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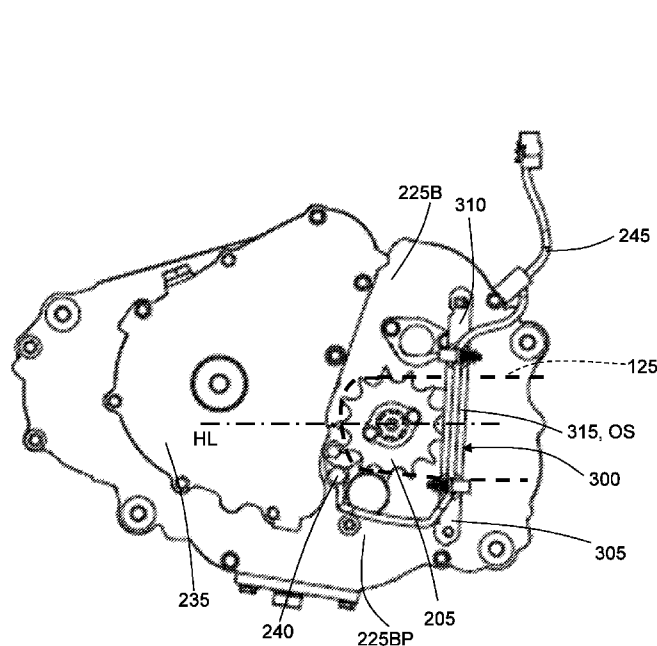


Fig. 1 (e)

(57) Abstract: The present subject matter provides an engine assembly (200) for a two-wheeled vehicle (100). The engine assembly (200) includes a drive sprocket (205) functionally coupled to a crankshaft. The drive sprocket (205) is disposed on one lateral side (LH) of the crankcase body (225A, 225B). A sensor (240) is disposed in proximity to the drive sprocket (205). A cable guide (300) is disposed in proximity to at least one of the drive sprocket (205) and a transmission member (125) connected to the drive sprocket. The cable guide (300) extends across an imaginary horizontal line (HL) passing through an axis of the drive sprocket (205). The cable guide (300) is adapted to securely supports and route at least a portion of the sensor cable (245) away from said sensor (240).

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A CABLE GUIDE FOR AN ENGINE ASSEMBLY

TECHNICAL FIELD

[0001] The present subject matter relates generally to an engine assembly for a two-wheeled vehicle, and more particularly to a sensor cable guide for the two-wheeled vehicles.

BACKGROUND

5 [0002] Generally, in a two-wheeled vehicle a frame assembly extends rearward from a head tube. The frame assembly acts as a skeleton for the vehicle that supports the vehicle loads. A front portion of the frame assembly connects a front wheel through one or more front suspension(s). The frame assembly extends towards a rear portion of the vehicle. A rear wheel is connected to a
10 frame assembly through one or more rear suspension(s). An engine assembly is mounted to the frame assembly of the vehicle. The engine assembly is functionally connected to the rear wheel, which provides the forward motion to the vehicle. Typically, plurality of panels are mounted to the frame assembly of the vehicle that cover various vehicle parts mounted thereon.

15 BRIEF DESCRIPTION OF THE DRAWINGS

[0003] The detailed description of the present subject matter is described with reference to the accompanying figures. Same numbers are used throughout the drawings to reference like features and components.

20 [0004] Fig. 1 (a) illustrates a left side of an exemplary two-wheeled vehicle, in accordance with an embodiment of the present subject matter.

[0005] Fig. 1 (b) depicts a left side view of the engine assembly, in accordance with the embodiment depicted Fig. 1 (a).

[0006] Fig. 1 (c) depicts a rear view of the cable guide, in accordance with the embodiment depicted in Fig. 1 (b).

25 [0007] Fig. 1 (d) depicts a rear view of a portion of the engine assembly employed with the cable guide of Fig. 1 (c), in accordance with the embodiment depicted in Fig. 1 (b).

[0008] Fig. 1 (e) depicts an enlarged side view of the engine assembly, in accordance with the embodiment depicted in Fig. 1 (b).

[0009] Fig. 1 (f) depicts a perspective view of the cable guide member, in accordance with the embodiment as depicted in Fig. 1 (b).

5 [0010] Fig. 1 (g) depicts a sensor cable mounted to the cable guide and an exploded view thereof, in accordance with the embodiment depicted in Fig. 1 (d).

DETAILED DESCRIPTION

[0011] Typically, in a two-wheeled vehicle, the engine assembly is mounted to the body frame or is swingably connected to the frame assembly. The engine
10 assembly is provided with an air supply system and a fuel supply system that supply air-fuel mixture from an air filter and a fuel tank respectively. Combustion of air-fuel mixture takes place in a cylinder portion of the engine assembly. The combustion process either in two-stroke or four-stroke engine creates reciprocating motion of a piston disposed therein. The reciprocating motion of
15 the piston is converted into rotatory motion of the crankshaft thereby generating desired power/torque that gets transmitted to at least one wheel of the vehicle.

[0012] With the advancements in the technology, in order to provide performance, efficiency, and ease of use the vehicle is provided with plurality of electronic systems including an ignition system, an automatic transmission
20 system, an integrated starter generator for engine assist etc., which functionally may depend on speed of the engine that is speed of rotation of crankshaft or crankshaft speed. Conventionally, the speed is identified through a sensor that identifies the rotational speed of the crankshaft or through other rotating parts that work in conjunction with the crankshaft. The speed sensor communicates
25 with a control unit or the like to identify the crankshaft speed. Typically, speed sensor is disposed near a drive sprocket of the engine, which drives the rear wheel of vehicle. The cable connected to the speed sensor is routed to the wiring harness or to the control unit. Similarly, a gear position sensor for identifying the gear position or a temperature sensor to identify the temperature of the engine is
30 also disposed on the crankcase and is in proximity to the drive sprocket. Moreover, the sensor cable connected to the sensor is also disposed near moving

parts. The drive sprocket and the chain drive are exemplary moving parts and, the gear transmission is disposed in proximity to the drive sprocket. Therefore, the sensor cable may interfere with the moving parts of the engine assembly that would damage the cable. Also, the drive sprocket region is congested with
5 plurality of components like chain drive, the sensors, and the lever arms connecting the gear drum. Therefore, the challenge is also compactly route the sensor cable in the aforementioned region.

[00013] Further, the sensor cable that is disposed about the engine assembly is also subject to vibrations of the engine/vehicle whereby the cable is disturbed
10 from a desired position. The cable disturbed from the desired position may interfere with the moving parts of the engine assembly including the drive sprocket or the transmission chain. This would damage the cable thereby tampering information from the sensor. For example, damage of sensor cable affects the speed information from reaching the electronic control unit or to the
15 user. Moreover, such failure or malfunction would alter the operation of the systems of the vehicle that are dependent on the information like crankshaft speed, gear position, or temperature. In addition, the faulty crankshaft speed data would affect the engine function as the user may operate the engine in an undersized range. For example, in case of system involving automatic
20 transmission (AMT), such faulty engine speed data would result in actuation of up-shift/down-shift by the AMT at undesired condition. This would affect the functioning of engine thereby affecting the drivability of the user. Further, the safety of the user is also compromised.

[00014] Thus there is a need for addressing the aforementioned and other
25 problems in the prior art. A sensor cable is to be routed without interfering with moving parts of the engine/vehicle.

[00015] Hence, it is an object of the present subject matter to provide an engine assembly employed with a cable guide.

[00016] It is an aspect of the present subject matter that the cable guide
30 extends from proximity of the electronic component including a sensor and

extends away from said sensor providing optimum routing path for the sensor cable.

[00017] It is another aspect of the present subject matter that the cable guide extends across an imaginary horizontal line passing through an axis of the drive sprocket, whereby the cable guide forms a bridge passing across the region
5 covered by the drive sprocket and/or the chain drive or other moving parts.

[00018] It is a feature of the present subject matter that the cable guide includes a path portion for securely routing the sensor cable from the sensor to a control unit or the like. Also, the path portion includes an inner lateral surface
10 facing at least one of said drive sprocket and said transmission member and an outer lateral surface capable of securely supporting and routing at least a portion of said sensor cable along said path portion. It is advantages that cable guide keeps the sensor cable away from the moving parts.

[00019] It is another aspect of the present subject matter that at least a portion
15 of the cable guide, which is preferably a path portion, is at lateral offset from an exposed surface of the lateral side of the crankcase body. In other words, the path portion is disposed away from the crankcase body surface thereby providing sufficient clearance for operation of the moving parts. It is an advantage that the lateral offset provides clearance between the sensor cable and moving parts of the
20 engine assembly including a drive sprocket and a transmission member. In one embodiment, in a side view the cable guide overlaps with at least one of the drive sprocket or the transmission member whereby a compact layout is provided.

[00020] It is yet another aspect of the present subject matter that the sensor cable is securely held by one or more guiding provision(s) of the cable guide
25 thereby reducing the effect of vibration on the sensor cable.

[00021] It is an advantage of the present subject matter that the sensor cable is held intact in a desired position even in a sprocket cover removed condition. Therefore, during servicing of the sprocket region, where there is a requirement for removing the sprocket cover, the sensor cable is retained in the desired
30 position.

[00022] In an embodiment, the guiding provision(s) of the cable guide includes button straps. In another embodiment, a C-clamp acts as the guiding provision(s). In one another embodiment, the sensor cable can be snap-fitted to the cable guide.

5 [00023] It is another advantage that the sensor cable is secured to the cable guide because of which the cable guide interfering with the sprocket cover during assembly of the sprocket cover to the engine assembly is eliminated.

[00024] It is yet another feature of the present subject matter that the cable guide is provided with anti-rotation member(s) that enable in ease of assembly of
10 the cable guide, especially during fastening of the cable guide to the crankcase.

[00025] In an embodiment, the cable guide and the cover sprocket are mounted to common mounting points. It is an advantage that need for layout change is eliminated, as provision of additional mounting points for the cable guide is eliminated. It is another advantage that the cable guide can be adapted to
15 be accommodated in any engine layout. Further, it is another feature that the cable guide is retrofittable.

[00026] The aforesaid and other advantages of the present subject matter would be described in greater detail in conjunction with the figures in the following description.

20 [00027] Fig. 1 (a) illustrates a left side view of an exemplary two-wheeled vehicle 100, in accordance with an embodiment of the present subject matter. Arrows provided in the top right corner of each figure depicts direction with respect to the vehicle, wherein an arrow F denotes front direction, an arrow R indicates rear direction, an arrow Up denotes upward direction, and an arrow Dw
25 denotes downward direction. The vehicle 100 includes a frame assembly 105 that extends rearward from a head tube 105A. The frame assembly 105 extends along in a longitudinal direction F-R of the vehicle 100. The frame assembly 105 includes a mainframe comprising a main tube 105B extending rearward from a rear portion of the head tube 105A and a down tube 105C that extends rearwardly
30 downward from the head tube 105A. The frame assembly 105 may further

comprise a sub-frame formed by a pair of rear tubes that extend obliquely rearward from the main frame. An engine assembly 200 is mounted to the main frame of the frame assembly 105.

[00028] The engine assembly 200 acts as the power unit of the vehicle 100, wherein the power unit may also include a traction/electrical motor (not shown). The engine assembly 200 is coupled to an exhaust assembly 110 that scavenges exhaust gases therethrough. A front portion of a swing arm 115 is swingably connected to the frame assembly 105 and a rear portion of the swing arm 115 rotatably supports a rear wheel 120. The rear wheel 120 is functionally coupled to the engine assembly 200 through a transmission system/member 125. In a preferred embodiment, the transmission system 125 includes a chain drive coupled to an output of manual gear transmission. However, the transmission system 125 may include an automatic transmission or continuously variable transmission. Further, the swing arm 115 is coupled to the frame assembly 105 through one or more rear suspension(s) (not shown). In the present embodiment, a mono-shock rear suspension connects the swing arm 115 to the frame assembly 105. Similarly, a pair of front forks 130 supports a front wheel 135 and is steerably supported by the head tube 105A. A handlebar assembly 140 is connected to an upper portion of the pair of front forks 130. Further, a front fender 145 covers at least a portion of the front wheel 135 and the front fender assembly 145 is mounted to the front forks 130.

[00029] A fuel tank 150 is mounted to the main tube 105B of the frame assembly 105 and disposed rearwardly of the handlebar assembly 140. A seat assembly including a rider seat 155 and a pillion seat 160 is disposed rearwardly of the fuel tank assembly 150 and is supported by the rear tubes. A pair of rider foot pegs 165 is disposed on either sides and is mounted to the frame assembly 105 of the vehicle that supports rider foot. A rear fender 170 is disposed upwardly of the rear wheel 120 covering at least a portion of the rear wheel 120.

[00030] Further, the engine assembly 200 is functionally coupled to an air-fuel supply system (not shown) that supplies air and fuel to the engine

assembly 200. The torque/power output of the engine assembly 200 is transferred to a drive sprocket 205 (shown in Fig. 1 (b)). The chain drive 125 is coupled to the drive sprocket 205. A sprocket cover 210 encloses the drive sprocket 205 and at least a portion of the chain drive 125.

5 **[00031]** Furthermore, the vehicle 100 includes various electrical and electronic systems including a starter motor (not shown), a headlamp 175, a vehicle control unit, and a tail lamp 180. In addition, the vehicle includes safety systems including a synchronous braking system (not shown), and an anti-lock braking system.

10 **[00032]** Fig. 1 (b) depicts an enlarged left side view of the engine assembly 200, in accordance with the embodiment depicted Fig. 1 (a). Further, Fig. 1 (b) depicts the engine assembly 200 with a sprocket cover 210 in disassembled condition. The engine assembly 200 is mounted to the frame assembly 105 through engine mounting bracket(s) 250A, 250B provided on the main tube 105B and the down tube 105C. In the present embodiment, the engine assembly 200
15 includes at least one cylinder head 215 comprising at least one intake valve (not shown) and at least one exhaust valve (not shown). The cylinder head 215 is mounted to a cylinder block 220. The cylinder block 220 defines a cylinder portion and a piston (not shown) is radially enclosed by the cylinder portion. The
20 cylinder block 220 is mounted to a crankcase 225. In the present embodiment, the engine assembly 200 is forwardly inclined type. The inclination is of a piston axis defined by reciprocating motion of the piston. In another embodiment, a vertical or a horizontal engine may be used.

25 **[00033]** The crankcase body 225 includes a right crankcase member 225A and a left crankcase member 225B that are separated in a lateral direction. The crankcase body 225 rotatably supports plurality of engine components including the crankshaft. The reciprocating motion of the piston is converted into the rotatory motion of the crankshaft. Further, the engine assembly 200 includes a clutch assembly (not shown) mounted on one lateral side of the engine assembly
30 and a magneto or an integrated starter generator (not shown) is mounted to

another side of the engine assembly 200. The clutch assembly is enclosed by a clutch cover (not shown) that is mounted to the crankcase 225. Similarly, the magneto is enclosed by a magneto cover 235 that is mounted to the crankcase 225. In the present embodiment, the clutch cover is disposed on the right hand side RH of the engine assembly and the magneto cover 235 is disposed on the left hand side LH of the engine assembly 200. A gear actuation drum (not shown) is coupled to a gear arm 185 that is coupled to a gearshift lever 185A for shifting gears. In addition, a sensor 240 is mounted to the crankcase body 225 for identifying the gear position. In one embodiment, the sensor is mounted to
5
10 identify the crankshaft speed.

[00034] Specifically, the sensor 240 is mounted to the left crankcase member 225B of the crankcase 225. In one embodiment, the sensor 240 is facing inward of the crankcase body 225 and is disposed adjacently to a rotating gear or a gear actuation drum or a shaft. In an embodiment, the sensor is a speed sensor
15 provided to sense speed of the engine and a gear or a shaft is provided with plurality of teeth that are annularly disposed that enables in identifying rotational speed. For example, a speed sensor includes a Hall Effect sensor that works in conjunction with toothed gear.

[00035] A sensor cable 245 is electrically connecting the sensor 240 to a wiring harness (not shown) or to a control unit (not shown). In the present embodiment, the sensor cable 245 is directed towards an opening provided on the sprocket cover 210 through which the sensor cable 245 is routed. In the present embodiment, the drive sprocket 205 is disposed adjacent to the rear end portion of the magneto cover 235. The sensor 240 is disposed between the drive sprocket
20
25 205 and the magneto cover 235.

[00036] The sensor cable 245 extends from the sensor 240 about the drive sprocket in the upward direction Up. At least a portion of the sensor cable 245 is supported by a cable guide 300 mounted to the crankcase 225. The drive sprocket includes a rotating axis about which the drive sprocket rotates and an imaginary
30 horizontal line HL passes through the rotating axis in a longitudinal direction F-R

of the vehicle 100. In other words, the imaginary horizontal line HL is extending in front-rear direction and the imaginary horizontal line HL is passing through the rotating axis of the drive sprocket 205. The cable guide 300 extends across the imaginary horizontal line HL, which enables guiding of the sensor cable 245
5 away from the drive sprocket 205 and the chain drive 125 that is functionally connected to the drive sprocket 205. The cable guide 300 includes at least a portion that is at a lateral offset from an exposed surface/outer peripheral surface 225BP of the left crankcase member 225B. In a preferred embodiment, the at least a portion of the cable guide 300 is at the lateral offset L, which is away from
10 said exposed surface.

[00037] In the present embodiment, the sensor 240 is disposed downward of said imaginary horizontal line HL and forwardly downward of the drive sprocket 205, wherein said sensor cable 245 extends rearward from the sensor 240 and then towards the cable guide 300. The sensor 240 is working in conjunction with the
15 gear or the shaft supported by the crankcase body 225 therein. In another embodiment, the sensor is capable of identifying a gear position depending on the position or rotation of the gear actuation drum or the like. The sensor 240 is connected to a control unit (not shown) that is disposed substantially upwardly of the engine 200. Therefore, the sensor cable 245 is routed downwardly rearward
20 away from the drive sprocket 205 and towards the first end portion 305 of the cable guide 300 and through the cable guide 300 towards second end portion 310 of the cable guide 300, wherein in the present implementation the cable guide 300 extends in vertical direction Up-Dw across the imaginary horizontal line HL, for routing the cable 245 upwards towards the control unit. In one embodiment,
25 the sensor cable 245 extends substantially along the long axis of the cable guide 300. In the present embodiment, the cable guide 300 is mounted to the crankcase through end portions 305, 310 thereof. Moreover, the cable guide 300 is capable of having any geometrically regular or irregular shapes so as to guide the sensor cable depending on position of the sensor.

[00038] Fig. 1 (c) depicts a rear view of the cable guide 300, in accordance with the embodiment depicted in Fig. 1 (b). The guide member 300 comprises a first arm member 305 and a second arm member 310 that are preferably disposed at a first end portion 305 and at a second end portion 310 of the guide member 300, respectively. The first end portion 305 is in proximity to the sensor 240 and the second end portion 310 is disposed away from the sensor 240. Hereinafter, the terms first arm member 305 and the first end portion 305 are integrally formed and they are interchangeably used. Similarly, the second arm member 310 and the second end portion 310 are integrally formed and they are interchangeably used.

[00039] The first arm member 305 and the second arm member 310 are connected by a path portion 315. Preferably, the first arm member 305, the second arm member 310, and the body portion 315 are integrally formed. The cable guide 300 is fastened to the outer peripheral surface 225BP of the left crankcase member 225B of the crankcase 225. The first arm member 305 and the second arm member 310 are provided with mounting holes 305A, 310A (as shown in Fig. 1 (f)) that enable in fastening the cable guide 300 to the crankcase body 225. Further, the path portion 315 of the cable guide 300 is provided with one or more holding provisions 320A, 320B that enable in securely holding the sensor cable 245 along the path portion 315. In the present embodiment, the one or more holding provisions 320A, 320B that are having a cavity through which one or more securing members 330A, 330B securely hold the sensor cable 245 to the cable guide 300. Also, the path portion 315 includes an inner lateral surface IS and an outer lateral surface OS. Specifically, the inner lateral surface IS is an inward surface that is facing at least one of the crankcase 225 the drive sprocket 205 and the transmission member 125, and the outer lateral surface OS is an outward face facing away from the crankcase 225. The sensor cable 245 is secured about the outer surface OS. Therefore, the path portion 315 disposed between the moving parts of the engine 200 and the sensor cable 245 acts as a bridge passing across an imaginary horizontal line HL providing sufficient

clearance thereof, thereby eliminating interference of the sensor cable 245 with the moving parts.

[00040] Furthermore, the cable guide 300 is provided with a first anti-rotation member 325A disposed at the first arm member 305. The first anti-rotation member 325A abuts against at least a portion of the crankcase 225. In a preferred embodiment, the first anti-rotation member 325A comprises a wall provided with a U-shaped or a V-shaped cut. In the present embodiment, a U-shaped cut is provided that abuts against a peripheral wall 225BW of the left crankcase member 225B. The peripheral wall 225BW of the crankcase, in one embodiment, is the outer most wall of the crankcase that encloses the sprocket drive 20 and other components that are mounted to the crankcase 225. Also, the sprocket cover 210 gets mounted to the peripheral wall 225BW. As shown in Fig. 1 (d), the peripheral wall 225BW annularly encloses the drive sprocket 225 and the cable guide 300, wherein U-shaped cut 325U (shown in Fig. 1 (f)) abuts against the peripheral wall 225BW of the crankcase body 225. This enables in restricting the rotation of the guide member 300 that is fastened to the one lateral side of the crankcase 225. The one lateral side of the crankcase 225 in the present embodiment is the exposed lateral side of the crankcase left member 225B. In addition, the provision of anti-rotation member 325A eliminates rotation of the cable guide 300, especially during assembly of the guard member 300 by fasteners that requires rotation. This enables in ease of assembly and also restricts the rotatory motion of the cable guide 300 during assembly, as the anti-rotation member abutting the crankcase retains the cable guide 300 in the desired location. Similarly, a second anti-rotation member 325B is provided on the second arm member 310 of the cable guide 300 that further restricts rotation or movement of the cable guide 300 during assembly.

[00041] Fig. 1 (d) depicts a rear view of a portion of the engine assembly 200 employed with the cable guide of Fig. 1 (c), in accordance with the embodiment depicted in Fig. 1 (b). Fig. 1 (e) depicts an enlarged side view of the engine assembly 200. The drive sprocket 205 is disposed on one lateral side, which is

towards the left portion 225B of the crankcase 225. The sensor 240 (shown in Fig. 1 (b)) is mounted to the left crankcase member 225B. The drive sprocket 205 is positioned adjacently rearward to the magneto cover 235. The sensor 240 is disposed in proximity to the drive sprocket 205 and the chain drive 125, is
5 disposed in a space rearward to the magneto cover 235. In a plan view or a rear view, the path portion 315 (shown in Fig. 1 (c)) is at lateral offset L from rest of the cable guide 300 that includes first arm member 305 and the second arm member 310. In other words, the first end portion 305 and second end portion 310 of the cable guide are in proximity to outer peripheral surface 225BP of the
10 left crankcase member 225B and the path portion 315 is away from outer peripheral surface 225BP of the left crankcase member 225B. Also, the inner lateral surface IS of the cable guide 300 is facing at least one of said drive sprocket 205 and said transmission member 125 and an outer lateral surface OS is capable of securely supporting and routing at least a portion of said sensor cable
15 245 along said path portion 315. This eliminates the cable 245 to come in contact with the moving parts of the engine assembly 200 that includes the drive sprocket 205 and chain drive 125. Also, in an assembled condition of the sprocket cover 210, the sensor cable 245 along with path portion 215 are completely enclosed thereby protecting the sensor cable 245 from external factors like dust, water etc.

20 **[00042]** Moreover, in one embodiment, in a side view, the path portion 315 overlaps with the drive sprocket 205 and the cable guide 300 provides the gap/clearance to route the sensor cable 245. Further, in one implementation, the securing members are button strap members 330A, 330B secure the cable to the cable guide thereby reducing the effect of vibrations on the cable 245. This
25 enables positioning the cable 245 intact to the cable guide 300. Moreover, the button strap member enables ease of servicing or removal of the sensor cable. Also, during the assembly of the sprocket cover 210 or during the removal of the sprocket cover 210 during maintenance, the cable 245 is intact in the desired position whereby it does not interfere with the sprocket cover 210.

[00043] Fig. 1 (f) depicts a perspective view of the cable guide member, in accordance with the embodiment as depicted in Fig. 1 (b). Fig. 1 (g) depicts a sensor cable mounted to the cable guide 300 and an exploded view thereof, in accordance with the embodiment depicted in Fig. 1 (d). The sensor 240 is mounted to a casing being fastened to the left crankcase member 225B of the crankcase 225. The sensor cable 245 extends downward of the drive sprocket 205 and then extends rearward substantially in a longitudinal direction away from the sensor 240 and then extends upwards towards an exit (not shown) provided on the sprocket cover 210 (shown in Fig. 1 (a)). In present embodiment, the securing members 330A, 330B, 330C are provided that engage with holding provisions 320A, 320B provided on the cable guide 300. Further, the cable guide 300 is provided with the second anti-rotation member 325B that engages or abuts against at least a portion of the crankcase 225B that enables in restricting the rotatory motion of the cable guide 300, especially during assembly thereby improving the ease of assembly.

[00044] The cable guide includes the first arm member 305 and the second arm member 310 provided with mounting holes 305A, 310A through which the cable guide 300 is secured to the crankcase 225. In one embodiment, the mounting holes 305A, 310A includes a first mounting that is elongated type that enables ease of alignment and assembly to compensate any assembly or manufacturing variations. The path portion 315 is connecting the first arm member 305 and the second arm member 310. In a preferred embodiment, the first arm member 310, the second arm member 310 and the path portion 315 are integrally formed of any known polymer. The cable guide made of polymer is preferred as the sensor cable is an electrical conductor and the cable guide acts as insulator. Moreover, the cable guide is made of material capable of withstanding high engine temperatures. The cable guide 300 is secured to the crankcase body 225 through the mounting provision(s) (not shown) provided for fastening the sprocket cover 210 to the crankcase 225. Therefore, need for any design changes is eliminated. Further, the cable guide 300 is made of a non-conducting material

including any polymer. Thus, the sensor cable 245 is electrically isolated from the crankcase body 225 of the engine 200. In addition, the path portion 315 disposed at lateral offset L from the (shown in Fig. 1 (c)) of the cable guide 300 reduces impact on heat of the sensor cable 245 thereby improving the life of the
5 sensor cable 245.

[00045] It is to be understood that the aspects of the embodiments are not necessarily limited to the features described herein. Many modifications and variations of the present subject matter are possible in the light of above disclosure. Therefore, within the scope of claims of the present subject matter, the
10 present disclosure may be practiced other than as specifically described.

I/We claim:

1. An engine assembly (200) for a two-wheeled vehicle (100), said engine assembly (200) comprising:

5 a crankcase body (225A, 225B) capable of rotatably supporting a crankshaft;

a drive sprocket (205) functionally coupled to said crankshaft, said drive sprocket (205) disposed on one lateral side (LH) of said crankcase body (225A, 225B) and said drive sprocket (205) functionally coupled to a transmission member (125); and

10 a sensor (240) disposed in proximity to said drive sprocket (205), said sensor (240) being functionally connected to a sensor cable (245); and

a cable guide (300) disposed in proximity to at least one of said drive sprocket (205) and said transmission member (125), said cable guide (300) extends across an imaginary horizontal line (HL) passing through an axis of the drive sprocket (205), and said cable guide (300) is adapted to securely supports and route at least a portion of the sensor cable (245) away from said sensor (240).

2. The engine assembly (200) as claimed in claim 1, wherein said one lateral side (LH) of said crankcase body (225A, 225B), said cable guide (300) having a first end portion (305) disposed in proximity to said sensor (240) and a second end portion (310) of said cable guide (300) disposed away from said sensor (240), said cable guide (300) includes a path portion (315) connecting said first end portion (305) and said second end portion (310), wherein said path portion (315) includes an inner lateral surface (IS) and an outer lateral surface (OS), said inner lateral surface (IS) facing at least one of said drive sprocket (205) and said transmission

member (125), said outer lateral surface (OS) capable of securely supporting and routing at least a portion of said sensor cable (245) along said path portion (315).

3. The engine assembly (200) as claimed in claim 1 or 2, wherein said first end portion (305) and said second end portion (310) of the cable guide (300) are in
5 proximity to outer peripheral surface (225BP) of said one lateral side of the crankcase body (225A, 225B) with respect to said path portion (315) disposed at a lateral offset (L) from said outer peripheral surface (225BP) of said crankcase body (225A, 225B).

4. The engine assembly (200) as claimed in claim 1 or 2, wherein said path
10 portion (315) of the cable guide (300) includes one or more holding provisions (320A, 320B) provided to securely hold the sensor cable (245) thereat, said holding provision (320A, 320B) define a cavity and a securing member (330A, 330B) is provided thereat to securely hold the sensor cable (245).

5. The engine assembly (200) as claimed in claim 1, wherein said path portion
15 (315) overlaps with at least one of said drive sprocket (205) and said transmission member (125) when viewed from vehicle side.

6. The engine assembly (200) as claimed in claim 1, wherein said first end portion (305) includes a first mounting arm (305) and said second end portion (310) includes a second mounting arm (310), and said cable guide (300) is fastened
20 to outer peripheral surface (225BP) of crankcase body (225A, 225B) through mounting holes (305A, 310A) provided at said mounting arms (305, 310).

7. The engine assembly (200) as claimed in claim 1 or 6, wherein said mounting arms (305, 310) are provided with anti-rotation member(s) (325A, 325B) abutting against at least a portion of the crankcase body (225B).

25 8. The engine assembly (200) as claimed in claim 7, wherein said anti-rotation member(s) (325A, 325B) includes a first anti-rotation member (325A) comprising

a U-shaped cut (325U) that abuts against a peripheral wall (225BW) of the crankcase body (225) whereby said U-shaped cut (325U) restricts rotation of the guard member (300) during assembly.

9. The engine assembly (200) as claimed in claim 1, wherein said sensor cable
5 (245) functionally connects said sensor (240) to an electrical component including control unit mounted to said vehicle (100), at least a portion of said sensor cable (245) is covered by a sprocket cover (210) mounted to said crankcase body (225A, 225B).

10. The engine assembly (200) as claimed in claim 1 or 5, wherein said mounting
10 holes (305A, 310A) includes a first mounting hole (310A) provided with an elongated mounting hole (310A) that compensates any manufacturing variations thereby enabling ease of assembly.

11. The engine assembly (200) as claimed in claim 1, wherein said sensor (240) is
disposed downward of said imaginary horizontal line (HL) and forwardly
15 downward of the drive sprocket (205), wherein said sensor cable (245) extends rearward from the sensor (240) and towards said cable guide (300).

12. The engine assembly (200) as claimed in claim 1, wherein said cable guide
(300) is made of a rigid non-conducting material including any known polymer
and said cable guide (300) is capable of withstanding temperature of said engine
20 assembly (200).

13. The engine assembly (200) as claimed in claim 1, wherein said transmission
(125) is a chain drive and said transmission (125) is functionally coupled to a
driven sprocket coupled to at least one wheel of said two-wheeled vehicle (100).

14. The engine assembly (200) as claimed in claim 7, wherein said anti-rotation
25 member(s) (325A, 325B) abuts a peripheral wall (225BW) of said crankcase body (225B) that annularly encloses the drive sprocket (225) and the cable guide (300).

15. A cable guide (300) for routing a sensor cable (245), said cable guide comprising:
- a first end portion (305);
 - a second end portion (310); and
 - 5 a path portion (315) connecting said first end portion (305) and said second end portion (310), wherein
- said first end portion (305) of said cable guide (300) is disposed in proximity to an electronic component (240) and the path portion (315) being adapted to securely route said sensor cable (245) functionally connected to the electronic component
- 10 (240) towards said second end portion (310), and wherein an anti-rotation member(s) (325A, 325B) provided on at least one of said first end portion (305) and second end portion (310) that enables retaining said cable guide (300) in a desired position.

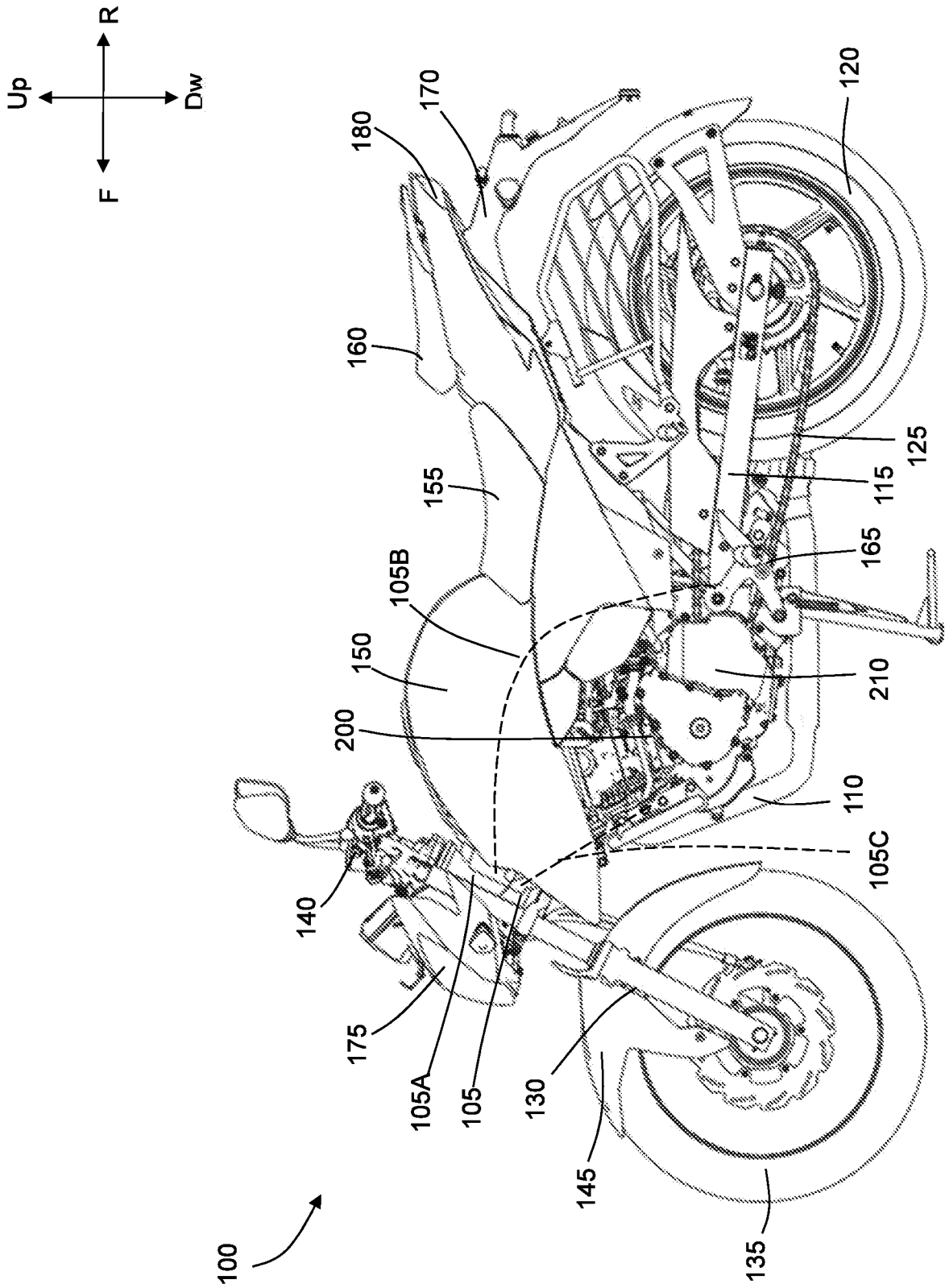


Fig. 1 (a)

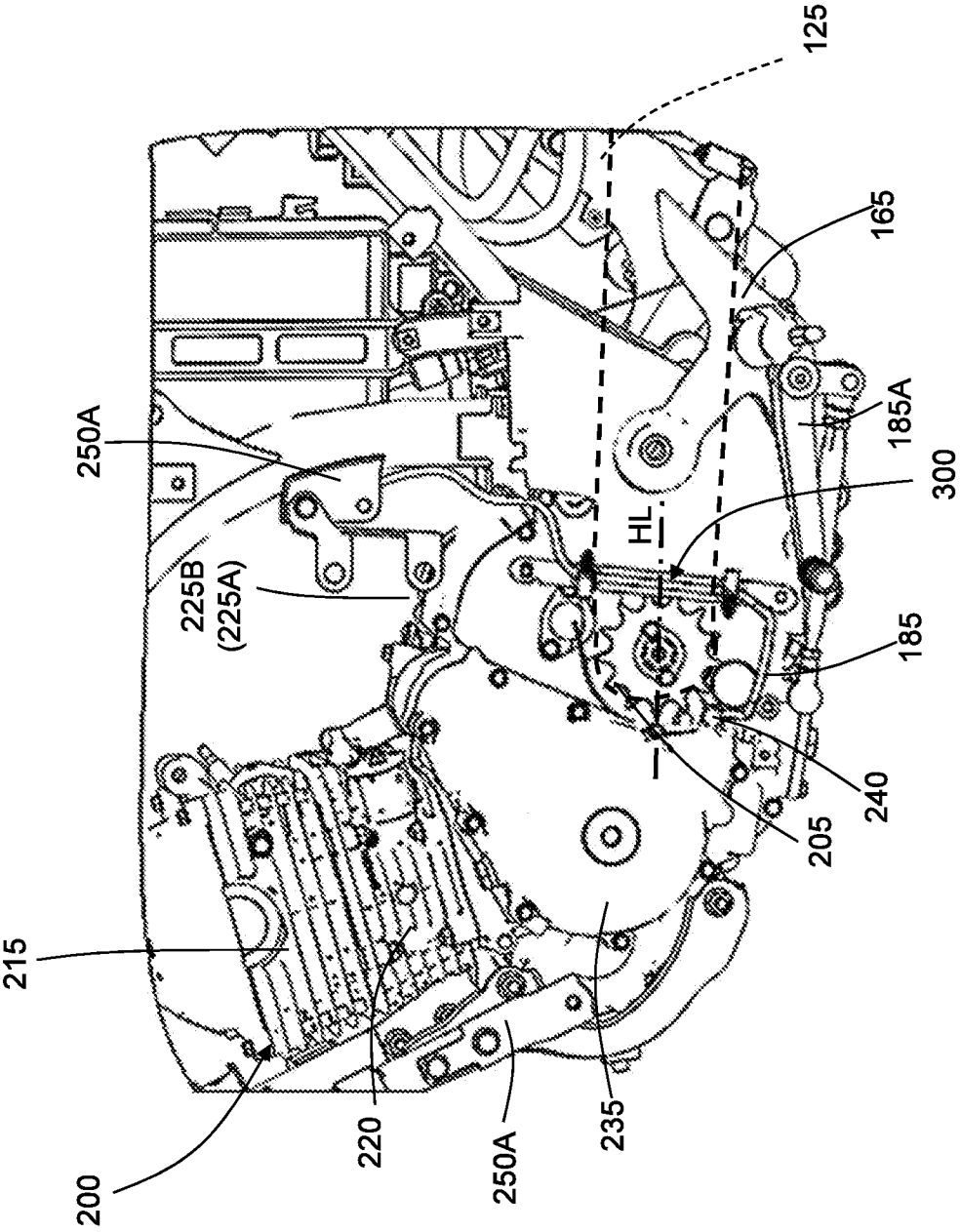
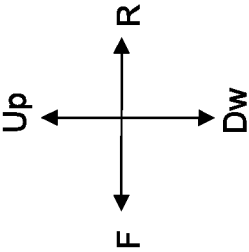


Fig. 1 (b)

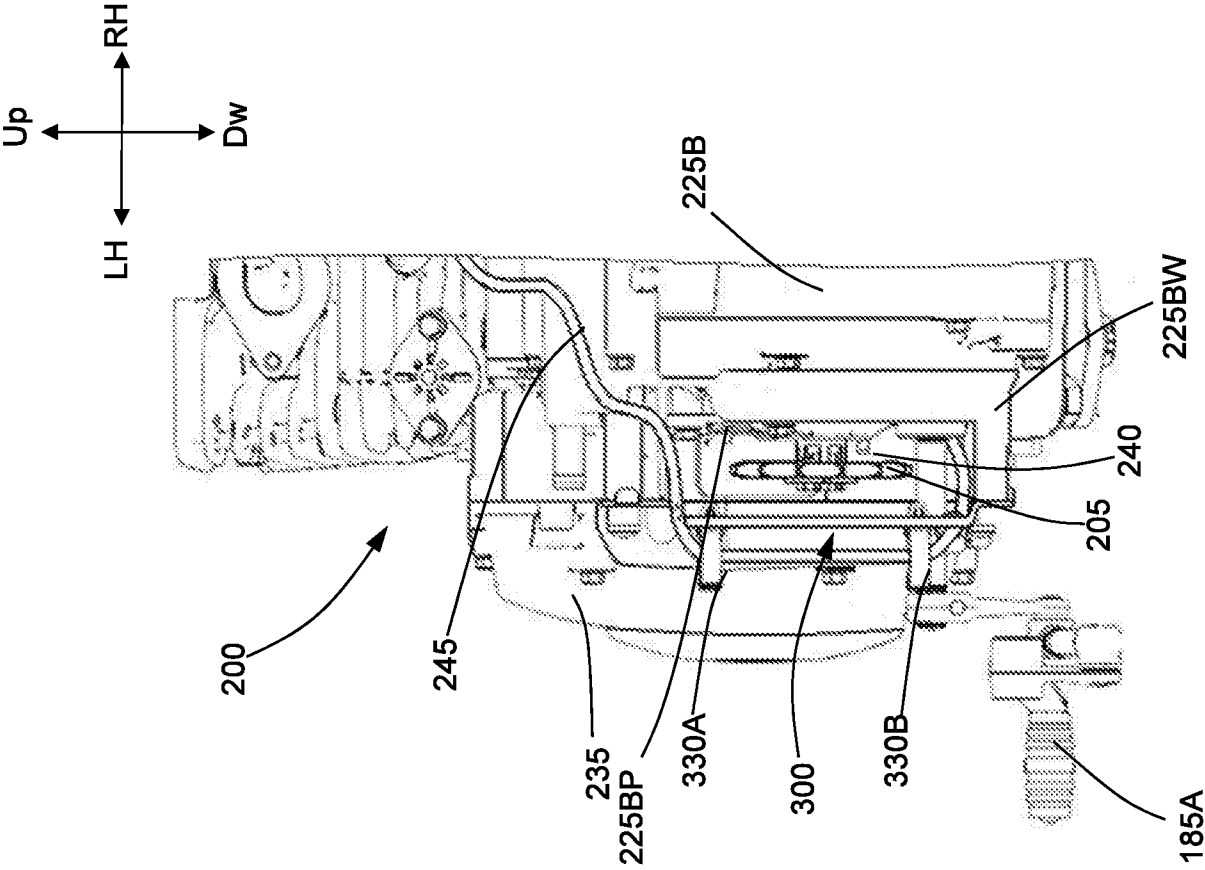


Fig. 1 (d)

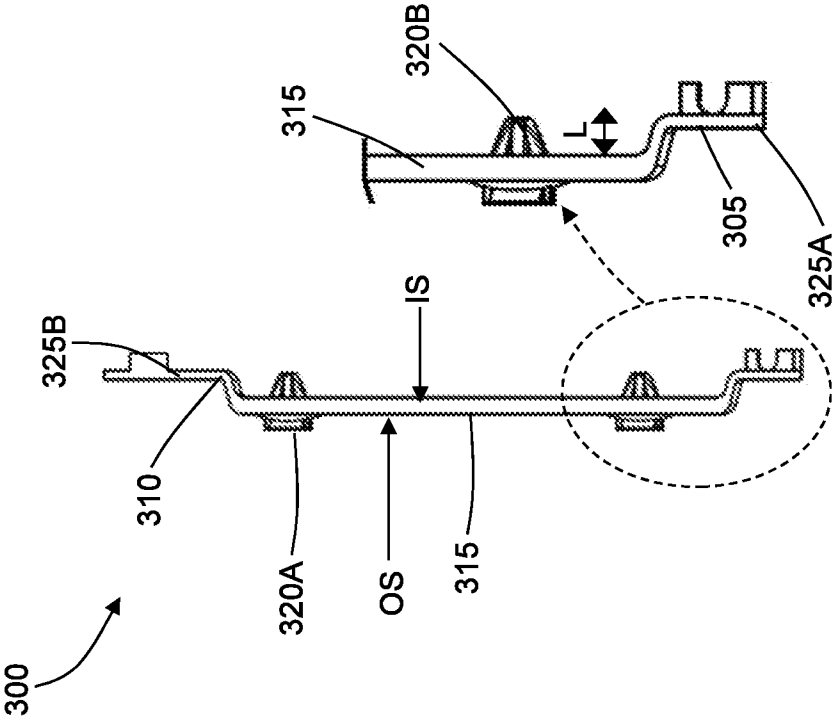


Fig. 1 (c)

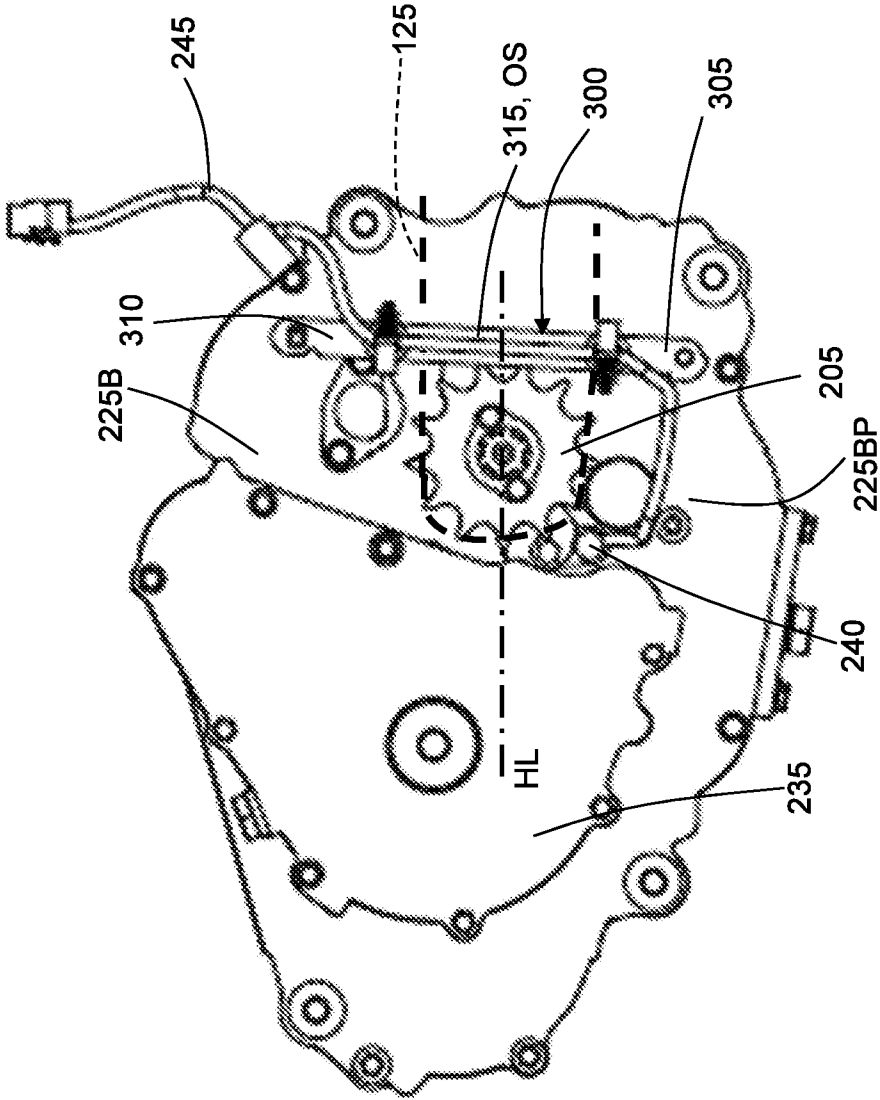
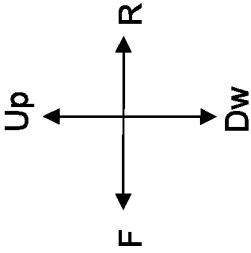
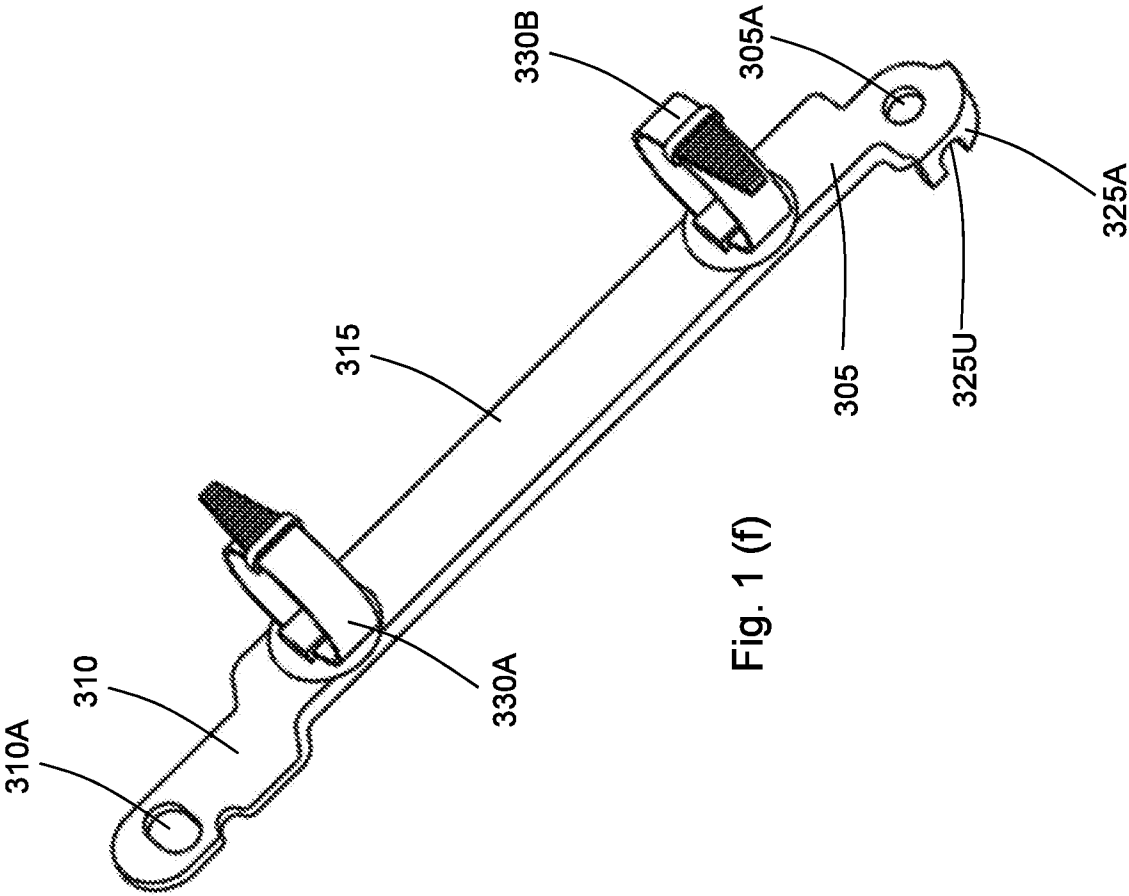


Fig. 1 (e)



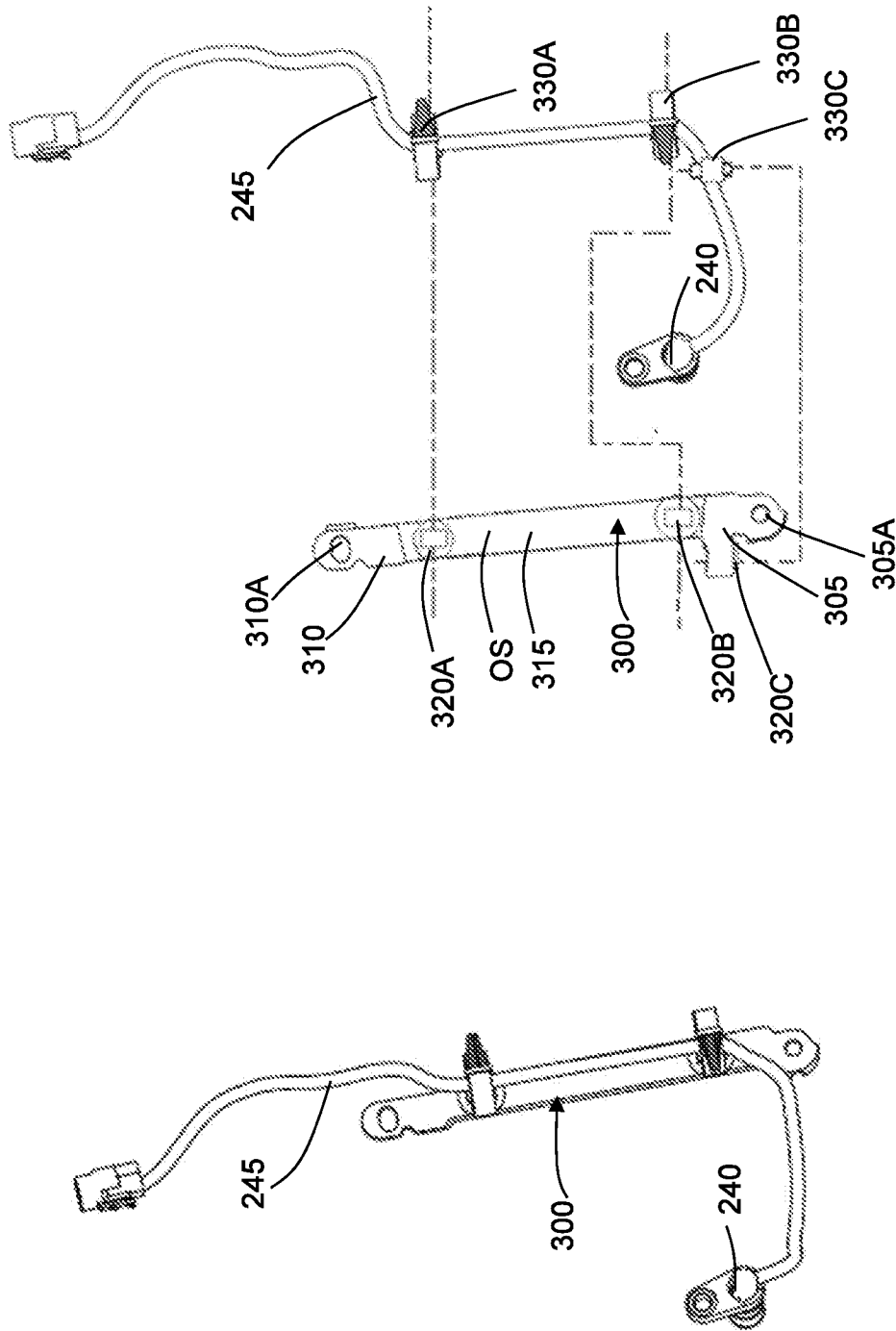
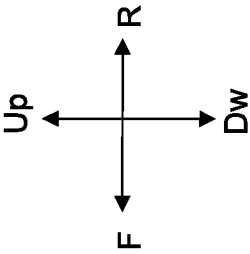


Fig. 1 (g)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2017/055486

A. CLASSIFICATION OF SUBJECT MATTER
F02F7/00 Version=2018.01

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)

F02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Patseer, IPO Internal Database

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP2005106036A, SUZUKI MOTOR CORP, 21 April 2005 (21/04/2005) claims-(1-4)	1-15
A	JP5331491B2, HONDA MOTOR CO LTD, 30 October 2013 (30/10/2013) Whole document	1-15

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search

25-01-2018

Date of mailing of the international search report

25-01-2018

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