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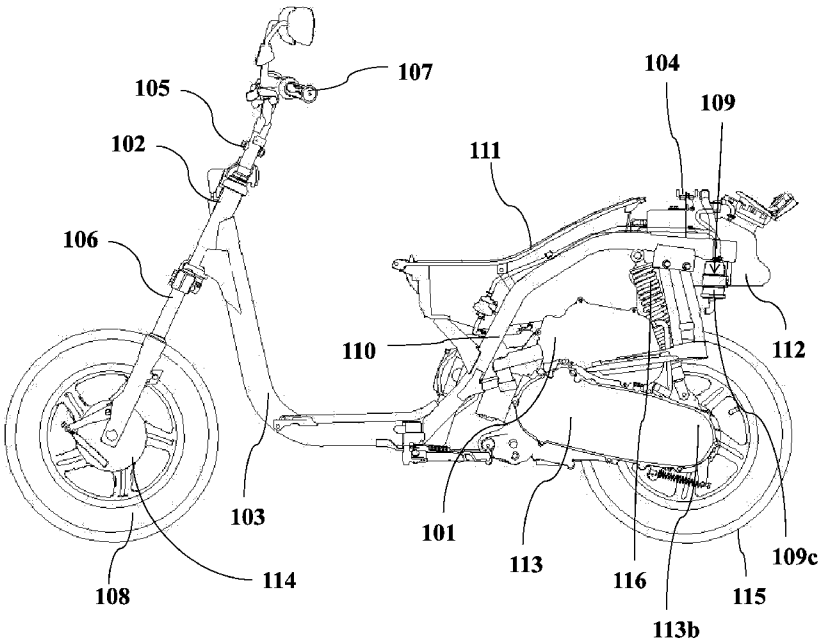

Fig. 1

(57) Abstract: The present invention relates to an evaporative emission control assembly for a two-wheeled vehicle. The evaporative emission control assembly (109) includes a container (109c) disposed at a close proximity to a fuel tank assembly (112) disposed at the rear end of the vehicle (100). The evaporative emission control assembly (109) is disposed at a proximity to the fuel tank assembly (112), rearwardly to at least one rear suspension (116) and above disposed above a rear portion (113b) of an engine assembly (113). The location of the container (109c) facilitates improved adsorption of the fuel vapour in a fuel hose (209) of the fuel tank assembly (112).

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AN EVAPORATIVE EMISSION CONTROL ASSEMBLY

TECHNICAL FIELD

[0001] The present invention relates generally to a two-wheeled vehicle. More particularly, the present invention relates to an evaporative emission control assembly for the two-wheeled vehicle.

BACKGROUND

[0002] Generally, in a two-wheeled vehicle, an air intake apparatus supplies filtered air and fuel mixture to an internal combustion engine for operation. The fuel, which is stored in a fuel tank assembly and fuel supply lines of the two-wheeled vehicle slowly, evaporates over time, releasing volatile fuel vapour into the air, which escapes into the atmosphere. Hence, an evaporative emission control system is used to prevent fuel vapours present in the fuel tank assembly and the fuel supply lines from escaping into the air. Additionally, these fuel vapours are used for combustion in the internal combustion engine. These systems are designed to store and utilize fuel vapours before they can escape into the atmosphere. The main unit of the evaporative emission control system is an evaporative fuel storage container such as a canister unit, which is used to store the fuel vapours by adsorbing it. The stored fuel vapours are then supplied to the internal combustion engine during the engine operation.

BRIEF DESCRIPTION OF THE DRAWINGS

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

[0004] Fig. 1 illustrates a left side view of a two-wheeled vehicle employing an embodiment of the present invention.

[0005] Fig. 2 illustrates the two-wheeled vehicle in accordance with second embodiment of the present invention.

[0006] Fig. 3 illustrates a top perspective view of a vehicle frame assembly employing the evaporative emission control container at the rear end of the vehicle.

[0007] Fig. 4 illustrates a side view of a vehicle frame assembly and an evaporative emission control container attached to the frame.

[0008] Fig. 5 illustrates a perspective side view of a frame assembly employing the present invention.

[0009] Fig. 6 illustrates a perspective view of arrangement of the evaporative emission control container with respect to the fuel tank assembly.

[00010] Fig. 7 illustrates an exploded view of a fuel tank assembly.

DETAILED DESCRIPTION

[00011] Various features and embodiments of the present invention here will be discernible from the following further description thereof, set out hereunder. In the ensuing exemplary embodiments, the vehicle is a two-wheeled vehicle. However, it is contemplated that the disclosure in the present invention may be applied to any vehicle capable of accommodating the present subject matter without defeating the spirit of the present invention. The detailed explanation of the constitution of parts other than the present invention, which constitutes an essential part, has been omitted at suitable places.

[00012] Fuel evaporation in a fuel tank assembly and fuel supply lines is a normal phenomenon in the two-wheeled vehicle. The packaging and layout design of an evaporative emission control system is a very important aspect in the design of the two-wheeled vehicle, because it plays a crucial role in reducing evaporative emission of fuel for better fuel utilization and increased thermal efficiency. The location of the evaporative fuel storage container is a very important factor in the working, design and functioning of the evaporative emission control assembly. Various customer needs makes the vehicle layout complex with lot of systems. Hence, it becomes very challenging to package the various components of the evaporative emission control assembly in the two-wheeled vehicle

[00013] The fuel evaporation in the fuel tank assembly and the fuel supply lines occur due to increased temperatures resulting from various factors such as, outside temperatures which can cause heating of the fuel tank assembly and fuel supply systems, the hot engine and exhaust system which can cause heating of the fuel tank assembly and fuel supply systems, heat from an internal combustion engine for a period of time even after engine is turned off, and exposed tank during refueling which forces the fuel vapors out by the incoming liquid fuel.

[00014] A major problem in the two-wheeled vehicle is space constraint, which force the fuel tank assembly and supply lines to be arranged to be close to areas of the vehicle having high temperatures. Such arrangements include the utility box to be used by the rider to place helmet and any other luggage to meet the requirements of the rider. The conventional two wheeled vehicle having utility box below the seat assembly is subjected to space restrictions due to the fuel tank assembly situated adjacently in close proximity to areas around the engine assembly causing increased temperatures in that area. Additionally, in another two-wheeled vehicle the fuel tank assembly can be located towards the front of the vehicle and hence is exposed directly to the atmosphere heating the fuel inside. Typically for optimum functioning and durability of the evaporative emission control assembly, it is desirable to have shorter lengths of the hoses connecting to and from the container. Longer hoses lead to condensation of the vapors and loss of effective adsorption by the canister. For stable functioning, it is desirable to have minimum physical vibration and vibrations and oscillations from the rear suspension transferred on to the canister as well as its corresponding mountings. Further, the volume and size of the canister is governed by a size of the fuel tank assembly as well as other factors like thermal loads in vicinity, permissible emission levels, space available for canister in the vehicle. Therefore, packaging and mounting of the canister becomes a critical requirement in a vehicle and more particularly in a two-wheeled vehicle.

[00015] In a know prior art, a canister arrangement structure for saddle-ride type vehicle, includes a canister disposed at a rear portion of a vehicle body. The canister arrangement structure here includes a cushion unit having one end coupled to a seat rail and the other end coupled to a swing arm and a canister for recovering the evaporated fuel is disposed at a rear end of the cushion unit with a length thereof along the longitudinal direction of the cushion unit. However, this prior art has a drawback of not being able to adequately protect the canister from external impacts and environmental factors. The canister here is not covered by any of the cover members in the motorcycle. Therefore, the canister is directly exposed to the external impacts and in addition to harsh environmental factors. Further, since the canister here is placed adjacently to the seat rail, an exclusive space for the canister has to be provided in the vehicle. Further, the canister is mounted away from the engine assembly and the fuel tank assembly, which will make the hoses connected between the canister and the fuel tank assembly and the engine assembly to be undesirably lengthier. Further, the canister is located very close to the seat

assembly, this location closer to the seat assembly is not easier to service whenever any of the hoses routed there within have to be replaced or requires servicing. Furthermore, the canister here is mounted rearwardly and along the length of the cushion unit. The oscillations occurring in the cushion unit due to undulations on the road are directly transferred to the complete length of the canister body. This may lead to instability in the mounting as well as functioning of the canister. Furthermore, the purge pipe and the charge pipe are routed so as to extend upward from the canister and pass between the coupling portion of the cushion unit and the cowl mounting portion. However, the end mounting portions of the purge pipe and the charge pipe at the canister end are exposed to the environment. Furthermore, the purge pipe and the charge pipe in this particular arrangement take a curved path above the coupling portion of the cushion unit, which is undesirable, because the fuel vapors might not be able to easily traverse from the canister to the carburetor.

[00016] Furthermore, the canister is disposed directly closer to the rear wheel, these accounts to direct splashing of the mud, dirt and other particles on to the canister. This calls for frequent replacing or servicing of the canister.

[00017] Therefore, there is a need to provide a canister in the vehicle in a location such that the canister is adequately placed in a safe location and being able to be protected from any external impacts and environmental factors, to save space in the vehicle as well as minimize thermal loads and hose lengths, which is, not accounting to increased space in the vehicle. Further, also be able to provide a easier path for the hoses connecting between the fuel tank assembly and the canister and the canister to the carburetor/ electronic fuel injection (EFI), to achieve easier and quicker traversing of the fuel vapors accounting to easier adsorption by the canister.

[00018] Generally, the evaporative emission control assembly consists of an evaporative fuel storage container such as a small canister unit filled with charcoal to adsorb the fuel vapours on its surface. Other components include valves, hoses, and ports. When fuel evaporates inside the fuel tank assembly, the fuel vapours are transferred to the canister unit. The fuel vapours are adsorbed by the charcoal and stored there until they can safely be transferred back to the engine assembly to be burned with the normal air-fuel mixture.

[00019] One end of the evaporative fuel storage container is connected to the engine assembly intake while the other end is exposed to atmospheric air. The container also includes a drain port

and an intake port to communicate between the fuel tank assembly and the container. When engine assembly is in operation, it creates suction in its intake, which results in pressure difference on either side of the evaporative fuel storage container creating a vacuum that draws fresh air which mixes with the fuel vapours adsorbed on the surface of the charcoal present and flows inside into the engine assembly. These systems can be controlled mechanically or can also be automated.

[00020] The location of the evaporative fuel storage container is a very important aspect of the design of the evaporative emission control assembly for the two-wheeled vehicle. The two-wheeled vehicle is always subjected to space constraints and lack of storage space to accommodate additional features and systems inside. Additionally, the canister unit durability maybe reduced if it is kept exposed to outside environmental factors. Hence, one of the most crucial design factors in consideration of the design of the two-wheeled vehicle is the location of the evaporative fuel storage container of the evaporative emission control assembly.

[00021] Conventionally, in the two-wheeled vehicle, the evaporative fuel storage container is disposed at various locations under the seat of the two-wheeled vehicle. Such locations include disposed in proximity to the fuel tank assembly, disposed in close proximity to the utility box, disposed in close proximity to a main tube of the vehicle, and disposed in close proximity to the side-tubes of the vehicle. However, such locations primarily have the drawback of occupying space in the two-wheeled vehicle thus causing space constraints. In addition, the evaporative fuel storage container maybe exposed to harsh outside environmental factors, which may reduce the durability due to mud, dust and water entry. Further, disposing the container under a seat assembly, in proximity to a utility box leads to compromise in a utility storage space available for the user. The container present in close proximity to the fuel tank assembly can lead to tradeoff in volume of fuel tank assembly in a straddle-type vehicle and in addition, to difficulty in accessibility in scooter type vehicle. In motorcycles, the container closer to the engine assembly is more pertinent to exposure to engine thermal loads as well as external environmental factors like mud, dust and the like. In scooters. Furthermore, in motorcycles mounting a container on a main tube to have the container closer to the fuel tank leads to additional lengths of the hoses, which is detrimental to the performance of the evaporative emission control assembly.

[00022] Hence, it is an object of the present invention to have the evaporative fuel storage container located in proximity to the pair of rear frames and enclosed by the surrounding vehicular parts. Such a location would optimize packaging without affecting storage space inside the two-wheeled vehicle, and protect it from harsh environmental factors.

[00023] With the proposed design, the following advantages can be obtained such as optimizing packaging for the evaporative fuel storage container and provide a good storage space for it, protect the evaporative fuel storage container from harsh environmental factors (such as, dust, mud and water entry), reducing servicing time, providing easy access to the evaporative fuel storage container and all the hoses and valves, optimize hose length, minimize transfer of vibrations and oscillation from the rear suspension to the container of the evaporative emission control assembly and its mountings, minimized thermal loads, prevent loss of utility space in the vehicle and also account to increased volume in the fuel tank assembly and can operate by using purge valve or without using purge valve, and can operate by using purge valve or without using purge valve. Such an assembly is also applicable to all applications, which use the engine assembly including a straddle type motorcycle, the scooter type motorcycle and a three-wheeled vehicle.

[00024] According to an embodiment of the present invention, the evaporative emission control container is located at the rear most part of the vehicle. The container in specific is mounted to any one rear frame of the pair of rear frames of the vehicle. The rear most portion of the pair of rear frames of the vehicle frame assembly is the most rigid part and is surrounded by rigidly attached member. The rigidly attached members receive minimal vibrations from the vehicle and therefore, the rearmost part of the pair of rear frames are also not subject to any vibrations or oscillations. Therefore, the container is also not subject to any excess abnormal vibrations or oscillations. The evaporative emission control container so packaged substantially on the outer side of the rear frame portions such all four hoses connected to the canister are easy to assemble and disassemble. The evaporative emission control container (hereinafter referred to as container) and the roll over valve are disposed closer to a fuel tank assembly to maintain minimal length of the hoses connecting to the roll over valve to the fuel tank assembly and the roll over valve to the container. Further, the arrangement of the container according to an embodiment prevents the condensation of fuel in the hoses.

[00025] According to an embodiment of the present invention, the container is disposed underneath at least one of the rear frames of the pair of rear frames including a RH rear frame and a LH rear frame and substantially in the rear portion of the vehicle. The pair of rear frames from top side protects the container, in such an arrangement, rear surface of the container is protected by a tail lamp, a rear fender protects the container from a bottom side and a shock absorber protects the container from a front side. The container is disposed rearwardly to the shock absorber but at a distance from the shock absorber and the engine assembly mountings, therefore, the oscillations occurring due to the engine assembly excitations or movement of the shock absorber are transferred minimally to the container being away from the source of the vibrations. Therefore, a stable mounting and functioning of the evaporative emission control assembly is achieved.

[00026] Further, according to an embodiment of the present invention, the container is located substantially close to the fuel tank assembly disposed at the rear end of the vehicle. The container is mounted to a rear end of the at least one rear frame of the pair of rear frames. The location of the container facilitates improved adsorption of the fuel vapour.

[00027] Furthermore, the roll over valve is disposed on a top surface of the fuel tank assembly disposed behind a seat lock. Furthermore, the container is packaged such that easy servicing is carried out without dismantling the utility box and fuel tank assembly.

[00028] According to an embodiment, the location of the container protects the container from any external impacts occurring during accidents and prevents entry of any foreign particles into the container.

[00029] Further, according to another embodiment, the container is disposed in a substantial vertical plane with respect to a vehicle longitudinal plane; the container is disposed above a rear wheel disposed at a rear end of the engine assembly. The container is mounted to a rear end of the at least one frame of the pair of rear frames. The container as mentioned in the present invention is a canister. The oscillations received by the rear suspension assembly are not easily transmitted to the container of the evaporative emission control assembly, since the container in the present invention is enclosed by number of other vehicular parts and is placed away from the engine assembly and the rear suspension assembly. Therefore, a more stable mounting and stable and reliable working of the evaporative emission control assembly is achieved.

[00030] According to an embodiment of the present invention, the container is disposed in the vehicle such that, an optimal distance between the fuel tank assembly and container, and container and carburettor is obtained. The optimal hose length ratio from the fuel tank assembly to the container and from the container to the carburettor is approximately in the range of 1.03. The hose connecting from the fuel tank assembly and the container is shorter and enables easier and quicker adsorption of the fuel vapours by the container. Furthermore, the container is located above the carburettor; this helps easier transfer of the fuel vapours from the container to the carburettor.

[00031] The present invention along with all the accompanying embodiments and their other advantages would be described in detail in conjunction with the figures in the following paragraphs.

[00032] Fig. 1 illustrates the two-wheeled vehicle in accordance with one embodiment of the present invention. The vehicle **100** comprises of a vehicle frame assembly **200**, which conventionally provides a generally open central area to permit "step-through" mounting by a rider. Typically, the vehicle frame assembly **200** comprises of a head tube **102**, a main tube **103**, a pair of rear frames **104** (only one shown), and a means to connect the head tube **102** and the pair of rear frames **104**. One end of the main tube **103** extends downwardly and rearwardly and connected with the pair of rear frames **104** while at the other end there is the head tube **102**, which is configured to rotatably support a steering shaft **105**, and further connected to the front suspension assembly **106** at the lower end. A handlebar support member (not shown) is connected to an upper end of the steering shaft **105** and supports a handlebar assembly **107**. The front suspension assembly **106** (only one is shown) is attached to a bracket (not shown) on the lower part of the steering shaft **105** on which is supported the front wheel **108**. A front fender (not shown) mounted to the lower portion of the steering shaft **105** covers an upper portion of the front wheel **108**. The pair of rear frames **104** includes a down frame section **110** inclined downwards, connected to the main tube **103** at one end, and extending rearward in a substantially horizontal direction at the other end. A plurality of cross pipes (not shown) is secured in between the pair of side-tubes **104** to support vehicular attachments including a utility box **111**, a seat assembly (not shown) and a fuel tank assembly **112**.

[00033] The seat assembly being a load bearing member is supported on the pair of rear frames **104**. Generally, the utility box **111** is supported between the front portions of the left and right end of the pair of rear frames **104** to be disposed below the seat assembly (not shown). A fuel tank assembly **112** is disposed on the vehicle frame assembly **200** between the rear portions of the left and right end of the rear frames **104** and above an air filter assembly **101** and an engine assembly **113**. There is front brake **114** and rear brake (not shown) arranged on the front wheel **108** and rear wheel **115** respectively.

[00034] The rear wheel **115** is supported towards the rear side of the vehicle frame assembly **200** by the engine assembly **113**, which is horizontally coupled swing ably to the rear of the vehicle frame assembly **200** of the vehicle **100** through at least one rear suspension **116**. Conventionally, the engine assembly comprises a cylinder head assembly, a cylinder block and a crankcase. The air filter assembly **101** is located in close proximity and above the cylinder head assembly of the engine assembly **113**. An evaporative emission control assembly **109** is disposed at a proximity to the fuel tank assembly **112**.

[00035] According to an embodiment of the present invention, the evaporative emission control assembly **109** is disposed behind the at least one rear suspension **116** and below the pair of rear frames **104** including a RH rear frame **104b** and a LH rear frame **104a** (not shown). According to an embodiment, the evaporative emission control assembly **109** is disposed on the left hand side of the vehicle **100**, behind the at least one rear suspension **116** and below the LH rear frame **104a**. The evaporative emission control assembly **109** is protected from the front side by the at least one rear suspension **116** disposed on the left hand side of the vehicle **100**. The fuel tank assembly **112** protects one side of the container **109c** and the other side of the container **109c** is completely protected by the side panel (not shown) that covers the rear side of the vehicle **100**. The container **109c** is disposed above a rear end **113b** of the engine assembly **113** and above the rear wheel **115**.

[00036] **Fig. 2** illustrates the two-wheeled vehicle in accordance with second embodiment of the present invention. The evaporative emission control assembly **109** including the container **109c** is disposed in an intersecting planar region **SWO** enclosed in between the two intersecting planes including a rear suspension plane **RW** passing through the length of the rear suspension and a rear wheel **115** axle and a prop stand plane **PS** passing through a mounting portion of a

stand element **213** and a top mounting portion of the at least one rear suspension **116** of the two-wheeled vehicle **100**.

[00037] Fig. 3 illustrates a top perspective view of a vehicle frame assembly employing the evaporative emission control assembly at the rear end of the vehicle. The evaporative emission control assembly **109** including a canister unit is disposed to lie at a proximity to the fuel tank assembly **112**. Since, the fuel tank assembly **112** in the vehicle is situated at the rear end of the vehicle **100**; the evaporative emission control assembly **109** is also disposed substantially at the rear end. The proposed location of the container **109c** of the evaporative emission control assembly **109** facilitates easy collection of fuel vapors from the fuel tank assembly **112** by the container **109c**. Therefore, a hose connecting the fuel tank assembly **112** to the container **109a** is shortened. Furthermore, another hose from the container **109a** is connected to a carburetor **202**. An optimal hose length ratio between the fuel tank assembly **112** and the container **109c** and between the container **109c** and the carburetor is approximately in the range of 1-2, however the preferred ratio is 1.03.

[00038] Fig. 4 illustrates a side view of a vehicle frame assembly and an evaporative emission control assembly attached to the vehicle frame assembly. According to an embodiment of the present invention, the evaporative emission control assembly **109** is disposed along a vertical plane **ab** present at an angle to the vehicle longitudinal plane **LP**. For example, in an embodiment, the container plane **ab** is perpendicular to the vehicle longitudinal plane **LP**. The container is mounted to the rear most portion of the pair of rear frames **104**, the rearmost portion of the pair of rear frames **104** is almost horizontal and having a container **109c** mounted perpendicularly to the rearmost portion of the pair of rear frames **104** provides an advantage of having a more sturdy mounting, this sturdy mounting ensures stable working of the evaporative emission control assembly **109**. The mounting of the container **109c** perpendicularly to the pair of rear frames **104** is more desirable rather than mounting at an angle due to the advantage of easier mounting.

[00039] A hose **201** connecting to the container **109c** and a purge valve **206** is routed along the LH rear frame **104a**. The hose **201** lies along the LH rear frame **104a** and is guided by the LH rear frame **104a**. According to the proposed invention, the serviceability of the evaporative emission control assembly **109** is comparatively easy. The container **109c** is easily accessible

and can be removed by accessing the mountings used to attach the evaporative emission control assembly **109** at the desired location. Further, there is no need to remove or dismantle any other vehicular parts to access the container **109c** except for removal of side panels.

[00040] Fig. 5 illustrates a perspective side view of a frame assembly employing the present invention. According to an embodiment of the present invention, the purge valve **206** is disposed at a proximity to any one rear frame of the pair of rear frames **104** including the RH rear frame **104b** and the LH rear frame **104a**, and above the engine assembly **113** (not shown). The particular arrangement of the purge valve **206** as disclosed in the present invention makes the serviceability of the purge valve **206** comparatively easier. Further, the hose **201** is packaged in such a way that the RH rear frame **104b** and the LH rear frame **104a** support the hose **201**. Thereby, preventing free hanging of the hose **201** and preventing interfering of the hose **201** with surrounding vehicular parts. Therefore, a more secure packaging of the container **109c** is provided according to an embodiment of the present invention.

[00041] Fig. 6 illustrates a perspective view of arrangement of the evaporative emission control container with respect to the fuel tank assembly. The roll over valve **207** is disposed on a fuel tank top surface **112tp** of the fuel tank assembly **112**. The fuel vapours are easily transmitted from a higher gradient of the top surface of a lower gradient wherein the container **109c** is situated. Therefore, a more efficient functioning of the evaporative emission control assembly is achieved through the proposed invention.

[00042] Fig. 7 illustrates an exploded view of a fuel tank assembly. The evaporative emission control assembly **109** is mounted to the at least one frame (**104a, 104b**- now shown) of the pair of rear frames **104** (not shown) through a connecting member **109b**. The container **109c** is held by a sleeve member **109a** capable of enabling mounting of the container **109c** to the connecting member **109b**. A first hose **208** communicates between the fuel tank assembly **112** and the container **109c** through a roll over valve **207**. In case of the roll over valve integrated inside the fuel tank assembly **112**, the hose **208** will communicate directly with the fuel tank assembly **112**. A fuel hose **209** communicates between the fuel tank assembly **112** and the engine assembly (not shown). Further, the hose **201** is connected from the container **109c** to the purge valve **206** held by a boot member **206a** and mounted to a bracket **206b**.

[00043] The evaporative emission control assembly **109** according to the proposed invention is mounted in a safe and secure location surrounded by various vehicular parts. The location also facilitates optimization of various hose lengths connecting to the various ports of the container and other vehicular parts.

[00044] According to an embodiment of the present invention, evaporative emission control assembly **109** includes a container **109c** comprising a canister unit capable of adsorbing the fuel vapors.

[00045] Although the subject matter has been described in considerable detail with reference to certain embodiments thereof, other embodiments are possible. It is to be understood that the aspects of the embodiments are not necessarily limited to the features described herein.

We claim:

1. A vehicle **(100)** comprising:

   a vehicle frame assembly **(200)** including a pair of rear frames **(104)** extending rearwardly upward from a main tube **(103)**, said main tube **(103)** extending rearwardly downward from a head tube **(102)** disposed in a front portion of said vehicle **(100)**; and

   an evaporative emission control assembly **(109)** including a container **(109a)**, a purge valve **(206)** and a roll over valve **(207)** is coupled to a fuel tank assembly **(112)** disposed in between said pair of rear frames **(104)**,

      wherein,

         said evaporative emission control assembly **(109)** is disposed in an intersecting planar region **(SWO)** along a vertical plane **(ab)** at an angle to a vehicle longitudinal plane **(LP)** and said evaporative emission control assembly **(109)** is mounted to a rear end of said at least one rear frame **(104a, 104b)** of said pair of rear frames **(104)**.

2. The vehicle as claimed in claim 1, wherein said vehicle **(100)** includes at least one rear suspension **(116)**, one end of said at least one rear suspension **(116)** is mounted to at least one rear frame **(104a, 104b)** of said pair of rear frames **(104)** and other end of said at least one rear suspension **(116)** is coupled to a rear wheel **(115)**.
3. The vehicle **(100)** as claimed in claim 1, wherein said evaporative emission control assembly **(109)** is disposed at a proximity to said fuel tank assembly **(112)**, rearwardly to said at least one rear suspension **(116)**, above a rear end **(113b)** of an engine assembly **(113)** and a container **(109c)** disposed in said vertical plane **(ab)** perpendicular to said vehicle longitudinal plane **(LP)**.
4. The vehicle **(100)** as claimed in claim 1, wherein said roll over valve **(207)** is disposed on a fuel tank top surface **(112tp)** of said fuel tank assembly **(112)** and said purge valve **(206)** is disposed above said at least one rear frame **(104a, 104b)** of said pair of rear frames **(104)**.
5. The vehicle **(100)** as claimed in claim 1, wherein said evaporative emission control assembly **(109)** and the purge valve **(206)** are connected through a hose **(201)** routed

along the any one of the LH rear frame **(104a)** and the RH rear frame **(104b)** of the pair of rear frames **(104)**.

6. The vehicle **(100)** as claimed in claim 1, wherein said evaporative emission control assembly **(109)** includes a first hose **(208)** capable of communicating between the fuel tank assembly **(112)** and the container **(109c)** through the roll over valve **(207)**.
7. The vehicle **(100)** as claimed in claim 1, wherein said container **(109c)** is held by a sleeve member **(109a)** capable of enabling mounting of said container **(109c)** to the connecting member **(109b)**, said connecting member **(109b)** is mounted to the at least one rear frame **(104a, 104b)** of the pair of rear frames **(104)**.
8. The vehicle **(100)** as claimed in claim 1, wherein said purge valve **(206)** is held by a boot member **(206a)** mounted to a bracket **(206b)**.
9. The vehicle **(100)** as claimed in claim 6, wherein said hose **(201)** lies above any one of the LH rear frame **(104a)** and the RH rear frame **(104b)** of the pair of rear frames **(104)**.
10. The vehicle **(100)** as claimed in claim 5 or claim 6, wherein said first hose **(208)** and said hose **(201)** have lengths in the ratio of approximately in the range of 1-2.

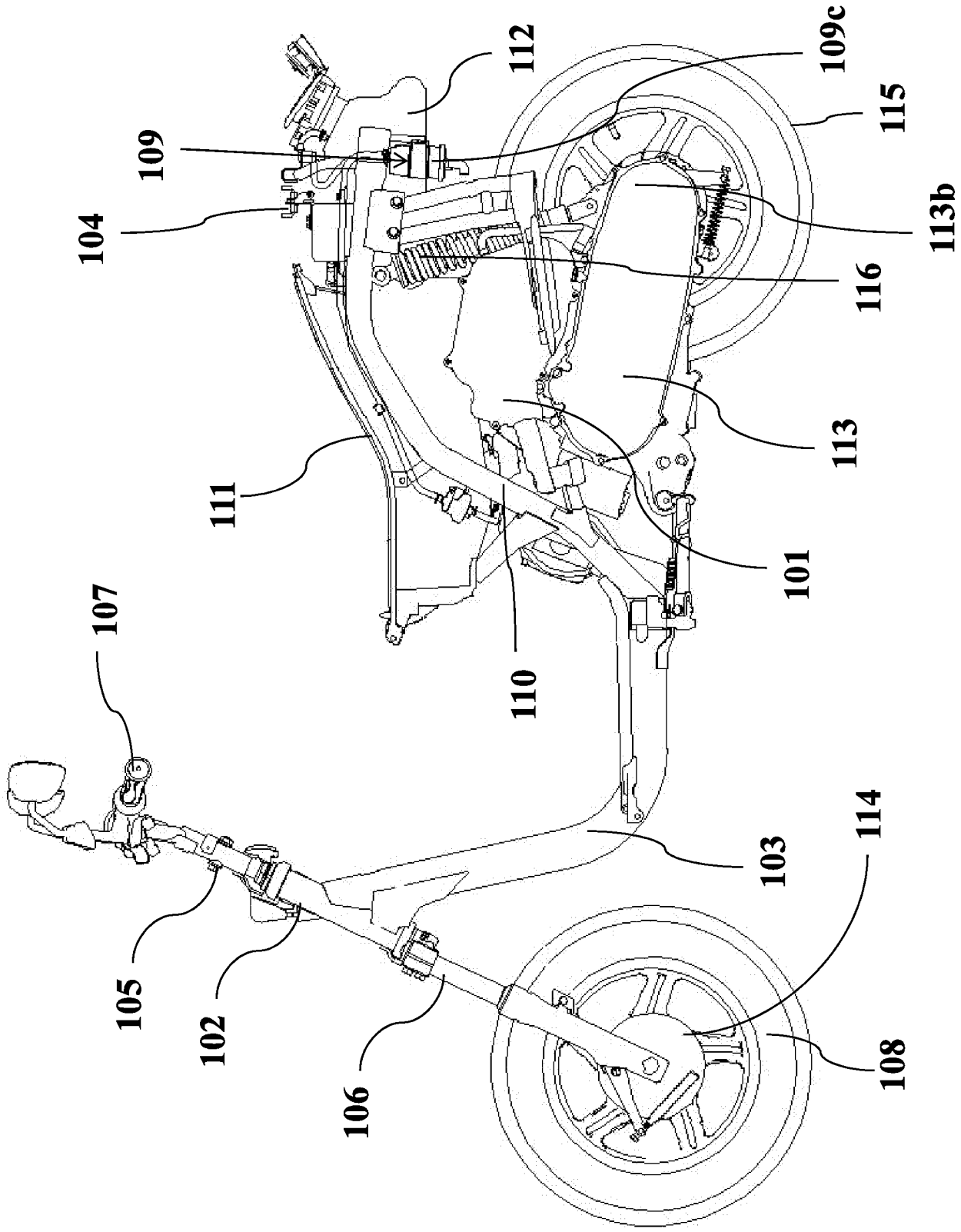
112
109c
109
115
104
113b
116
113
111
101
107
110
103
114
105
102
106
108

Fig. 1

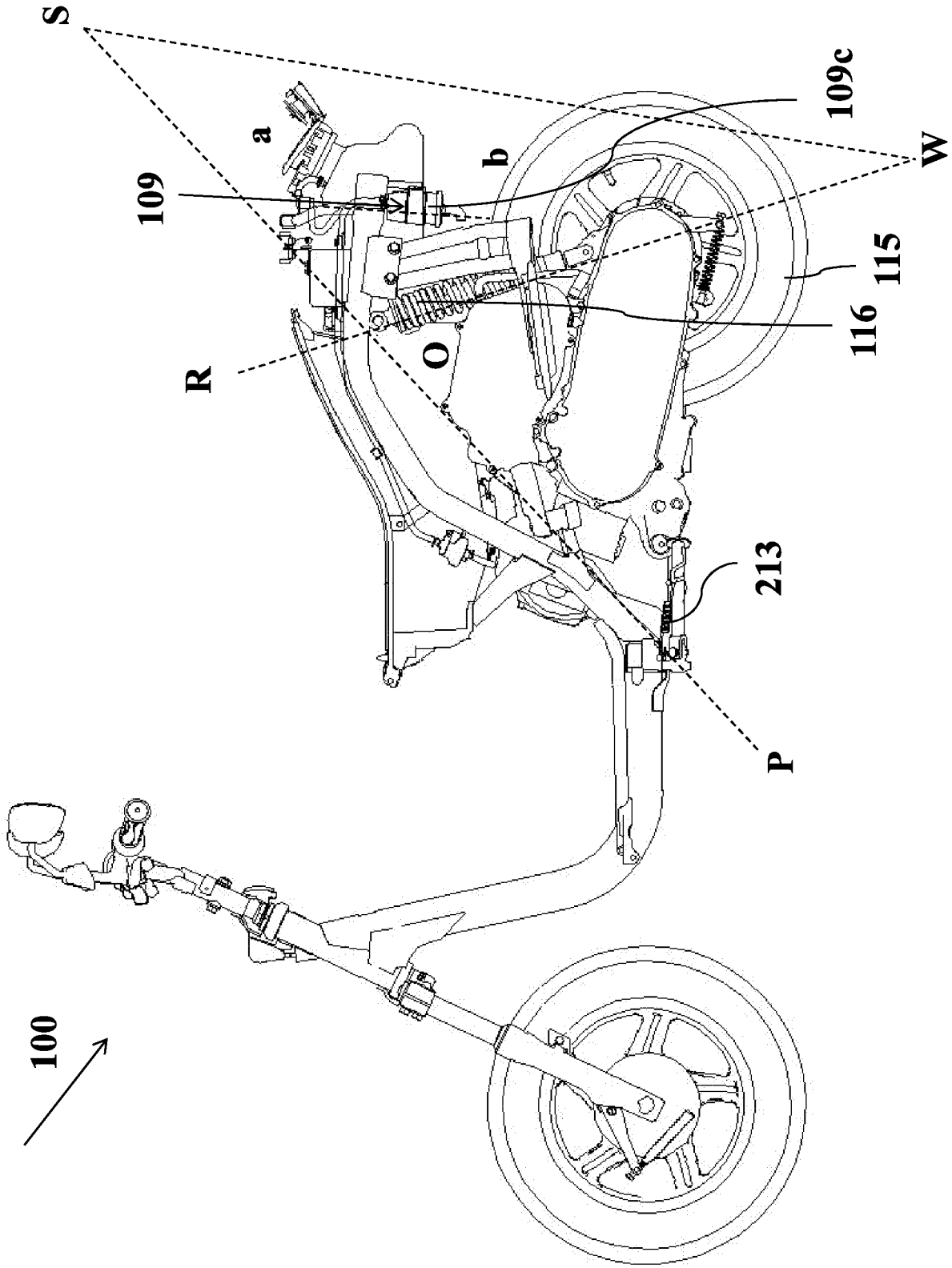

Fig. 2

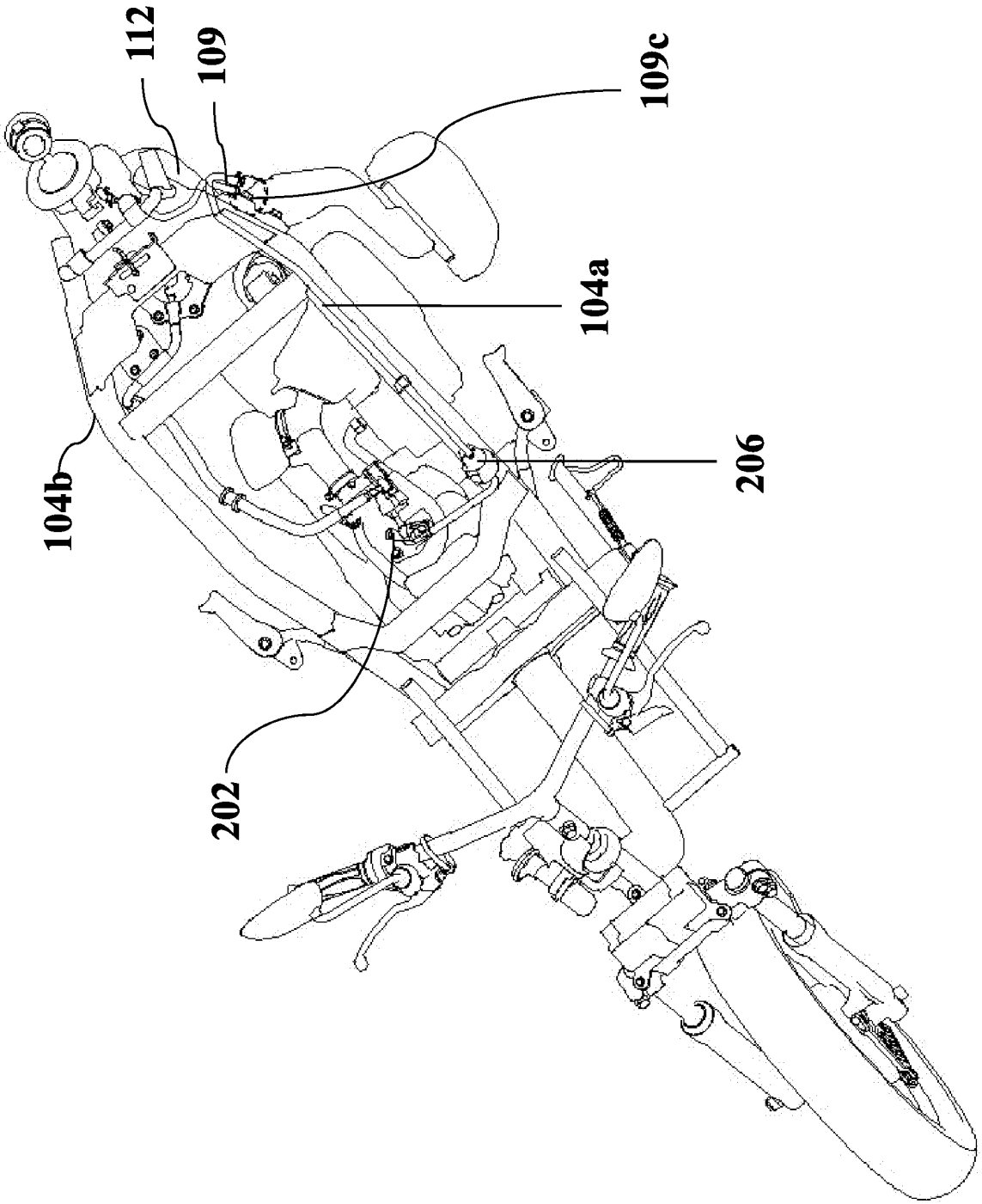

Fig. 3

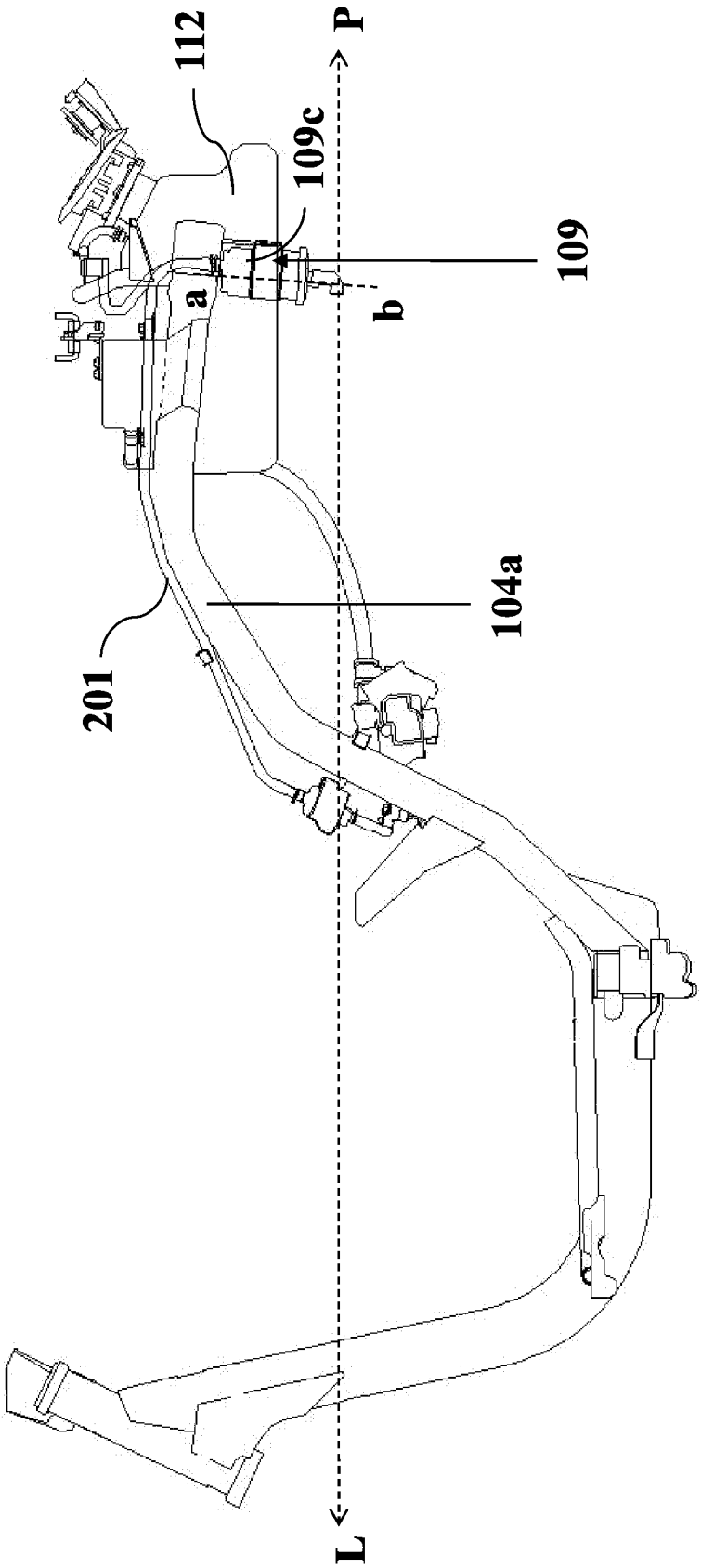

Fig. 4

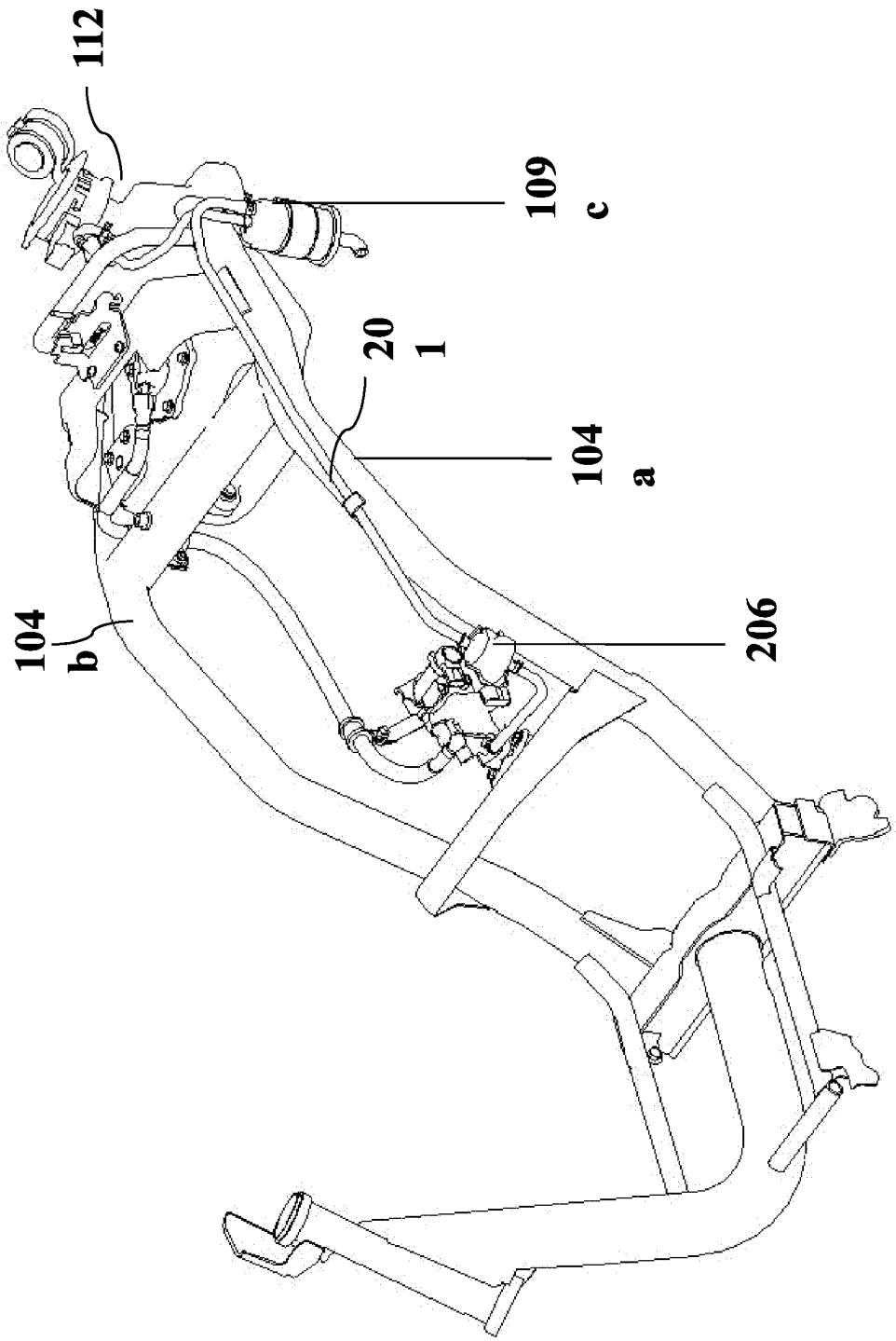

Fig. 5

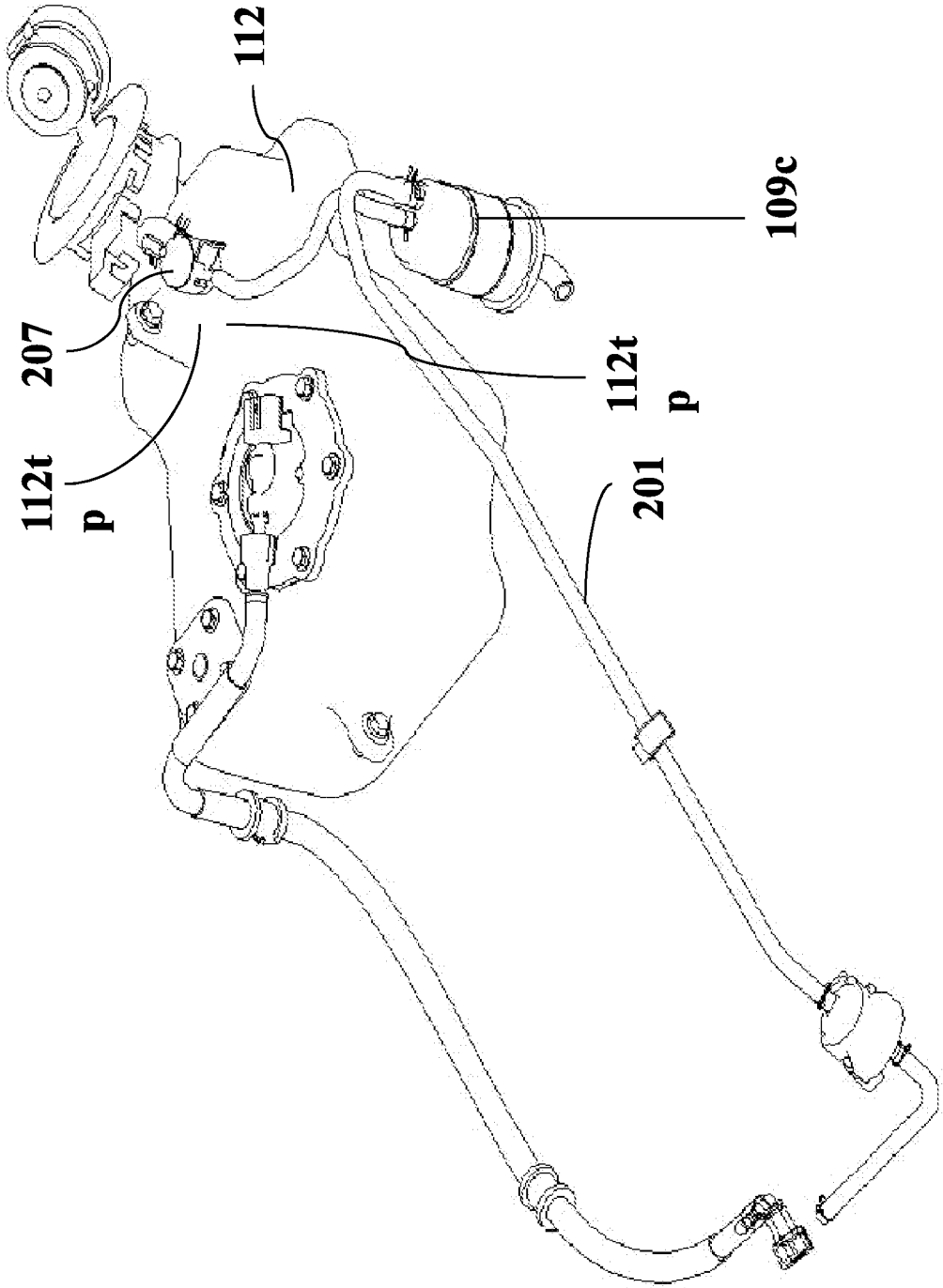

Fig. 6

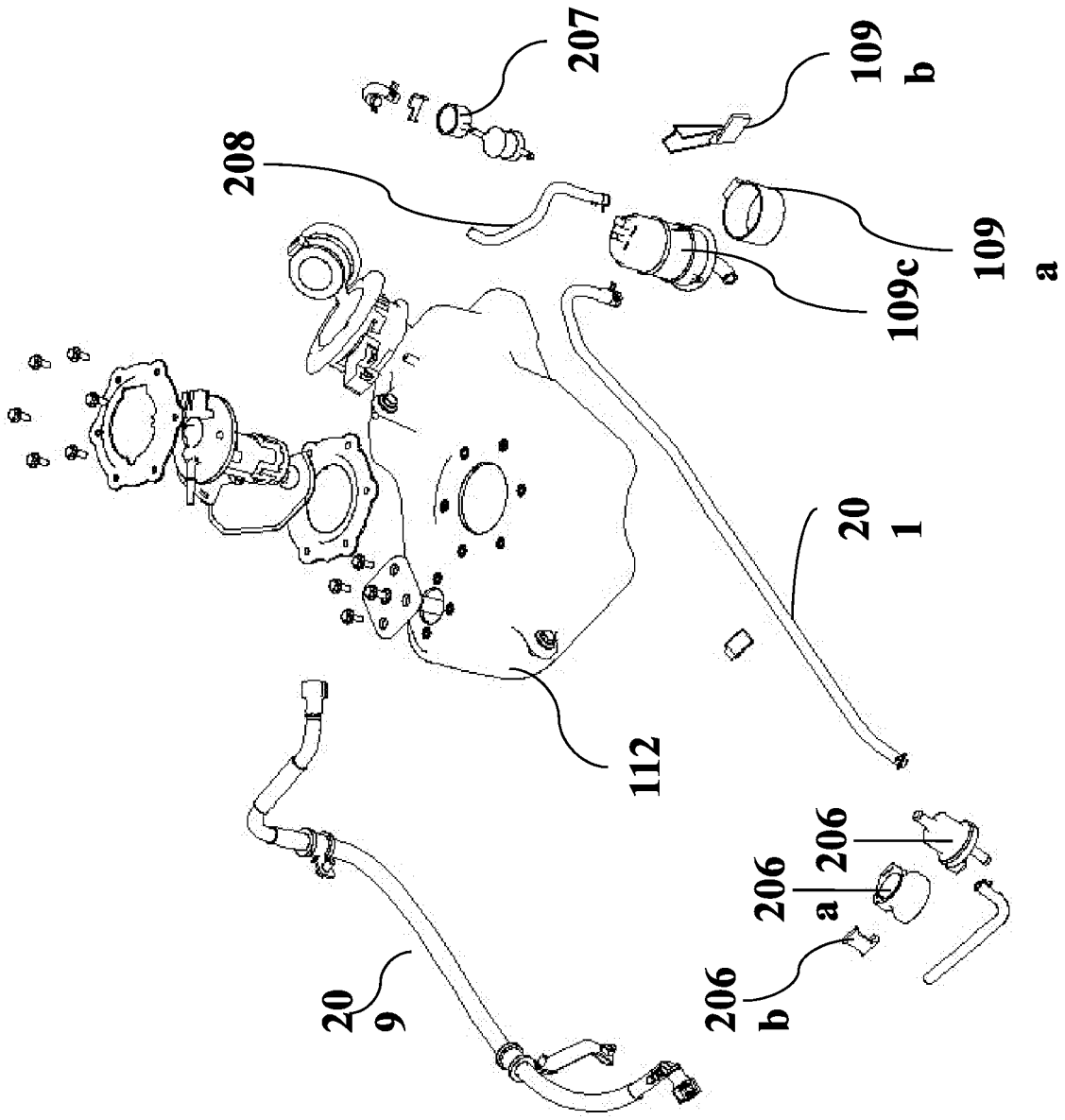

Fig. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2017/056086

A. CLASSIFICATION OF SUBJECT MATTER
F02M25/08 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)

F02M

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.
X	IN 3380/CHE/2012 A (HONDA MOTOR CO LTD) 24 January 2014 (24.01.2014) Para [0026], [0048]-[0050], [0052] Figure 6-8	1-2, 5, 7-8
Y	Para [0026], [0048]-[0050], [0052] Figure 6-8	3-4, 6, 9-10
Y	IN 3899/DEL/2012 A (SUZUKI MOTOR CORPORATION) 01 August 2014 (01.08.2014) Page 11, 12, Figure 2	3-4, 6, 9-10
X	IN 4184/CHE/2013 A (HONDA MOTOR CO LTD) 06 February 2015 (06.02.2015) Para [0034]-[0038], Figure 1, 4	1-2, 5, 7-8
Y	Para [0034]-[0038], Figure 1, 4	3-4, 6, 9-10

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
01-02-2018	01-02-2018
Name and mailing address of the ISA/ Indian Patent Office Plot No.32, Sector 14,Dwarka,New Delhi-110075 Facsimile No.	Authorized officer Seetha Raman A Telephone No. +91-1125300200

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IB2017/056086

Citation	Pub.Date	Family	Pub.Date
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IN 3899/DEL/2012 A	01-08-2014	CN 103171694 A	26-06-2013
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IN 4184/CHE/2013 A	06-02-2015	JP 2014061852 A	10-04-2014