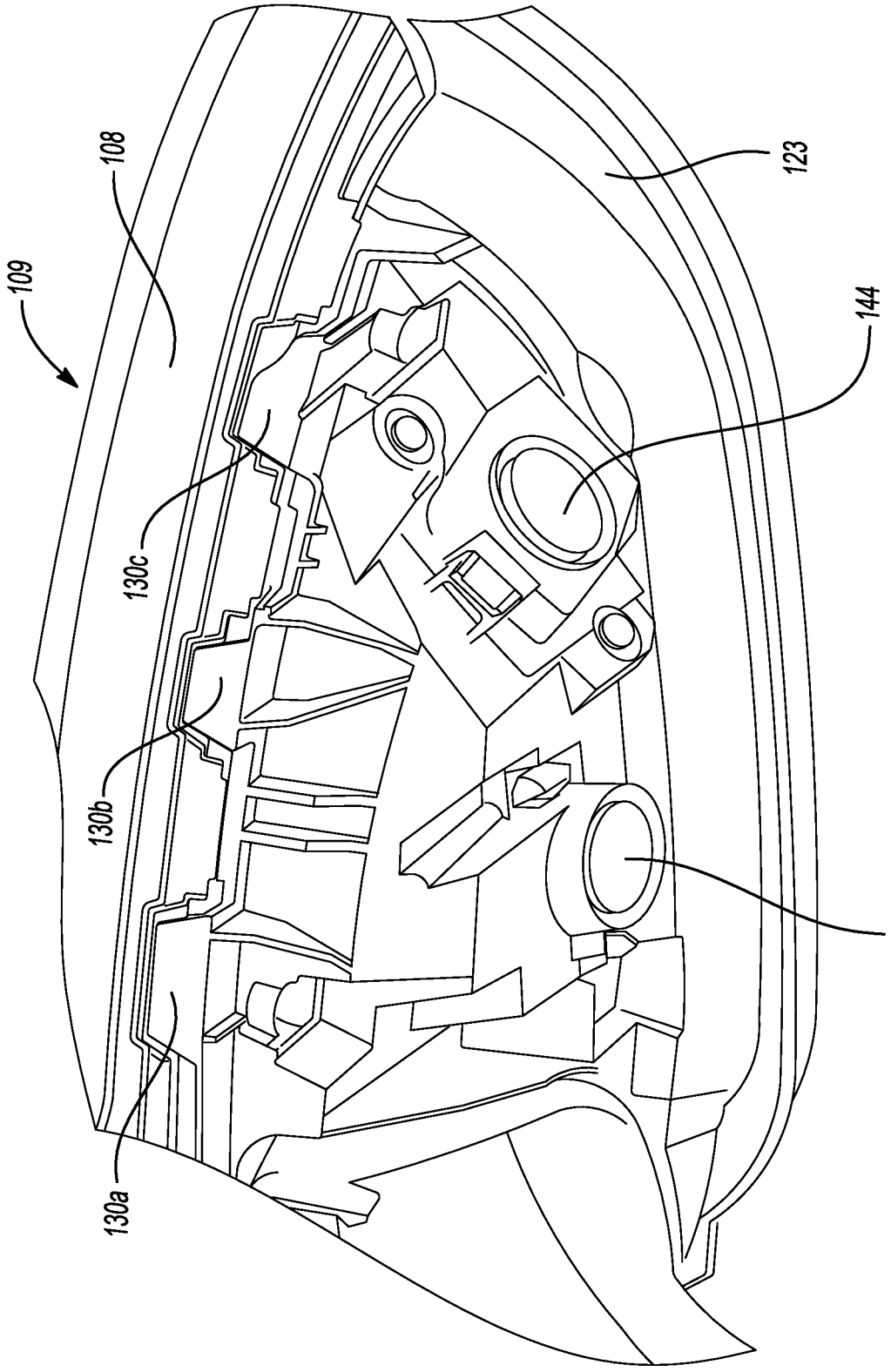

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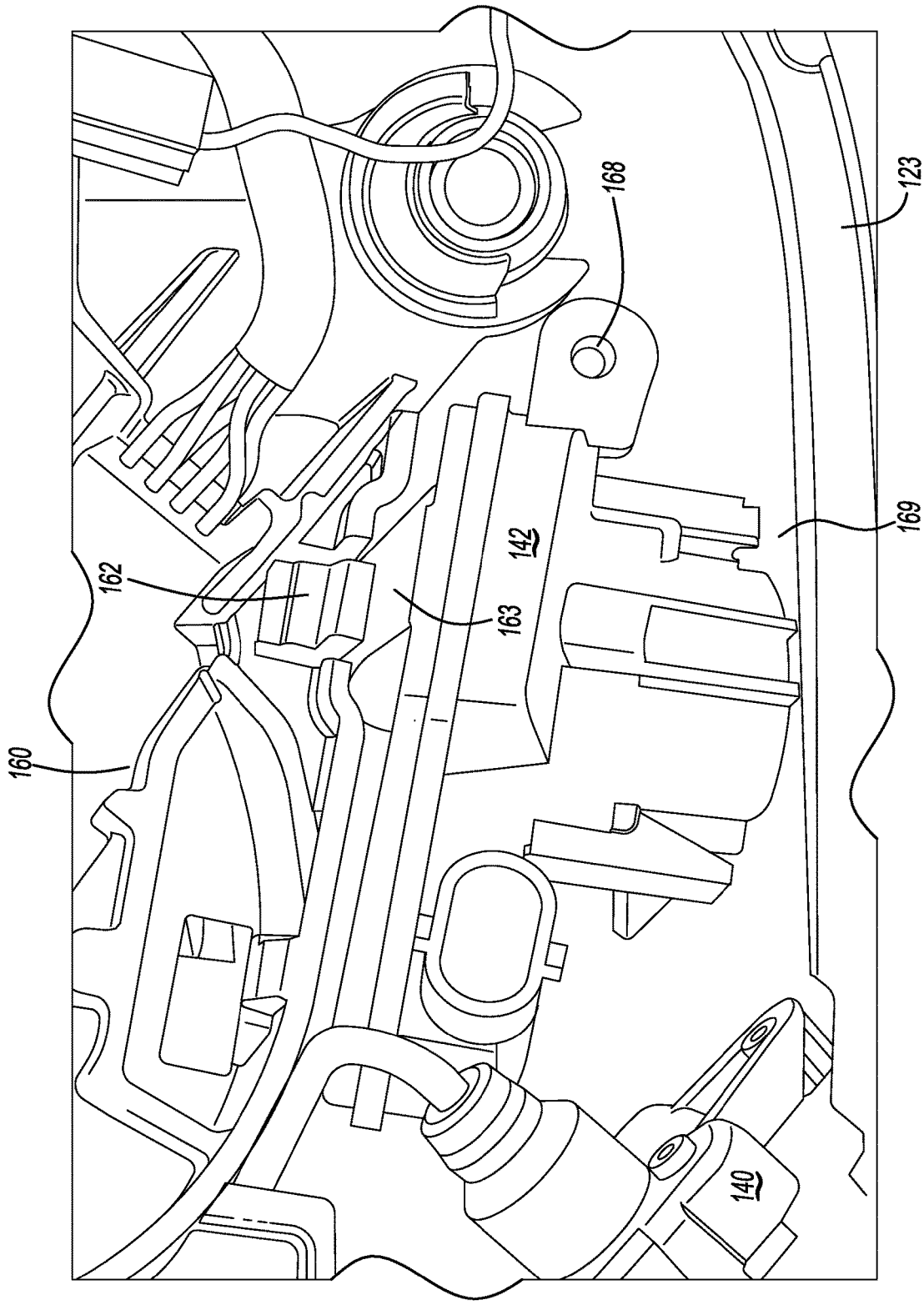
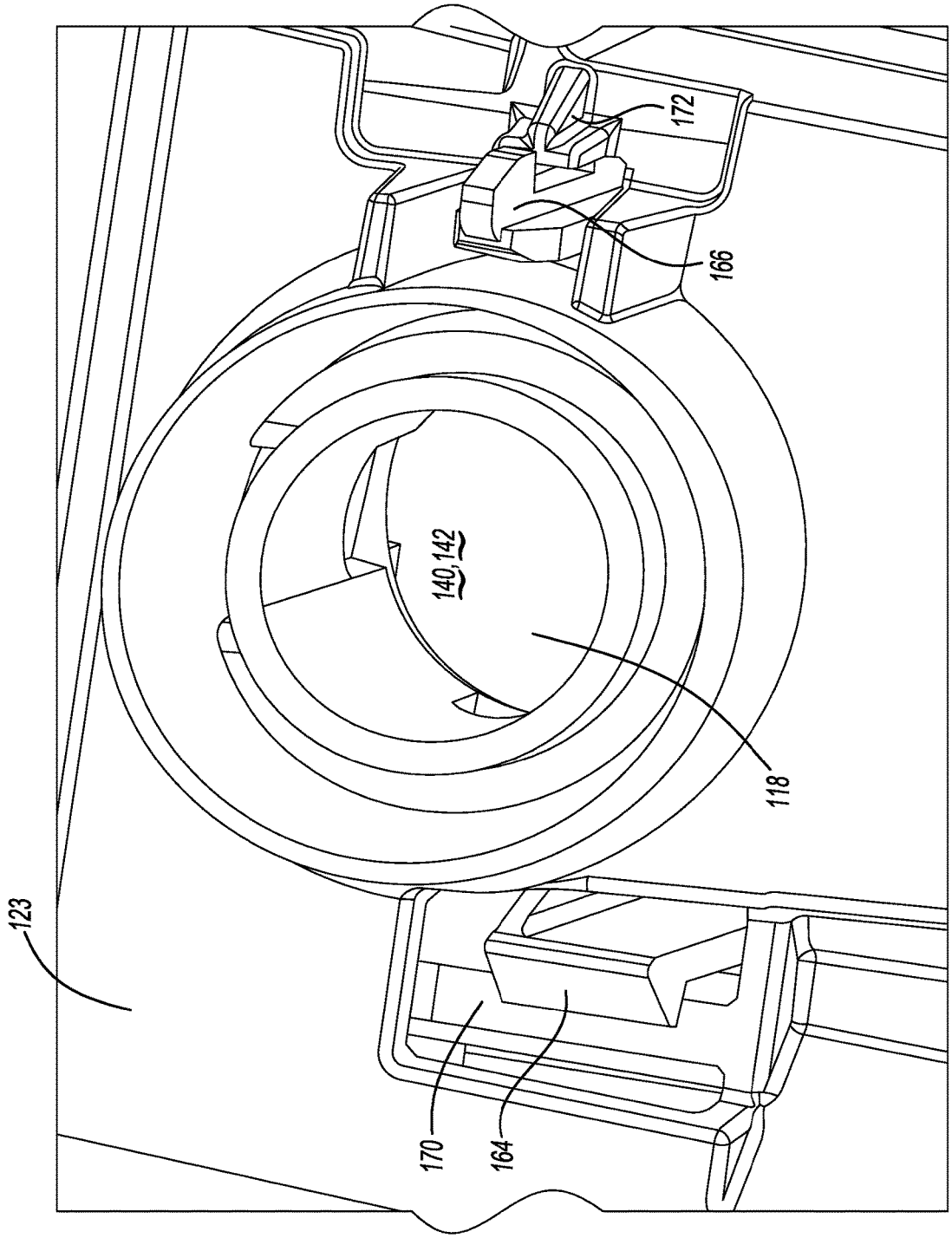


Fig-9



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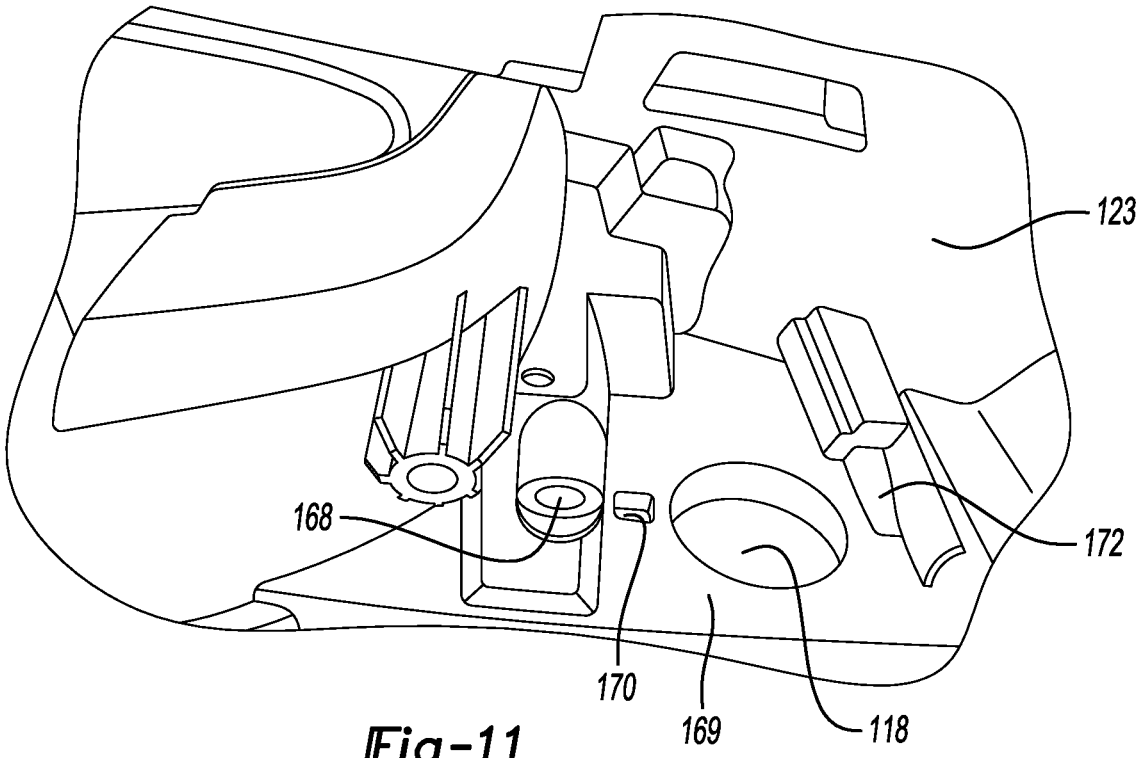
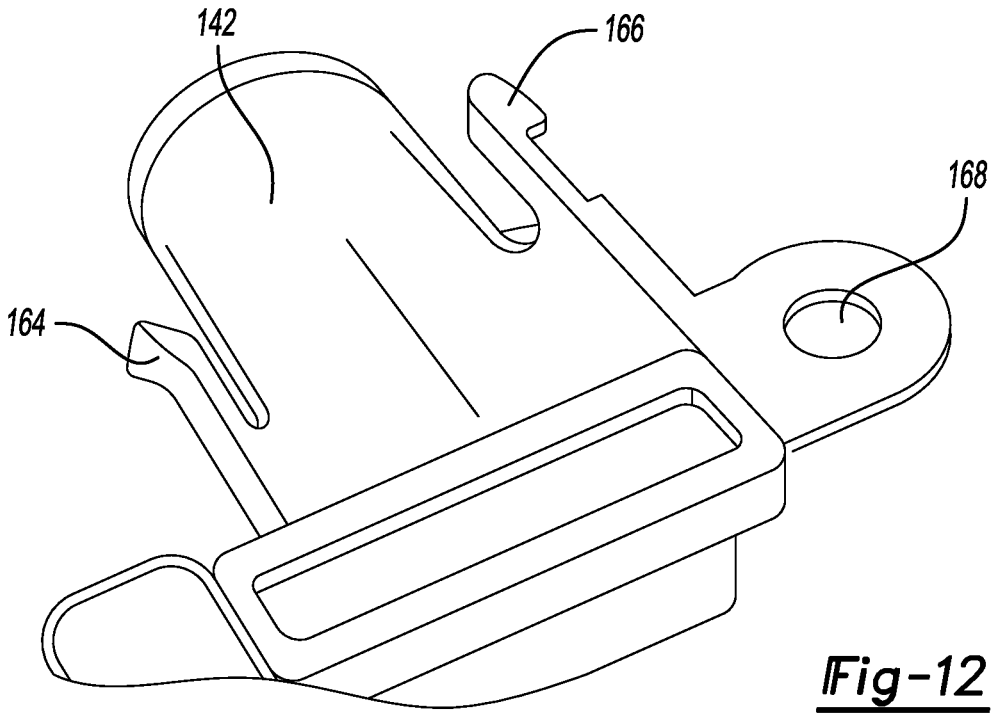


Fig-11



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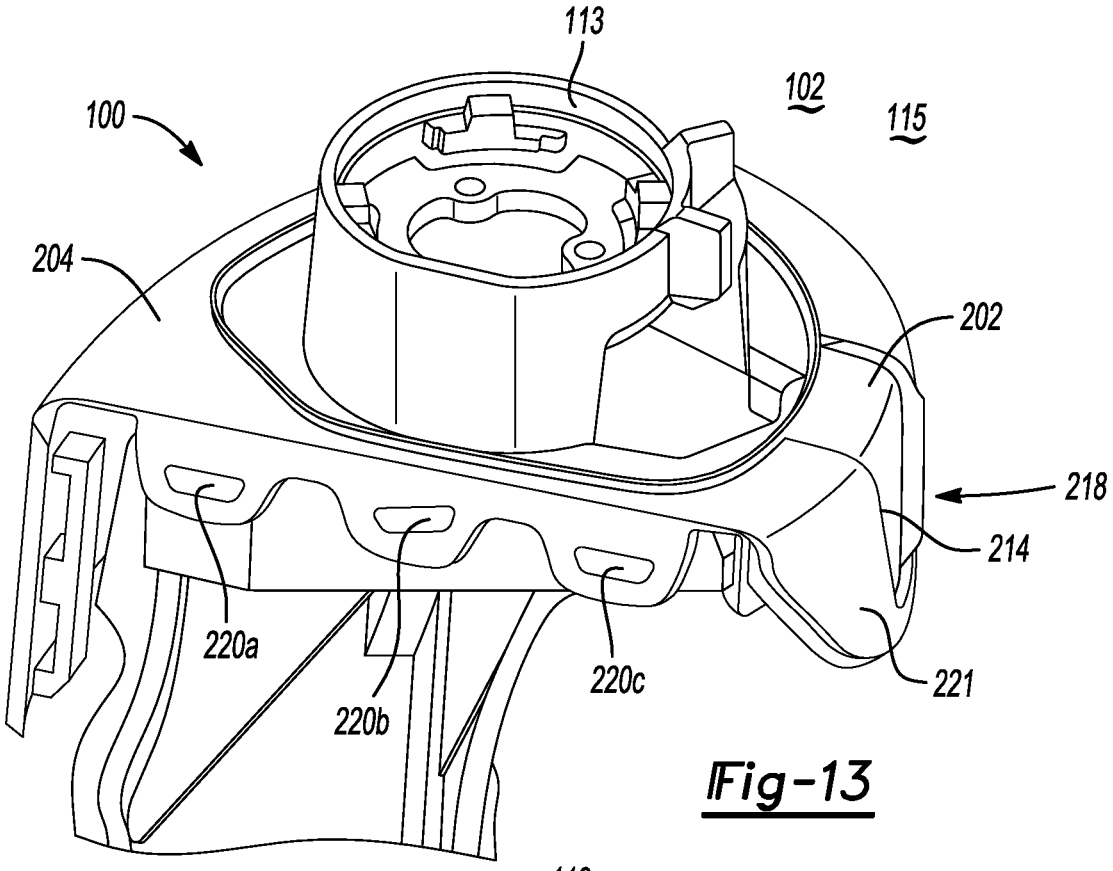
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115
100
204
202
218
214
220a
220b
220c
221

Fig-13

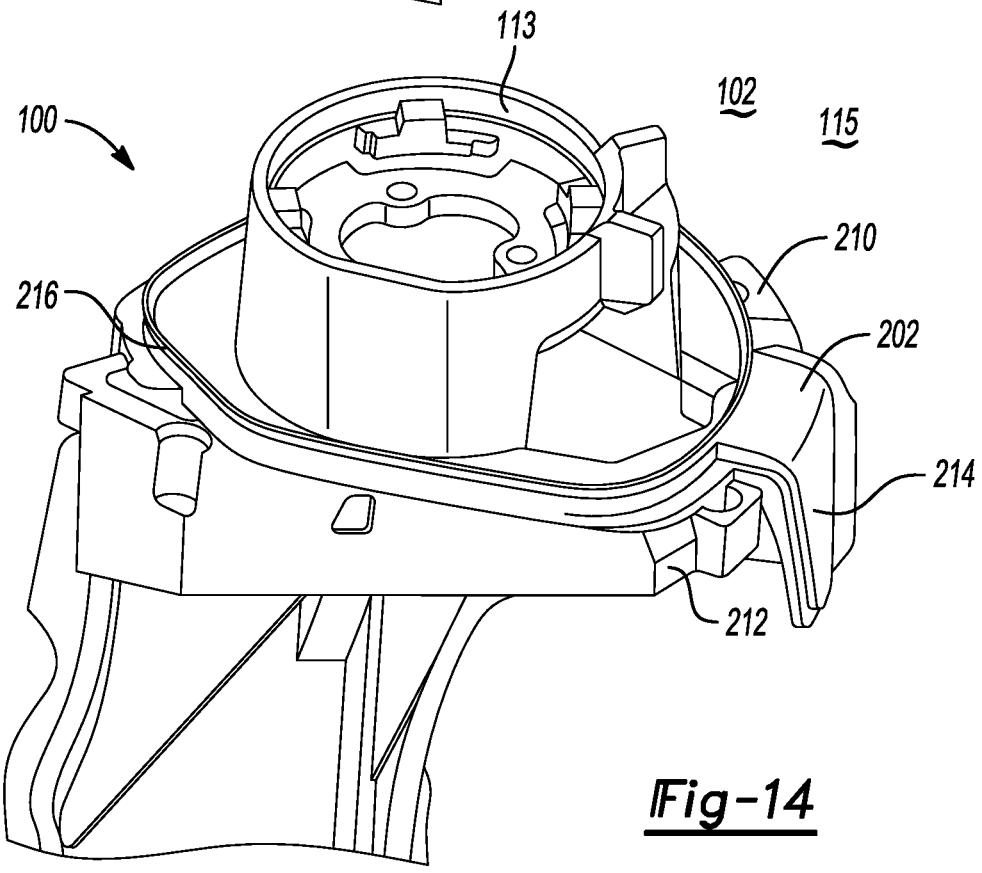
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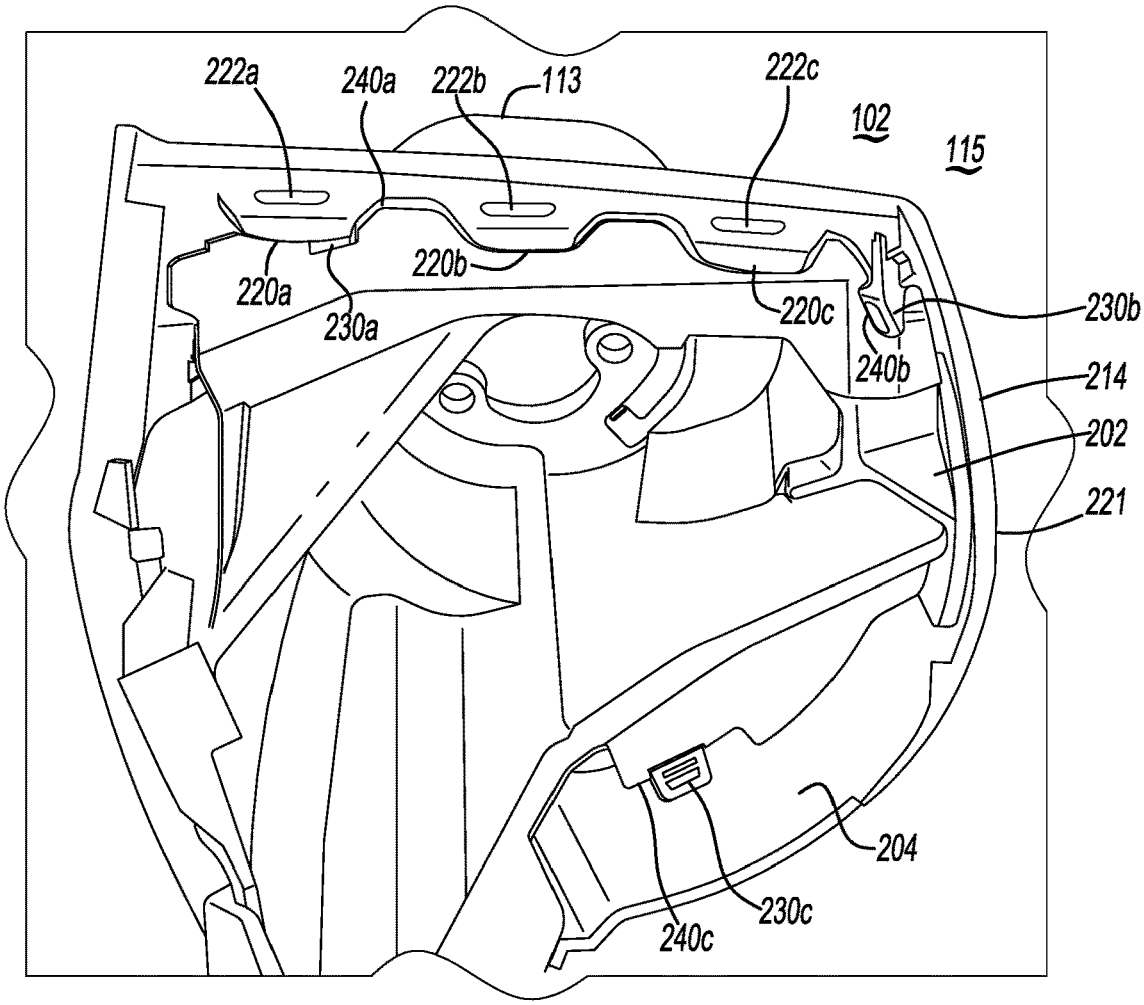
Fig-14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222b
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222c
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220a
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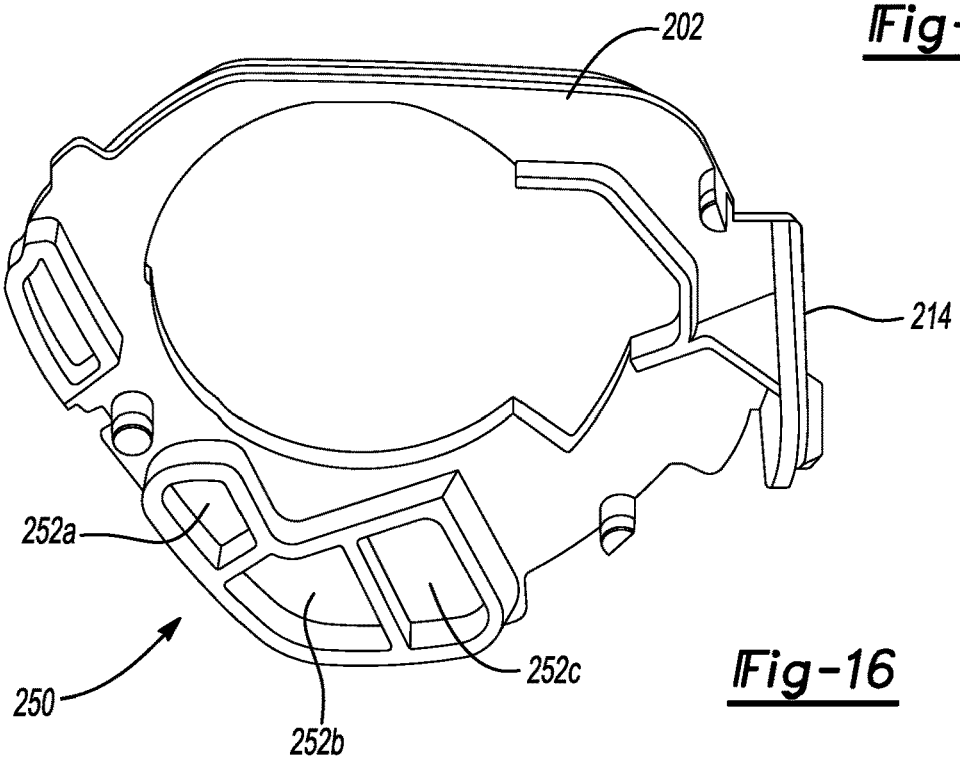
230b
240b
214
202
221
204
230c
240c

Fig-15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214
252a
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252c
252b

Fig-16

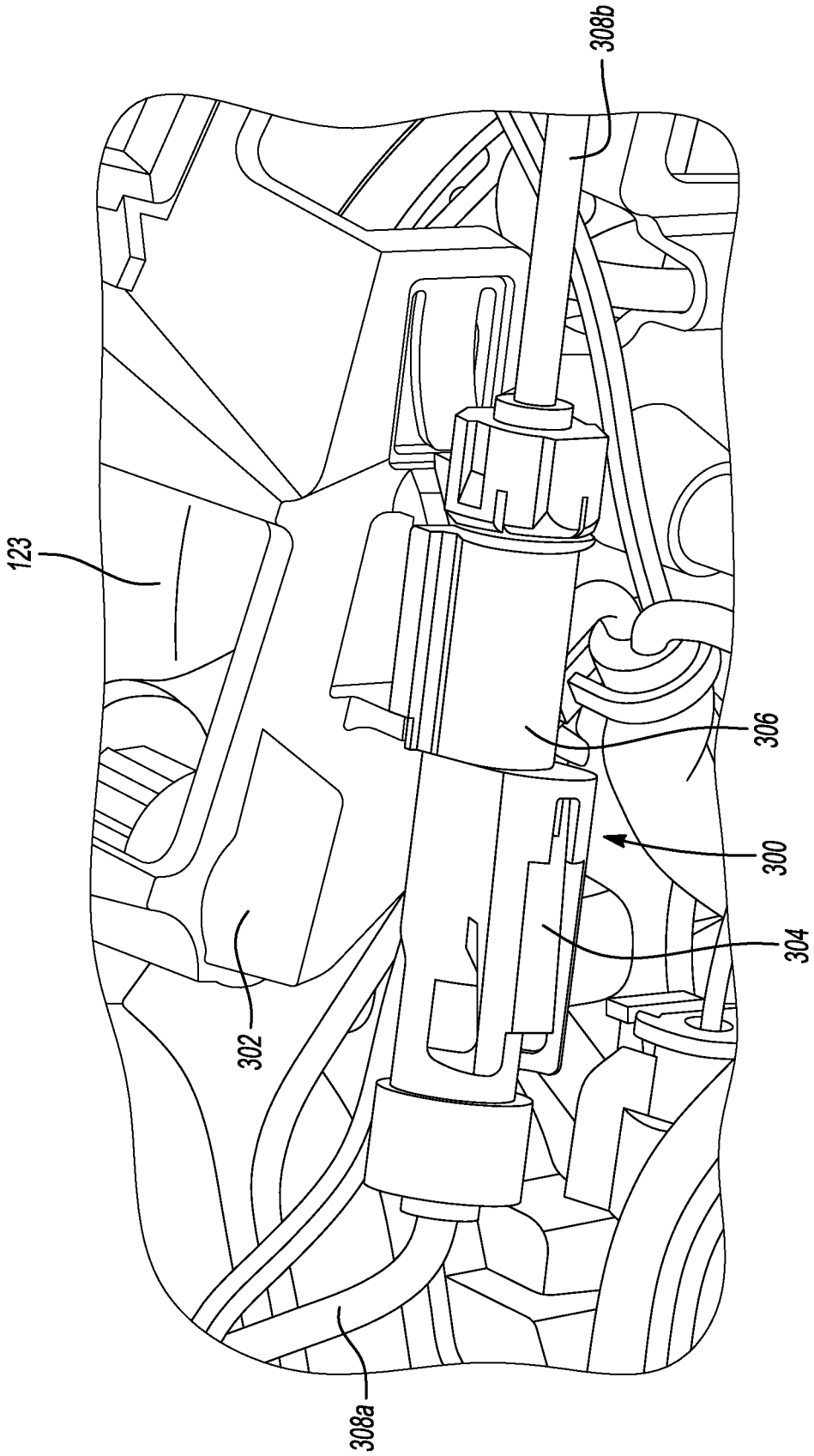

Fig-17

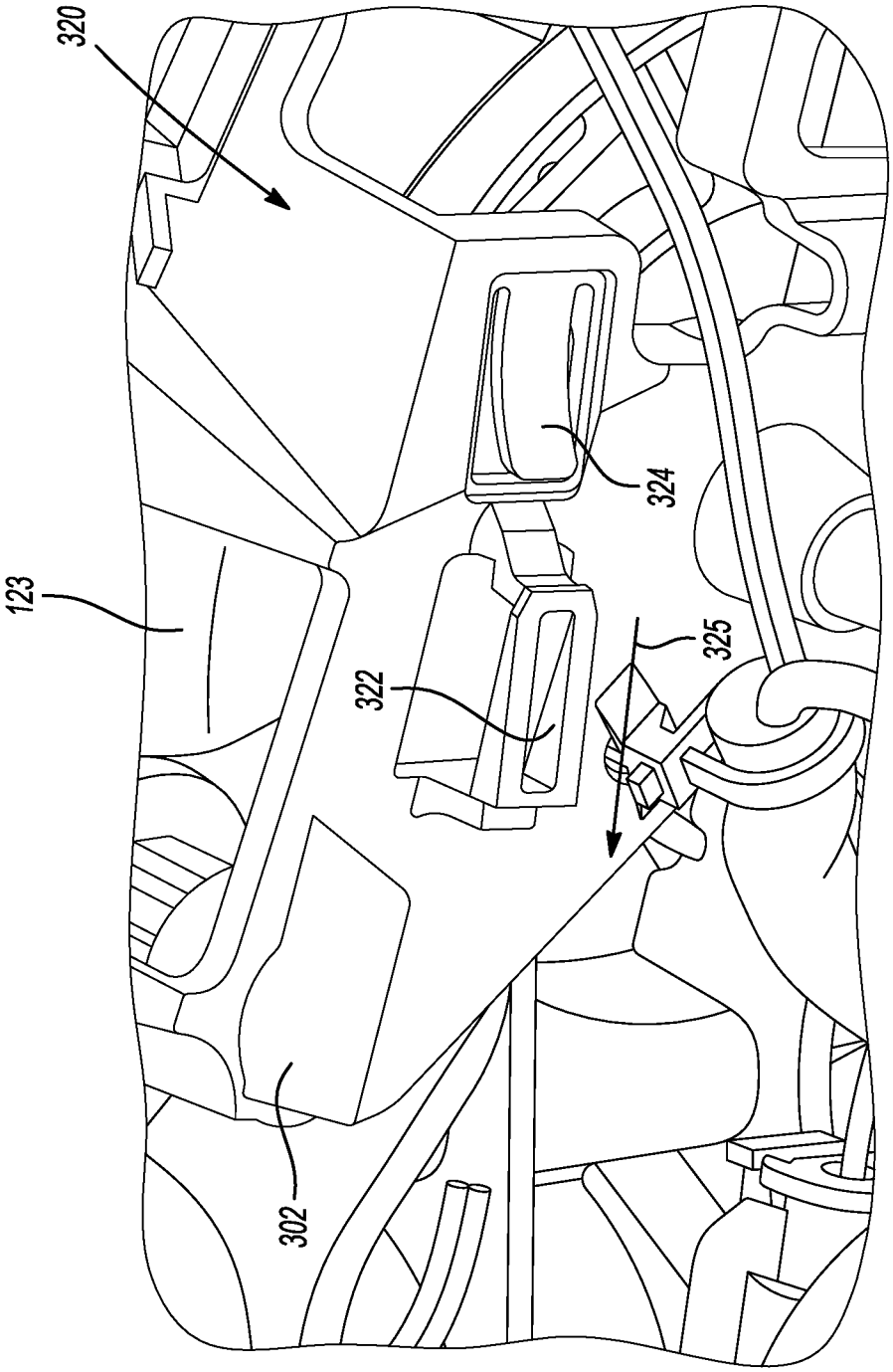

Fig-18

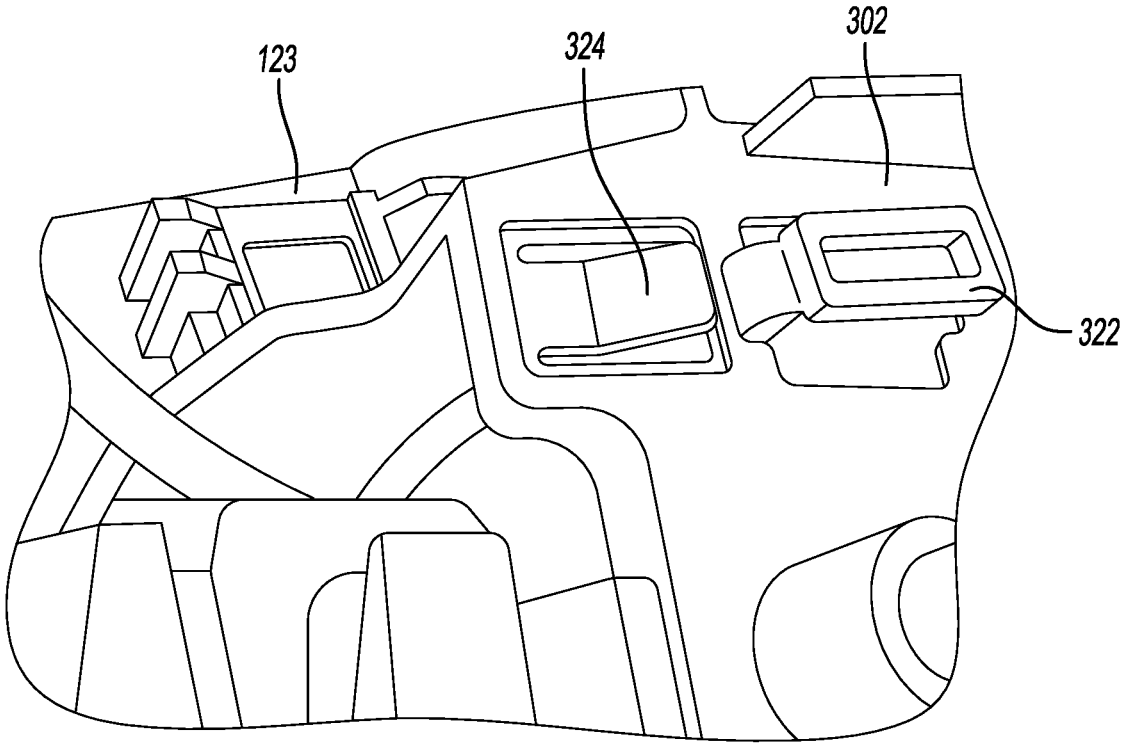

Fig-19

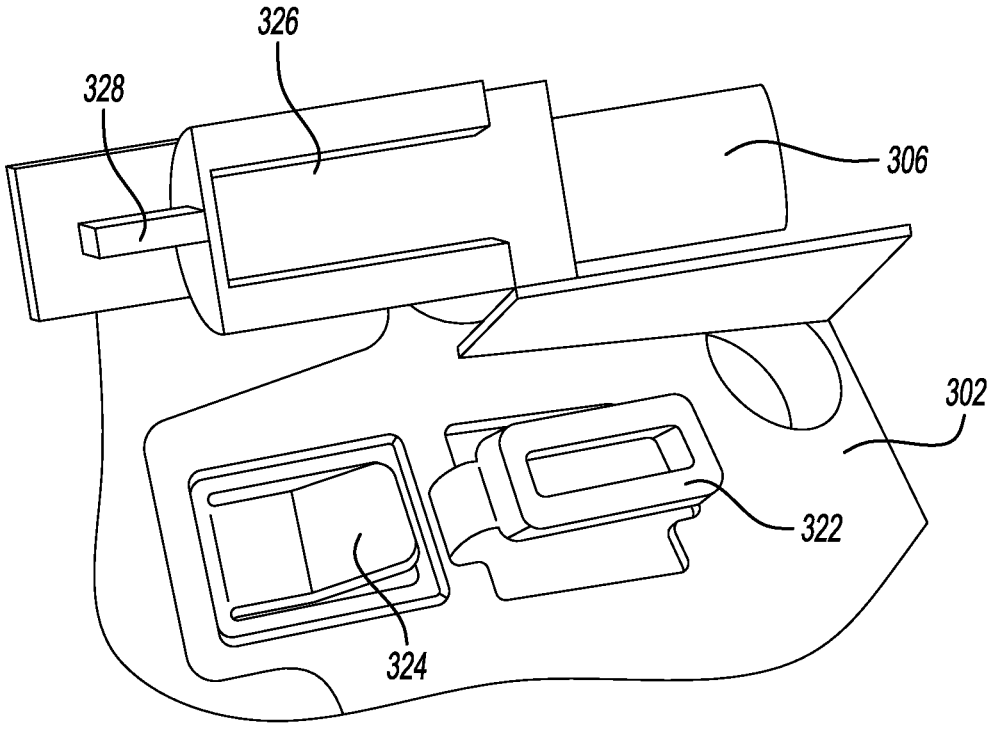

Fig-20

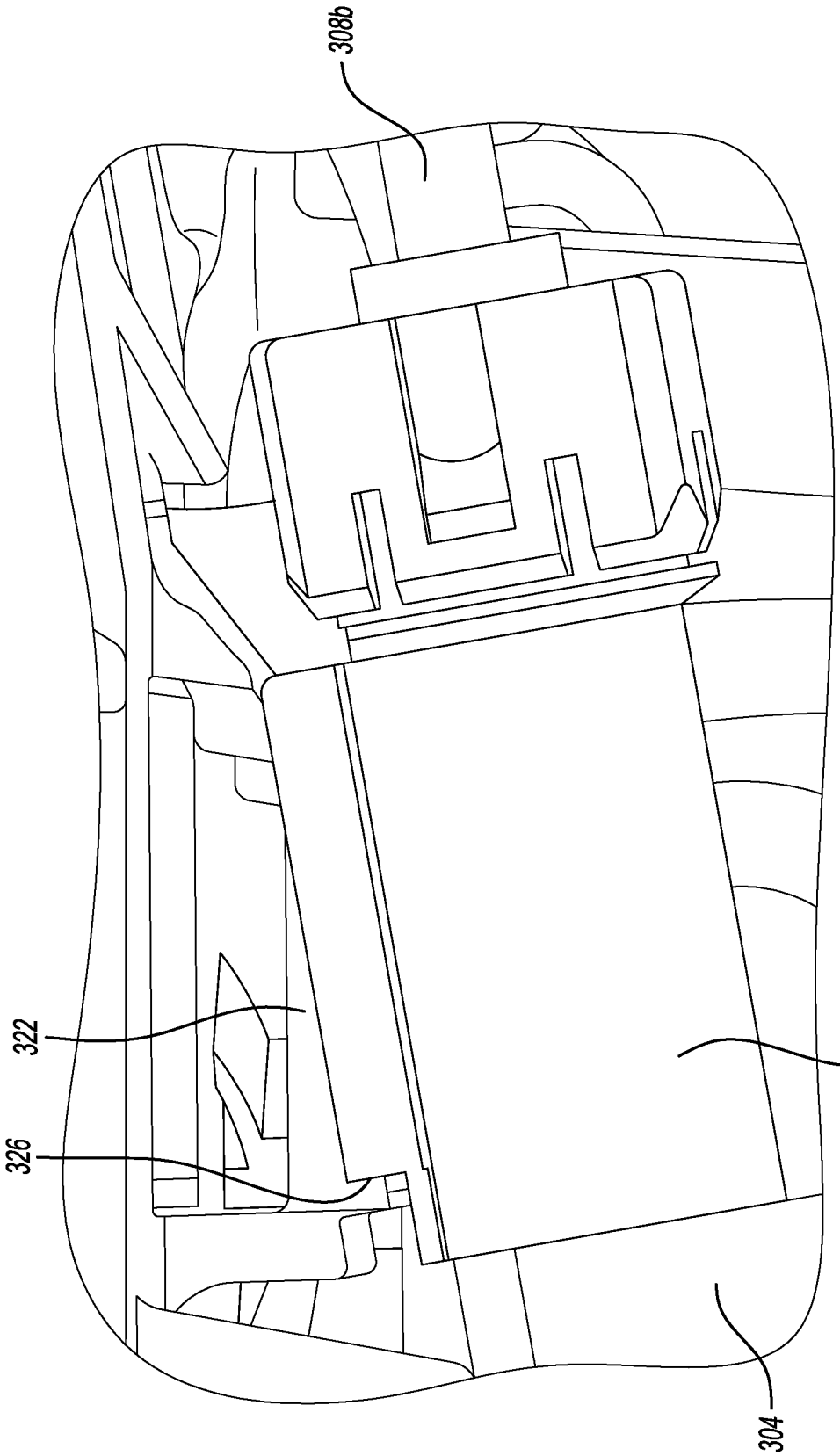

Fig-21

EXTERIOR REARVIEW MIRROR OR WINGLET FOR A VEHICLE HAVING AN ELECTRICAL DEVICE ATTACHED TO A HOUSING

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. provisional application Ser. No. 62/881,103 filed Jul. 31, 2019, the disclosure of which is hereby incorporated in its entirety by reference herein.

TECHNICAL FIELD

[0002] Aspects disclosed herein generally relate to an exterior rearview mirror or winglet for a vehicle. Numerous aspects related to the exterior rearview mirror or winglet will be discussed in more detail below. In one aspect, an exterior rearview winglet assembly for a vehicle is disclosed that includes an exterior shell, a base bracket, a first housing, a finisher, and a first electrical device. The first electrical device is directly attached to the first housing and the first electrical device is independent of attachment to the finisher to reduce an overall weight of the finisher.

BACKGROUND

[0003] Passenger vehicles, such as a car, sports utility vehicle, van, crossover, pickup truck or the like, typically include sideview winglets, also known as outside rearview mirrors or external side mirrors. External side mirrors are typically mounted outside the vehicle cabin to allow the driver to see the environment to the side and behind the vehicle. These mirrors can be foldable or pivotable relative to the remainder of the vehicle. The mirrors can be folded inward when, for example, the vehicle is parked to protect the mirrors from accidental collision or impact from other vehicles or objects.

SUMMARY

[0004] In one aspect, electrical devices may be directly attached to a mirror housing (or a rear portion of the mirror housing).

[0005] In at least one embodiment, an exterior rearview winglet assembly for a vehicle is provided. The assembly includes an exterior shell, a base bracket, a first housing, a finisher, and a first electrical device. The exterior shell includes a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle. The base bracket is positioned in the exterior shell to couple the exterior shell to the vehicle. The first housing is positioned in the exterior shell. The finisher is being attached to the first housing and extending from at least a portion of the exterior shell at the second side of the exterior shell. The first electrical device is directly attached to the first housing and the first electrical device is independent of attachment to the finisher.

[0006] In at least one embodiment, an exterior rearview winglet assembly for a vehicle is provided. The assembly includes an exterior shell, a base bracket, a first housing, a finisher, and a first electrical device. The exterior shell includes a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle. The base bracket couples the exterior shell to the vehicle. The first housing is positioned in the exterior shell. The finisher is attached to the first housing and extends from at least a portion of the exterior shell at the second side of the exterior shell. The first electrical device is directly attached to the first housing and the first electrical device is independent of attachment to the finisher to reduce an overall weight of the finisher.

[0007] In at least one embodiment, an exterior rearview winglet assembly for a vehicle is provided. The assembly includes an exterior shell, a base bracket, a first housing, a finisher, and a first electrical device. The exterior shell includes a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle. The base bracket couples the exterior shell to the vehicle. The first housing is positioned in the exterior shell. The finisher is attached to the first housing and extends from at least a portion of the exterior shell at the second side of the exterior shell. The first electrical device is directly attached to the first housing and the first electrical device being independent of attachment to the finisher to prevent the finisher from decoupling from the exterior shell.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The embodiments of the present disclosure are pointed out with particularity in the appended claims. However, other features of the various embodiments will become more apparent and will be best understood by referring to the following detailed description in conjunction with the accompany drawings in which:

[0009] FIG. **1** generally depicts a perspective view of an exterior rearview mirror for a vehicle in accordance to one embodiment;

[0010] FIG. **2** generally depicts a cross sectional view of the exterior rearview mirror in accordance to one embodiment;

[0011] FIG. **3** generally depicts a perspective view of a lighting lens cover and a portion of a mirror housing in accordance to embodiment;

[0012] FIG. **4** generally depicts another perspective view of the lighting lens of FIG. **3**;

[0013] FIG. **5** generally depicts a cross sectional view of the lighting lens and the mirror housing of FIG. **3**;

[0014] FIG. **6** generally depicts a perspective view of an interior of the mirror housing along with electrical devices in accordance to one embodiment;

[0015] FIG. **7** generally depicts a perspective underside view of the mirror housing of FIG. **6**;

[0016] FIG. **8** generally depicts a perspective view of a finisher with openings for the electrical devices of FIG. **6**;

[0017] FIG. **9** generally depicts a perspective view of a connector for a lamp being mounted to the mirror housing in accordance to one embodiment;

[0018] FIG. **10** generally depicts an underside view of the mirror housing of FIG. **9** in accordance to one embodiment;

[0019] FIG. **11** generally depicts a top view of the mirror housing of FIG. **9**;

[0020] FIG. **12** generally depicts detailed view of clips and a clip locator on a housing bracket for the embodiment illustrated in connection with FIGS. **9-10**;

[0021] FIG. **13** generally depicts a perspective view of a base bracket, a cutline gasket, and a base cover in accordance to one embodiment;

[0022] FIG. **14** generally depicts another perspective view of the base bracket and the cutline gasket of FIG. **13**;

[0023] FIG. **15** generally depicts an underside view of the base bracket, the cutline gasket and the base cover of FIG. **13**;

[0024] FIG. **16** generally depicts a detailed view of the cutline gasket of FIG. **13**;

[0025] FIG. **17** generally depicts a perspective view of an electrical connector being coupled to a clip that is located on the mirror housing in accordance to one embodiment;

[0026] FIG. **18** generally depicts a perspective view of the clip of FIG. **17**;

[0027] FIG. **19** generally depicts another perspective view of the clip on the mirror housing of FIG. **17**; and

[0028] FIG. **20** generally depicts a detailed view of the clip of FIG. **17**; and

[0029] FIG. **21** generally depicts another perspective view of the electrical connector and the clip on the mirror housing of FIG. **17**.

DETAILED DESCRIPTION

[0030] As required, detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention that may be embodied in various and alternative forms. The figures are not necessarily to scale; some features may be exaggerated or minimized to show details of particular components. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a representative basis for teaching one skilled in the art to variously employ the present invention.

[0031] It is recognized that directional terms as noted herein (e.g., "upper", "lower", "inner", "outer", "top", "bottom", etc.) simply refer to the orientation of various components as illustrated in the accompanying figures and the manner in which the exterior rearview mirror may be orientated relative to the vehicle. Such terms are provided for context and understanding of the embodiments disclosed herein.

[0032] FIG. **1** generally depicts a perspective view of an exterior rearview winglet assembly **100** (hereafter "assembly") for a vehicle **102** in accordance to one embodiment. It is recognized that the vehicle **102** may be a passenger car, van, truck, sports utility vehicle (SUV), etc. It is further recognized that the aspects disclosed herein in connection with the assembly **100** may be incorporated or implemented on an exterior winglet as mounted on the vehicle **102**. The assembly **100** may be implemented as a rearview mirror assembly that is generally arranged to pivot or swivel about the vehicle **102** to enable a driver or vehicle occupant to position a reflective surface (e.g., mirror, etc.) (not shown) on the assembly **100** at an optimum position such that the driver can have a field of view ("FOV") rearward and to the side of the vehicle **102** to view other vehicles or objects accordingly. The assembly **100** may include an image capture device (e.g., a camera, image recording device, etc.) (not shown), as opposed to the reflective surface, to capture images of vehicles or objects to the rear and to the side of the vehicle **102**. The image capture device may provide captured images to the display located in the vehicle **102** (e.g., display positioned on a door, display positioned on an instrument panel, display positioned on A or B pillar of vehicle **102**, etc.).

[0033] The assembly **100** generally includes a base cover **104**, a finisher **106**, a cap (or skull cap) **112** that are formed together to form an exterior shell **115** for the assembly **100**. The assembly **100** further includes a base bracket **113**. The relevance of the base bracket **113** will be discussed in more detail in connection with FIG. **13** below. A lighting lens cover **108** is positioned between the finisher **106** and the skull cap **112**. It is recognized that the lighting lens cover **108** may be fully transparent (e.g., clear) or semi-transparent (e.g., frosted), etc. The lighting lens cover **108** generally includes a light pipe (or other illumination device) that generally provides a visual indicator to surrounding vehicles to the vehicle **102**. The visual indication as illuminated via the lens cover **108** generally coincides with turn blinkers/signals as the driver initiates his/her blinkers to change lane or turn the vehicle **102**. The assembly **100** generally includes at least one image capture device **116** (hereafter "the image capture device") that is also positioned about an opening **118** of the mirror housing **123** (see FIG. **11**) for capturing images exterior to the vehicle **102**. Electrical wiring and connectors **114** are provided that electrically couple the image capture device, the illumination device, and one or more puddle lamps (not shown) on the assembly **100** to other components of the vehicle **102**.

[0034] FIG. **2** generally depicts a cross sectional view of the exterior rearview winglet assembly **100** in accordance to one embodiment. The assembly **100** further includes a turn signal housing **120**, an illumination device **122**, and a mirror housing **123**. As noted above, the illumination device **122** provides a visual indicator to surrounding vehicle to the vehicle **102** via the lighting lens cover **108**. The illumination device **122** is generally positioned between the lens cover **108** and the housing **120**. A first attachment mechanism **124** is provided that couples an upper portion of the lens cover **108** to a corresponding upper portion of the housing **120**. In addition, a second attachment portion **126** is provided that couples a lower portion of the lens cover **108** to a respective corresponding lower portion of the housing **120**. The first attachment portion **124** generally includes at least one extending (or male) (hereafter "extending portion") **124***a* and at least one receiving portion (or female) (hereafter "receiving portion") **126***a*. A second attachment mechanism **126** is provided that couples a lower portion of the lighting lens cover **108** to a corresponding lower portion of the housing **120**. The second attachment portion **126** includes at least one extending portion **124***b* and at least one receiving portion **126***b*. As shown, the receiving portions **126***a*, **126***b* receive the extending portions **124***a*, **124***b*, respectively for coupling the lighting lens cover **108** to the housing **120**. It is recognized that in other embodiments the extending portions **124***a*, **124***b* may be positioned on the housing **120** and that the receiving portions **126***a*, **126***b* may be positioned on the lighting lens cover **108** to directly couple the lighting lens cover **108** to the housing **120**. Once the lighting lens cover **108** is coupled to the housing **120** via the first attachment portion **124** and the second attachment portion **126**, the lighting lens cover **108** may be vibration welded to the housing **120** at the first and second attachment portions **124**, **126**.

[0035] By fixing or directly coupled the lighting lens cover **108** to the housing **120** that is embedded within the assembly **100**, this aspect provides greater control over any gap formed between the lighting lens cover **108** and the skull cap **112** and further between the lighting lens cover **108** and the finisher **106**. It is recognized that external portions of the assembly **100** are characterized as class A surfaces with

respect to various OEM requirements. Thus, such surfaces are required to meet stringent requirements with respect to fit and finish as they are readily viewable to the driver and passengers in the vehicle **102**.

[0036] The housing **120** further includes a protruding channel **128** to receive the illumination device **122**. The illumination device **122** is generally coupled to the housing **120** via a clip and hook connection. While FIG. **2** illustrates that the extending portions **124***a*, **124***b* are positioned on the lighting lens cover **108** and that the receiving portions **126***a*, **126***b* are positioned on the housing **120**, it is recognized that the extending portions **124***a*, **124***b* may alternatively be positioned on the housing **120** and that the receiving portions **126***a*, **126***b* may be positioned on the lighting lens cover **108** to couple the lighting lens cover **108** to the housing **120**. Alternatively, one extending portion **124***a* or **124***b* may be positioned on lighting lens cover **108** and the other extending portion **124***b* or **124***a* may be positioned on the housing **120**. In this configuration, one receiving portion **126***a* or **126***b* may be positioned on the housing **120** and the other receiving portion **126***b* or **126***a* may be positioned on the lighting lens cover **108**.

[0037] FIG. **3** generally depicts a perspective view of a lighting lens cover **108** and a portion of a mirror housing **123** in accordance to one embodiment. The mirror housing **123** generally includes a plurality of receiving ribs **130***a*, **130***b*, **130***c* that extend outwardly away from the mirror housing **123** and toward the finisher **106**. The lighting lens cover **108** is part of a lighting lens assembly **109** that generally includes a plurality of receiving grooves **132***a*, **132***b*, **132***c*. The plurality of receiving ribs **130***a*, **130***b*, and **130***c* receive the plurality of receiving grooves **132***a*, **132***b*, **132***c*, respectively such that the mirror housing **123** retains the lighting lens cover **108** to the mirror housing **123** and also to the turn signal housing **120**. Each rib **130***a*, **130***b*, **130***c* generally defines a channel for receiving the corresponding receiving groove **132***a*, **132***b*, **132***c*. At least one locking tab **121** (or extending tabs) positioned on an inner surface of the turn signal housing **120** to couple the lighting lens assembly **109** to the mirror housing **123**. In the example illustrated in FIG. **3**, four locking tabs **121** are provided to couple the inner surface of the turn signal housing **120** to the mirror housing **123**. It is recognized that the mirror housing **123** includes at least one groove (not shown) to receive and mate via interference fit with the at least one locking tab **121** to secure the lighting lens assembly **109** to the mirror housing **123**. At least one latching mechanism **111** is positioned between the attachment points **134***a* and **134***b*. The at least one latching mechanism **111** is generally formed as a latch or hook that fits over an extending portion (not shown) positioned on the mirror housing **123**. The latching mechanism **111** latches with the extending portion to aid in attaching the lighting lens assembly **109** to the mirror housing **123**. Each receiving rib **130***a*, **130***b*, **130***c* receives a corresponding receiving groove **132***a*, **132***b*, **132***c*, respectively, prior to the at least one locking tab **121** being coupled to grooves (not shown) in the mirror housing **123** to couple the lighting lens assembly **109** to the mirror housing **123**.

[0038] FIG. **4** depicts a more detailed view of the plurality of receiving grooves **132***a*, **132***b*, **132***c*. The turn signal housing **120** includes a plurality of attachment points **134***a*, **134***b* for coupling to an upper portion of the mirror housing **123** (this is also shown in FIG. **3**). In particular, the mirror housing **123** includes a plurality of clips **136***a*, **136***b* that engage the plurality of attachment points **134***a*, **134***b* to couple the mirror housing **123** to the turn signal housing **120**. In reference to FIGS. **2-4**, the assembly **100** includes a lighting lens assembly **109** having the lighting lens cover **108**, the illumination device **122**, and the turn signal housing **120**.

[0039] FIGS. **1-4** generally depicts the exterior rearview assembly **100** for the vehicle **102**. The assembly **100** includes the exterior shell **115**, the base bracket **113**, the lighting lens assembly **109**, and the mirror housing **123** (e.g., the first housing). The exterior shell **115** includes a rear side **127** orientated toward a front of the vehicle **102** and a front side **129** orientated toward a rear of the vehicle **102**. The base bracket **113** is coupled to the exterior shell **115** to the vehicle **102**. The lighting lens assembly **109** is positioned on the exterior shell **115** and includes the illumination device **122** to illuminate about at least a side of the vehicle **102**. The first housing **123** is positioned in the exterior shell **115** to directly attach the lighting lens assembly **109** thereto for coupling the lighting lens assembly **109** to the rear side **127** of the exterior shell **115**. The first housing **123** is generally arranged to support a reflective surface in the exterior shell **115** when the assembly **100** is implemented as a rearview mirror assembly **100**.

[0040] FIG. **5** generally depicts a cross sectional view of the lighting lens cover **108** and the mirror housing **123** of FIG. **3**. The turn signal housing **120** and the mirror housing **123** generally define a gap **138** to enable each corresponding rib **130***a*, **130***b*, **130***c* of the mirror housing **123** to receive the groove **132***a*, **132***b*, **132***c*, respectively.

[0041] FIG. **6** generally depicts a perspective view of an interior of the mirror housing **123** along with electrical devices **140** and **142** in accordance to one embodiment. In one example, the electrical device **140** may correspond to the image capture device **116**. Additionally, in one example, the electrical device **142** may correspond to a lamp **144** (see FIG. **7**), such as for example, a puddle lamp. The image capture device **116** and the lamp **144** are positioned on another side of the mirror housing **123** (see FIG. **7**). It is recognized that the electrical device **140** or **142** may be implemented as, but not limited to, a temperature sensor, antenna, communication module, blind spot detector sensor, proximity sensor, etc. For example, FIG. **7** generally depicts a perspective underside view of the mirror housing **123** of FIG. **6**. As shown, the image capture device **116** and the lamp **144** are positioned below the receiving ribs **130***a*, **130***b*, **130***c* of the mirror housing **123**.

[0042] Prior implementations provided for the electrical devices for the image capture device **116** and the lamp **144** to be directly coupled to the finisher **106**. However, the implementations as set forth in FIG. **7** depicts that the image capture device **116** and the lamp **144** are directly coupled and fixed to the mirror housing **123** prior to the installation of the finisher **106** to the mirror housing **123**. Such an implementation may be advantageous since the installation of the finisher **106** to the mirror housing **123** is simplified. For example, the finisher **106** no longer requires electrical pigtails (i.e., wiring harnesses) that need to be coupled to the mirror housing **123** during the installation of the finisher **106** to the mirror housing **123**.

[0043] In addition, the removal of the wire harnesses or pigtails from the finisher **106** removes weight from the finisher and improves overall quality. For example, the additional weight provided by the electrical devices **140**,

142 and wiring harness if assembled directly to the finisher **106** may cause the finisher **106** to fall from the assembly **100** and decrease quality. In this case, the overall weight of the finisher **106** co-acts with gravity to cause the finisher **106** to decouple itself from the mirror housing **123**. However, if the additional weight attributed to the wire harnesses and the devices **140**, **142** are not part of the finisher **106**, which overall is a part that does not weight much, then quality may be improved and a reduction in the number of finishers that decouple from the assembly **100** may be achieved. In general, the finisher **106** may be removed (i.e., unclipped) from the mirror housing **123** while the electrical devices **140**, **142** remain coupled to the mirror housing **123**.

[0044] FIG. **8** generally depicts a perspective view of the finisher **106** with openings for the electrical devices **140**, **142** of FIG. **6**. The finisher **106** includes a first opening **150** to receive the image capture device **116** and a second opening **152** to receive the lamp **144**, or vice versa. Each of the image capture device **116** and the lamp **144** is not directly attached to the finisher **106** but rather to the mirror housing **123** as noted above. The finisher **106** includes attachment points **154***a*, **154***b*, **154***c*, and **154***d* ("**154**") to attach the finisher **106** to the mirror housing **123**. In general, each attachment point **154** includes a guide **156** and a clip **158**. The guide **156** and the clip **158** may be axially spaced apart from one another (or parallel to one another). In another embodiment, the guide **156** and the clip **158** may be spaced apart from one another but not necessarily axially spaced apart from one another (or not parallel to one another). Each guide **156** serves to positively locate the finisher **106** to the mirror housing **123** as a user inserts the finisher **106** to the mirror housing **123**. In some embodiments, the guide **156** may generally be in the form of a "T-shape". As seen in FIG. **8**, some of the guides **156** may not have a T-shaped structure and may simply be shaped as a straight edge. Each clip **158** generally flexes upon insertion into a mating opening of the mirror housing **123** and locks to the mirror housing **123**.

[0045] FIG. **9** generally depicts a perspective view of the device **142** for the lamp **144** being mounted to the mirror housing **123** in accordance to one embodiment. The assembly **100** generally includes a housing bracket **160** having a portion that is positioned above the device **142** for the lamp **144**. The housing bracket **160** generally provides structural support or stability for a head of the mirror (or reflective surface). In general, all of the mirror head components may be mounted or connected to housing bracket **160**. The housing bracket **160** includes a flexible latch **162**. The flexible latch **162** applies a force against a rear portion **163** of the electrical device **142** to secure the electrical device **142** to the mirror housing **123**. The electrical device **142** includes at least one clip (hereafter "the clip") **164** and a hook and locator mechanism **166** for insertion into the mirror housing **123**.

[0046] In general, the user inserts an upper portion of the rear portion **163** underneath the flexible latch **162** and then inserts the clip **164** into an opening **170** (see FIG. **10**) and the hook and locator mechanism **166** into opening **172** (see FIG. **10**) on the bottom floor **169** of the mirror housing **123**. The flexible latch **162** moves upward and then over the rear portion **163** and applies a clamping force against the rear portion **163** once the clip **164** and the hook and locator mechanism **166** of the device **142** are fully inserted and locked with the mirror housing **123**. In another embodiment, the lamp **144** may be coupled to the mirror housing **123** first. After this operation is performed, the housing bracket **160** may be coupled to the mirror housing **123** in which the flexible latch **162** is placed over the rear portion **163** to retain the lamp **144** to the assembly **100**. The electrical device **142** also includes an opening **168** formed thereon to receive a fastening mechanism (not shown) to act as a secondary mechanism to secure the device **142** to the mirror housing **123**. In general, the use of the opening **168** to receive the fastening mechanism is optional and is generally not required. The utilization of the flexible latch **162** that applies a clamping force on the device **142** generally negates the use of any fastening mechanism and thereby prevents the assembly **100** from experiencing and rattles therein since fasteners will not be required to secure the device **142** within the assembly **100**.

[0047] FIG. **10** generally depicts an underside view of the mirror housing **123** of FIG. **9** in accordance to one embodiment. As noted above, the mirror housing **123** includes the first opening **170** and the second opening **172**. The clip **164** of the device **142** may be inserted into the first opening **170** to secure the device **142** to the mirror housing **123**. The device **142** further includes a hook and locator mechanism **166** that may be inserted into the second opening **172**. In general, the image capture device **116** or the lamp **144** may be inserted into the opening **118** for alignment purposes. The hook and locator mechanism **166** may be rotatable until the clip **164** is seated and secured with the first opening **170**.

[0048] FIG. **11** generally depicts a top view of the mirror housing **123** of FIG. **9**. A shown, the first opening **170** and the second opening **172** directly receive the device **142** and thereby secures the device **142** directly to the mirror housing **123**. As noted above, this condition obviates the need to couple the device **142** to the finisher **106** which provides for an overall weight reduction for the finisher **106**. FIG. **12** provides a more detailed view of the device **142**.

[0049] FIG. **13** generally depicts a perspective view of the base bracket **113**, a cutline gasket **202**, and a base cover **204** in accordance to one embodiment. While not shown in connection with FIG. **1**, the assembly **100** also includes the cutline gasket **202** and the base cover **204**. In general, the base cover **104**, the finisher **106**, the mirror housing **110**, and the cap **112** are formed together to form the exterior shell **115** for the assembly **100**. The base bracket **113** may be positioned within the exterior shell **115** to support the shell **115** about the vehicle **102**. A lower end of the base bracket **113** may be mounted or fixed to a portion of the vehicle **102**, such as a door or pillar. The shell **115** is generally configured to pivot or swivel about the base bracket **113**.

[0050] The cutline gasket **202** may be resilient and is a gasket-like member that serves to provide a seal between the moveable exterior shell **115** and the base bracket **113**. The cutline gasket **202** may eliminate wind noise and prevent water or debris intrusion. The cutline gasket **202** may generally be formed of a single resilient material such as, for example, rubber or the like.

[0051] In general, the embodiment as illustrated in connection with FIG. **13** may control a gap (or cutline gap) **117** (see FIG. **1**) that is generally present between the base cover **104** and the finisher **106** (see also FIG. **1**). The cutline gasket **202** itself is generally situated within the gap **117** formed between the base cover **104** and the finisher **106**. The cutline gasket **202** provides a seal within the gap **117**. In prior implementations, the cutline gasket **202** is situated onto the base cover **204** and the base cover **204** is then positioned on

the base bracket **113** where the cutline gasket **202** is then sandwiched between the base cover **204** and the base bracket **113**. In this case, the gap **117** that is formed between the base cover **104** and the finisher **106** may not be uniform and yield a high degree of variance which may minimize the ability of the cutline gasket **202** to reduce wind noise or prevent water or debris intrusion. In contrast to the prior implementation, FIG. **14** illustrates that the cutline gasket **202** is inserted over the base bracket **113** first. As shown, the base bracket **113** includes an outwardly extending collar **210** to receive the cutline gasket **202**.

[0052] The cutline gasket **202** may include a flange **214** that drapes over the collar **210** and an outbound flange **212** of the base bracket **113**. The flange **214** may assist the user in pulling the cutline gasket **202** over the collar **210** and the outbound flange **212** of the base bracket **113**. The cutline gasket **202** seals itself to the base bracket **113**. Referring to FIGS. **13** and **14**, the base cover **204** is then placed over the cutline gasket **202**. The base cover **104** may be formed of, for example, acrylonitrile styrene acrylate or acrylic styrene acrylonitrile (ASA) or any injectable plastic. The cutline gasket **202** includes an outer collar **216** that receives and directly contacts an underside of the base cover **204**. The base cover **204** includes an opening **218** for receiving the flange **214**. A lower lip **221** of the base cover **204** extends below the flange **214** to also assist the user in fitting the base cover **204** over the flange **214**.

[0053] Referring to FIGS. **13** and **15**, the base bracket **113** includes a plurality of extending portions **220***a*, **220***b*, **220***c* that protrude outwardly from the base bracket **113**. The base cover **204** includes a plurality of fitting openings **222***a*, **222***b*, **222***c* that are fitted over the respective extending portions **220***a*, **220***b*, **220***c* to couple the base cover **204** to the base bracket **113**. As noted above, since the cutline gasket **202** is fitted to the base bracket **113** first, this aspect controls the overall variation in the gap **117** which improves the overall sealing effect of the cutline gasket **202** and further provides a uniform opening (i.e., of the gap **117**) which improves the overall fit and appearance of the assembly **100**.

[0054] FIG. **15** depicts an underside of the base bracket **113**, the flange **214** of the cutline gasket **202** and the base cover **204**. As shown, the base cover **204** further includes flexible hooking portions **230***a*, **230***b*, **230***c* that engage respective portions of a lower lip **240***a*, **240***b*, **240***c* of the base bracket **113**. These features also aid in coupling the base cover **204** to the base bracket **113**. FIG. **16** provide an underside view of the cutline gasket **202** in accordance to one embodiment. The cutline gasket **202** further includes a retaining portion **250** positioned on an underside thereof. The retaining portion **250** includes receiving sections **252***a*, **252***b*, **252***c* to receive an engagement portion (not shown) of the base bracket **113**.

[0055] FIG. **17** generally depicts a perspective view of an electrical connector assembly **300** being coupled to a clip **302** that is located on the mirror housing **123** in accordance to one embodiment. In general, the connector assembly **300** may include a first connector **304** and a second connector **306** that are used to couple wires (or wire harnesses) **308***a*, **308***b* that are routed within the assembly **100**. In one example, the wires **308***a*, **308***b* may correspond to a coaxial wire that is used for transmitting signals to the image capture device **116**. The assembly **100** generally includes pigtail (e.g. which could be wire **308**) that is directly attached to the image capture device **116**. Upon installation of the assembly **100**, it is necessary to connect the wire **308***b* to the wire **308***a* so that one or more controllers positioned in the vehicle can communicate with the image capture device **116** in the assembly **100**. Prior implementations do not provide a clip to fix the first and second connectors **304**, **306**, respectively. This may lead to a rattling noise within the assembly **100** that can be heard by vehicle passengers.

[0056] FIGS. **18** and **19** generally depict a perspective view of the clip **302** of FIG. **17**. The clip **302** may be integrally formed with the mirror housing **123**. Alternatively, the clip **302** may be removably coupled to the mirror housing **123**. The clip **302** includes a standoff portion **320** to raise the attachment point of the first and the second connectors **304**, **306** away from contact with the mirror housing **123**. The clip further includes a receiving alignment tab **322** and a flexible locking arm **324**. The second connector **306** includes a receiving channel **326** (see FIG. **20**) that is inserted into the receiving alignment tab **322** along an axis **325** (see FIG. **18**). Upon insertion of the second connector **306** onto the clip **302**, a mating clip portion **328** (see FIGS. **18** and **20**) positioned on the second connector **306** forces the flexible locking arm **324** to move or deflect upon initial contact. The mating clip portion **328** travels along the axis **325** until a back portion of the mating clip portion **328** passes a front portion of the flexible locking arm **324**. From there, the flexible locking arm **324** no longer experiences a force from the mating clip portion **328** and raises behind the mating clip portion **328** to lock the second connector **306** onto the clip **302**. Once the second connector **306** is fixed to the clip **302**, a user may then attach the first connector **304** to the second connector **306** such that the connector assembly **300** is fixed within the assembly **100**.

[0057] While exemplary embodiments are described above, it is not intended that these embodiments describe all possible forms of the invention. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention. Additionally, the features of various implementing embodiments may be combined to form further embodiments of the invention.

What is claimed is:

1. An exterior rearview winglet assembly for a vehicle comprising:

an exterior shell including a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle;

a base bracket positioned in the exterior shell to couple the exterior shell to the vehicle;

a first housing positioned in the exterior shell;

a finisher being attached to the first housing and extending from at least a portion of the exterior shell at the second side of the exterior shell; and

a first electrical device being directly attached to the first housing and the first electrical device being independent of attachment to the finisher.

2. The exterior rearview winglet assembly of claim **1**, further comprising a second electrical device being directly attached to the first housing and the second electrical device being independent of attachment to the finisher to reduce an overall weight of the finisher.

3. The exterior rearview winglet assembly of claim 2, wherein the first electrical device is an image capture device and the second electrical device is a lamp.

4. The exterior rearview winglet assembly of claim 1, wherein the first electrical device is one of an image capture device, a lamp, an antenna, a communication module, and a sensor.

5. The exterior rearview winglet assembly of claim 1, wherein the first housing includes a flexible latch, and wherein the first electrical device includes a rear portion, a clip, and a hook and locator mechanism for attachment to the first housing.

6. The exterior rearview winglet assembly of claim 5, wherein the clip and the hook and locator mechanism are positioned on opposite sides of one another on the first electrical device to provide attachment and alignment to the first housing.

7. The exterior rearview winglet assembly of claim 5, wherein the rear portion of the first electrical device applies a force against an underside of the flexible latch.

8. The exterior rearview winglet assembly of claim 7, wherein the clip and the hook and locator mechanism are received by respective openings formed in the first housing as the rear portion of the first electrical device applies a force against the underside of the flexible latch.

9. The exterior rearview winglet assembly of claim 8, wherein the flexible latch applies a clamping force against the rear portion of the first electrical device in response to the clip and the hook and locator mechanism being received and attached to the first housing.

10. The exterior rearview winglet assembly of claim 1, wherein the first housing is a mirror housing to support a reflective surface or an image capture device on the exterior shell.

11. The exterior rearview winglet assembly of claim 1, wherein the exterior shell surrounds one of a reflective surface to provide a user with a field of view rearward of the vehicle or an image capture device positioned on the assembly to capture images of an object positioned on a rear or side of the vehicle for viewing by the user.

12. The exterior rearview winglet assembly of claim 1, wherein the first electrical device is further configured to be directly attached to the first housing and being independent of attachment to the finisher to prevent the finisher from decoupling from the exterior shell.

13. An exterior rearview winglet assembly for a vehicle comprising:

an exterior shell including a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle;

a base bracket to couple the exterior shell to the vehicle;

a first housing positioned in the exterior shell;

a finisher being attached to the first housing and extending from at least a portion of the exterior shell at the second side of the exterior shell; and

a first electrical device being directly attached to the first housing and the first electrical device being independent of attachment to the finisher to reduce an overall weight of the finisher.

14. The exterior rearview winglet assembly of claim 13, wherein the first electrical device is one of an image capture device, a lamp, an antenna, a communication module, and a sensor.

15. The exterior rearview winglet assembly of claim 13, wherein the first housing includes a flexible latch, and wherein the first electrical device includes a rear portion, a clip, and a hook and locator mechanism for attachment to the first housing.

16. The exterior rearview winglet assembly of claim 15, wherein the clip and the hook and locator mechanism are positioned on opposite sides of one another on the first electrical device to provide attachment and alignment to the first housing.

17. The exterior rearview winglet assembly of claim 15, wherein the rear portion of the first electrical device applies a force against an underside of the flexible latch.

18. The exterior rearview winglet assembly of claim 17, wherein the clip and the hook and locator mechanism are received by respective openings formed in the first housing as the rear portion of the first electrical device applies a force against the underside of the flexible latch.

19. The exterior rearview winglet assembly of claim 13, wherein the first electrical device is further configured to be directly attached to the first housing and being independent of attachment to the finisher to prevent the finisher from decoupling from the exterior shell.

20. An exterior rearview winglet assembly for a vehicle comprising:

an exterior shell including a first side orientated toward a front of the vehicle and a second side orientated toward a rear of the vehicle;

a base bracket to couple the exterior shell to the vehicle;

a first housing positioned in the exterior shell;

a finisher being attached to the first housing and extending from at least a portion of the exterior shell at the second side of the exterior shell; and

a first electrical device being directly attached to the first housing and the first electrical device being independent of attachment to the finisher to prevent the finisher from decoupling from the exterior shell.

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