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(54) **STRADDLED VEHICLE**

GRÄTSCHSITZFAHRZEUG

VÉHICULE À ENFOURCHER

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EP 3 974 642 B1

Description

BACKGROUND

Field of the Invention

[0001] The present invention relates to a straddled vehicle.

Background Information

[0002] A straddled vehicle disclosed in Japan Laid-open Patent Application Publication No. 2012-1119 includes a canister and a purge valve. The canister is installed on the rear side of a cylinder of an engine. The purge valve is disposed in alignment with the canister in a vehicle width direction. The purge valve is connected, through a hose connected thereto, to both the canister and a throttle body of the engine. Other straddled vehicles are known from EP3450291A1, DE102017219422A1 and EP2860089A1.

SUMMARY

[0003] In such a well-known straddled vehicle, the purge valve is disposed in alignment with the canister in the vehicle width direction. This results in increase in length of the hose that connects the purge valve and the throttle body to each other, whereby an efficient layout is made difficult for the hose.

[0004] It is an object of the present invention to provide a straddled vehicle that enables an efficient layout for a hose connecting a purge valve and a throttle body to each other.

[0005] A straddled vehicle according to an aspect of the present invention includes a vehicle body frame, an engine, a fuel tank, a canister, a purge valve, and a hose. The vehicle body frame includes a head pipe. The engine includes a throttle body. The engine is supported by the vehicle body frame. The fuel tank is disposed behind the head pipe. The canister is disposed on a more rear side than the throttle body, while being disposed directly below the fuel tank. The purge valve is disposed directly above the canister, overlaps the throttle body in a vehicle back-and-forth direction in a vehicle side view, and is connected to the canister and the throttle body. The hose connects the throttle body and the purge valve to each other.

[0006] In the straddled vehicle according to the present aspect, the canister is disposed on a more rear side than the throttle body, whereas the purge valve is disposed directly above the canister, while overlapping the throttle body in the vehicle back-and-forth direction in the vehicle side view. Because of this, the purge valve is enabled to be disposed in a position adjacent to the throttle body, whereby it is possible to shorten the hose connecting the throttle body and the purge valve to each other. Accordingly, an efficient layout is enabled for the hose connecting the throttle body and the purge valve to each other. Besides, the canister is disposed directly below the fuel tank, whereby it is possible to shorten another hose connecting the canister and the fuel tank to each other.

[0007] The canister and the purge valve may be disposed inside the vehicle body frame. In this case, an impact can be prevented from directly acting on the canister, for instance, when the vehicle falls over.

[0008] The purge valve may overlap the vehicle body frame in the vehicle side view. In this case, an impact can be prevented from directly acting on the canister, for instance, when the vehicle falls over, and simultaneously, external aesthetics can be enhanced.

[0009] The canister may not overlap the throttle body in a vehicle plan view. In this case, an efficient layout is enabled for hoses disposed in the surroundings of the canister.

[0010] The straddled vehicle may further include a starter motor and a holder. The starter motor may be attached to the engine. The holder may collectively hold the canister, the purge valve, and the starter motor. In this case, it is possible to shorten yet another hose connecting the purge valve and the canister to each other. Besides, increase in number of components can be inhibited.

[0011] The purge valve includes a connection port, to which the hose is connected, and that extends forward and downward toward the head pipe. The hose includes a first portion and a second portion. The first portion is connected to the connection port of the purge valve and extends forward and downward toward the throttle body. The second portion Z extends forward and upward from the first portion. In this case, gasoline can be inhibited from accumulating in and sticking to the connection port.

[0012] The throttle body includes a connection port to which the hose is connected. The connection port of the throttle body may be disposed on an upper side than the connection port of the purge valve. In this case, it becomes likely that volatilized gasoline is led to the throttle body.

[0013] The throttle body further includes a throttle. The connection port of the throttle body is disposed on a more front side than the throttle and extends forward and upward toward the head pipe. In this case, it becomes likely that volatilized gasoline is led to the throttle body.

[0014] The straddled vehicle may further include a discharge hose for discharging air inside the canister. The discharge hose may be connected to the canister in a position located behind the engine. In this case, rainwater, flying toward the vehicle from ahead during traveling, is unlikely to hit the discharge hose.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

FIG. 1 is a left side view of a straddled vehicle.
FIG. 2 is a left side view of an engine and the sur-

roundings thereof.

FIG. 3 is a top view of the engine and the surroundings thereof.

FIG. 4 is a view of the engine and the surroundings thereof seen from behind the straddled vehicle.

FIG. 5 is an enlarged view of portion of FIG. 2.

FIG. 6 is a left side view of a canister, a purge valve, a starter motor, and a holder.

FIG. 7 is a top view of the canister, the purge valve, and the holder.

FIG. 8 is a perspective view of a crankcase, the starter motor, and the holder seen from the right rear of the straddled vehicle.

FIG. 9 is a perspective view of the holder.

DETAILED DESCRIPTION OF EMBODIMENTS

[0016] A preferred embodiment of a straddled vehicle according to an aspect of the present invention will be hereinafter explained with reference to drawings. It should be noted that in the following explanation, terms indicating such directions as "back and forth", "up and down" and "right and left" are explained based on directions seen from a rider in operation of a straddled vehicle 100.

[0017] FIG. 1 is a left side view of the straddled vehicle 100. The straddled vehicle 100 includes a vehicle body frame 2, a steering device 3, a front wheel 4, a rear wheel 5, an engine 6, a fuel tank 7, and a seat 8.

[0018] The vehicle body frame 2 includes a head pipe 11, a main frame 12, and a cross frame 13 (see FIG. 4). The head pipe 11 extends forward and downward. The head pipe 11 is disposed in the center of the straddled vehicle 100 in a vehicle width direction.

[0019] The main frame 12 is connected at the front end thereof to the head pipe 11. The main frame 12 is composed of components provided right and left. The main frame 12 extends rearward from the head pipe 11, while branching therefrom right and left into the components. It should be noted that the term "connection" is not limited to direct connection and encompasses indirect connection. Besides, the term "connection" is not limited to a condition that separate members are fixed to each other and encompasses a condition that a plurality of portions in an integrated member continue to each other.

[0020] The main frame 12 includes a left main frame 12L and a right main frame 12R (see FIG. 2). The left main frame 12L is disposed on the left side of the center of the straddled vehicle 100 in the vehicle width direction. The right main frame 12R is disposed on the right side of the center of the straddled vehicle 100 in the vehicle width direction. The cross frame 13 extends in the vehicle width direction and connects the left main frame 12L and the right main frame 12R to each other. The cross frame 13 overlaps the engine 6 in a vehicle plan view.

[0021] The steering device 3 is supported by the head pipe 11 so as to be turnable. The steering device 3 includes a front fork 14 and a handle portion 15. The front fork 14 extends forward and downward. The front fork 14 is connected at the lower end thereof to the front wheel 4. The handle portion 15 is connected to the front fork 14. The handle portion 15 includes a handlebar 15a extending in the right-and-left direction. The handlebar 15a is provided with grips on both ends thereof.

[0022] The front wheel 4 is supported by the front fork 14 so as to be rotatable. The rear wheel 5 is supported by a swing arm 16 disposed behind the engine 6 so as to be rotatable.

[0023] The engine 6 is supported by the vehicle body frame 2. The engine 6 is disposed directly below the main frame 12.

[0024] FIG. 2 is a left side view of the engine 6 and the surroundings thereof. FIG. 3 is a top view of the engine 6 and the surroundings thereof. FIG. 4 is a view of the engine 6 and the surroundings thereof seen from behind the vehicle. FIG. 5 is an enlarged view of portion of FIG. 2. The engine 6 includes a crankcase 21, a cylinder 22, and a throttle body 23.

[0025] The cylinder 22 extends forward and upward from a front portion of the crankcase 21. The throttle body 23 is connected to the cylinder 22. The throttle body 23 is disposed directly below the fuel tank 7. The throttle body 23 regulates the amount of air taken into the engine 6. An air cleaner 25 is connected to the throttle body 23. The air cleaner 25 is disposed directly above the cylinder 22.

[0026] The throttle body 23 includes a plurality of throttles 23a and a plurality of connection ports 23b provided to the plural throttles 23a on a one-to-one basis. The plural throttles 23a are disposed away from each other at intervals in the right-and-left direction. The plural throttles 23a each have a cylindrical shape and extend rearward and upward from the cylinder 22. The plural throttles 23a are each provided with a throttle valve (not shown in the drawings) disposed in the interior thereof. It should be noted that the throttle body 23 may employ a configuration including only one throttle 23a. A first hose 51 (to be described) is connected to each connection port 23b. Each connection port 23b is disposed on a more front side than each throttle 23a. Each connection port 23b extends forward and upward from the outer peripheral portion of each throttle 23a toward the head pipe 11. As shown in FIG. 5, a front end 231b of each connection port 23b is located on a more front side than each throttle 23a.

[0027] The fuel tank 7 is disposed behind the head pipe 11. The fuel tank 7 is disposed directly above the engine 6 and the main frame 12. The seat 8 is disposed behind the fuel tank 7. The seat 8 extends in the back-and-forth direction.

[0028] As shown in FIGS. 2 to 5, the straddled vehicle 100 includes a canister 30, a purge valve 40, first to fourth hoses 51 to 54, a starter motor 56, and a holder 60.

[0029] The canister 30 is held by the holder 60. The canister 30 is disposed on a more rear side than the throttle body 23, while being disposed directly below the fuel

tank 7. In the present preferred embodiment, the canister 30 is disposed behind the throttle body 23. In the vehicle side view, the canister 30 overlaps the cylinder 22 in the back-and-forth direction. The canister 30 is disposed directly above the crankcase 21. As shown in FIG. 3, the canister 30 does not overlap the throttle body 23 in the vehicle plan view.

[0030] As shown in FIGS. 2 and 4, the canister 30 is disposed inside the vehicle body frame 2. The canister 30 is disposed directly below the main frame 12. The canister 30 does not overlap the main frame 12 in the vehicle side view. As seen from behind the vehicle, the canister 30 is disposed between the left main frame 12L and the right main frame 12R.

[0031] FIG. 6 is a left side view of the canister 30, the purge valve 40, the starter motor 56, and the holder 60. FIG. 7 is a top view of the canister 30, the purge valve 40, and the holder 60. The canister 30 includes a body 30a, a plurality of ribs 30b, first to third connection ports 30c to 30e, and a plurality of cooling fins 30f.

[0032] The body 30a has an approximately cubic shape and slants with respect to a horizontal direction in the vehicle side view. The body 30a slants such that a front portion thereof is located on an upper side than a rear portion thereof. When described in detail, the body 30a includes a front surface portion 301a, a rear surface portion 301b, a left surface portion 301c, a right surface portion 301d, an upper surface portion 301e, and a lower surface portion 301f. The front and rear surface portions 301a and 301b, the left and right surface portions 301c and 301d, and the upper and lower surface portions 301e and 301f are pairs of outer surface portions of the body 30a and are located in the back-and-forth direction, the right-and-left direction, and the up-and-down direction, respectively. The surface portions 301a to 301f are each made in shape of a plane slanting with respect to the horizontal direction in the vehicle side view.

[0033] The front end of the upper surface portion 301e is located on an upper side than the rear end thereof. The front end of the lower surface portion 301f is located on an upper side than the rear end thereof. The front surface portion 301a extends upward and rearward from the front end of the lower surface portion 301f. The rear surface portion 301b extends upward and rearward from the rear end of the lower surface portion 301f. The body 30a is greater in dimension in both the right-and-left direction and the back-and-forth direction than in the up-and-down direction. The body 30a is greater in dimension in the right-and-left direction than in the back-and-forth direction. The left surface portion 301c is shaped to have a greater diameter than the right surface portion 301d. The plural ribs 30b are composed of two or more ribs 30b provided on the upper surface portion 301e of the body 30a and two or more ribs 30b provided on the lower surface portion 301f of the body 30a. The plural ribs 30b each extend in the back-and-forth direction.

[0034] As shown in FIG. 7, the first and second connection ports 30c and 30d protrude from the right surface portion 301d of the body 30a in the vehicle width direction. The first connection port 30c is a port that the third hose 53 extending from the fuel tank 7 is connected. The second connection port 30d is disposed behind the first connection port 30c. The second connection port 30d is connected to the purge valve 40 through the second hose 52. The third connection port 30e protrudes from the left surface portion 301c of the body 30a in the vehicle width direction. The third connection port 30e is a port that the fourth hose 54 is connected for discharging air in the canister 30.

[0035] The plural cooling fins 30f protrude from the left surface portion 301c of the body 30a in the vehicle width direction, while extending in the back-and-forth direction. The plural cooling fins 30f downwardly slant from front to rear. The plural cooling fins 30f are disposed away from each other at intervals in the up-and-down direction.

[0036] The purge valve 40 is connected to both the canister 30 and the throttle body 23. The purge valve 40 is disposed in an intake pathway that connects the canister 30 and the throttle body 23 to each other. The purge valve 40 regulates the flow rate of volatilized gasoline to be supplied to the throttle body 23 from the canister 30. The purge valve 40 is controlled by an engine control unit (not shown in the drawings).

[0037] The purge valve 40 is held by the holder 60. The purge valve 40 is disposed directly above the canister 30. The purge valve 40 entirely overlaps the canister 30 in the vehicle plan view. In more detail, the purge valve 40 entirely overlaps the upper surface portion 301e of the body 30a of the canister 30 in the vehicle plan view. As shown in FIG. 5, the purge valve 40 is disposed on a more rear side than the throttle body 23. The purge valve 40 overlaps the throttle body 23 in the vehicle back-and-forth direction in the vehicle side view. The purge valve 40 is disposed inside the vehicle body frame 2. The purge valve 40 overlaps the vehicle body frame 2 in the vehicle side view. When described in detail, a portion of the purge valve 40 overlaps the main frame 12 in the vehicle side view. The purge valve 40 overlaps the cross frame 13 in the vehicle plan view. It should be noted that the purge valve 40 may entirely overlap the main frame 12 in the vehicle side view, or alternatively, may not overlap the main frame 12 in the vehicle side view.

[0038] The purge valve 40 includes a body 40a, a coupling portion 40b, a first connection port 40c, a second connection port 40d, and a third connection port 40e. The body 40a is greater in dimension in the right-and-left direction than in both the back-and-forth direction and the up-and-down direction. The body 40a is held by the holder 60 while in contact therewith. As shown in FIG. 7, the body 40a is disposed on a more rear side than the first connection port 30c of the canister 30, while being disposed on a more front side than the second connection port 30d of the canister 30. The coupling portion 40b extends from the left end of the body 40a in the vehicle width direction. The first and second connection ports 40c and 40d are connected to the body 40a through the

coupling portion 40b. The first and second connection ports 40c and 40d extend forward and downward from the coupling portion 40b. It should be noted that the coupling portion 40b may be omitted. In other words, the first and second connection ports 40c and 40d may be directly connected to the body 40a.

[0039] As shown in FIG. 5, the first connection port 40c is connected to the throttle body 23 through the first hose 51. The first connection port 40c is disposed on a lower side than the connection ports 23b of the throttle body 23. In other words, the connection ports 23b of the throttle body 23 are disposed on an upper side than the first connection port 40c. As shown in FIG. 7, the second connection port 40d is connected to the canister 30 through the second hose 52. The second connection port 40d is disposed between the body 40a and the first connection port 40c. The second connection port 40d is located on an upper side than the second connection port 30d of the canister 30. The third connection port 40e is a port to which an electric cable (not shown in the drawings) is plugged for connecting the purge valve 40 and the engine control unit to each other. The third connection port 40e extends forward and downward from the right end of the body 40a.

[0040] Next, the first hose 51 will be explained in detail with reference to FIGS. 3 and 5. The first hose 51 is an exemplary hose. The first hose 51 connects the throttle body 23 and the purge valve 40 to each other. The first hose 51 is connected at one end thereof to the connection ports 23b of the throttle body 23, while being connected at the other end thereof to the first connection port 40c of the purge valve 40. The first hose 51 includes a first portion 51a, a second portion 51b, a third portion 51c, and a fourth portion 51d.

[0041] The first portion 51a is connected at the rear end thereof to the first connection port 40c of the purge valve 40 and extends forward and downward toward the throttle body 23. The second portion 51b extends forward and upward from the front end of the first portion 51a. The front end of the second portion 5 1b is located outside the rear end thereof in the vehicle width direction. The front end of the second portion 51b overlaps the throttles 23a of the throttle body 23 in the vehicle side view. The second portion 51b is greater in dimension than the first portion 51a.

[0042] The third portion 51c extends forward and upward from the front end of the second portion 51b. The third portion 51c slants more gently than the second portion 51b. The front end of the third portion 51c is disposed both on a more front side and an upper side than the connection ports 23b of the throttle body 23. The fourth portion 51d is connected to the connection ports 23b that are provided for the throttles 23a on a one-to-one basis. As shown in FIG. 3, the fourth portion 51d includes a first extended portion 51e and a plurality of extended portions 51g. The first extended portion 51e extends from the front end of the third portion 51c in the vehicle width direction. The plural extended portions 51g are branched from the first extended portion 51e. The plural extended portions 51g extend downward and rearward toward the connection ports 23b of the throttle body 23.

[0043] As shown in FIG. 7, the second hose 52 connects the canister 30 and the purge valve 40 to each other. The second hose 52 is connected at one end thereof to the second connection port 30d of the canister 30, while being connected at the other end thereof to the second connection port 40d of the purge valve 40. A portion of the second hose 52 overlaps the front surface portion 301a in the vehicle plan view.

[0044] As shown in FIGS. 2 and 4, the third hose 53 connects the fuel tank 7 and the canister 30 to each other. The third hose 53 is connected at one end thereof to a cap 7a of the fuel tank 7, while being connected at the other end thereof to the first connection port 30c of the canister 30. The gasoline, volatilized inside the fuel tank 7, flows through the third hose 53 to the canister 30 and is absorbed therein. The third hose 53 extends downward from the cap 7a of the fuel tank 7.

[0045] The fourth hose 54 is an exemplary discharge hose. The fourth hose 54 discharges the air in the canister 30. As shown in FIGS. 5 and 6, the fourth hose 54 is connected at one end thereof to the third connection port 30e of the canister 30, while being opened at the other end thereof. The fourth hose 54 is connected to the canister 30 in a position located behind the engine 6. The fourth hose 54 extends downward from the third connection port 30e.

[0046] As shown in FIG. 6, the starter motor 56 is held by the holder 60. The starter motor 56 is attached to the engine 6. When described in detail, the starter motor 56 is attached to a motor mount (not shown in the drawings) provided on the crankcase 21. The starter motor 56 is disposed directly below the canister 30. The starter motor 56 is disposed on a more front side than the purge valve 40. The front end of the starter motor 56 is disposed on a more front side than the front surface portion 301a of the canister 30. The rear end of the starter motor 56 is located on a more front side than the rear surface portion 301b of the canister 30. The starter motor 56 overlaps the purge valve 40 in the vehicle plan view.

[0047] FIG. 8 is a perspective view of the crankcase 21, the starter motor 56, and the holder 60 seen from the right rear of the vehicle. It should be noted that in FIG. 8, the canister 30 and the purge valve 40 are omitted. As shown in FIGS. 6 and 8, the starter motor 56 includes a motor body 56a, a rotational shaft 56b, a first bracket portion 56c, and a second bracket portion 56d. The motor body 56a has an approximately cylindrical shape. The rotational shaft 56b extends in the vehicle width direction. The first and second bracket portions 56c and 56d protrude from the right end of the motor body 56a in the vehicle width direction. The first and second bracket portions 56c and 56d include holes, respectively, into which fixation members such as bolts are inserted. The first and second bracket portions 56c and 56d are fixed to the crankcase 21 by the fixation members inserted into the

holes. The first and second bracket portions 56c and 56d are disposed at an interval in the back-and-forth direction.

[0048] FIG. 9 is a perspective view of the holder 60. The holder 60 is made of elastic material such as rubber. The holder 60 collectively holds the canister 30, the purge valve 40, and the starter motor 56. The holder 60 includes a canister holding portion 61, a valve holding portion 62, and a motor holding portion 63. The canister holding portion 61, the valve holding portion 62, and the motor holding portion 63 are each made in shape of a hole penetrating the holder 60 in the vehicle width direction. The canister holding portion 61, the valve holding portion 62, and the motor holding portion 63 are formed independently in the holder 60.

[0049] The canister holding portion 61 is disposed between the valve holding portion 62 and the motor holding portion 63. The canister holding portion 61 is shaped to fit the contour of the body 30a of the canister 30. Therefore, the canister holding portion 61 is made in shape of an approximately rectangular hole in the vehicle side view. The canister 30 is inserted into the canister holding portion 61 along the vehicle width direction and is held by the canister holding portion 61. The canister holding portion 61 includes a fitting portion 61a, to which the upper surface portion 301e of the canister 30 is fitted, and a plurality of slits 61b, to which the plural ribs 30b of the canister 30 are locked. An inner surface 61c of the fitting portion 61a is shaped to fit the upper surface portion 301e of the canister 30 so as to be in contact therewith. The fitting portion 61a slants with respect to the horizontal direction in the vehicle side view. The fitting portion 61a slants such that a front portion thereof is located on an upper side than a rear portion thereof. The plural slits 61b are composed of two or more slits 61b provided in a lower portion of the canister holding portion 61 and two or more slits 61b provided in the fitting portion 61a.

[0050] The valve holding portion 62 is disposed on the upper side of the canister holding portion 61. The valve holding portion 62 is shaped to protrude upward from the fitting portion 61a of the canister holding portion 61. The valve holding portion 62 is eccentric to the second connection port 30d on the fitting portion 61a. As shown in FIG. 7, the valve holding portion 62 entirely overlaps the canister holding portion 61 in the vehicle plan view. The valve holding portion 62 overlaps the motor holding portion 63 in the vehicle plan view. The purge valve 40 is inserted into the valve holding portion 62 along the vehicle width direction and is held by the valve holding portion 62. In the present preferred embodiment, the valve holding portion 62 is shaped to fit the contour of the body 40a of the purge valve 40, whereby the body 40a of the purge valve 40 is held by the valve holding portion 62 while in contact therewith.

[0051] The motor holding portion 63 is disposed on the lower side of the canister holding portion 61. The starter motor 56 is inserted into the motor holding portion 63 along the vehicle width direction and is held by the motor holding portion 63. In the present preferred embodiment, the motor holding portion 63 is shaped to fit the contour of the motor body 56a of the starter motor 56. Therefore, the motor holding portion 63 has an approximately cylindrical shape in the vehicle side view. The motor body 56a of the starter motor 56 is held by the motor holding portion 63 while in contact therewith.

[0052] The holder 60 includes a plurality of support protrusions 64a to 64c, a protruding portion 65, and a guide portion 66. The support protrusion 64a protrudes from a front lower portion of the motor holding portion 63. The support protrusions 64b and 64c protrude from a rear lower portion of the motor holding portion 63. The support protrusions 64b and 64c are separated in the vehicle width direction. As shown in FIG. 8, the support protrusion 64a makes contact with the cylinder 22, whereas the support protrusions 64b and 64c make contact with the crankcase 21.

[0053] As shown in FIG. 7, the protruding portion 65 protrudes from a lower portion of the motor holding portion 63 in the vehicle width direction. As shown in FIG. 8, the protruding portion 65 is sandwiched between the first bracket portion 56c and the second bracket portion 56d of the starter motor 56.

[0054] The guide portion 66 guides a hose 58 connected to the fuel tank 7. The hose 58 is connected at one end thereof to the fuel tank 7, while being opened at the other end thereof. The hose 58 extends approximately downward from the fuel tank 7. The other end of the hose 58 is disposed behind the engine 6. The guide portion 66 is made in shape of a clamp and clamps the hose 58. A portion of the hose 58 guided by the guide portion 66 overlaps the fourth hose 54 in the vehicle side view.

[0055] In the straddled vehicle 100 according to the present aspect, the canister 30 is disposed on a more rear side than the throttle body 23, whereas the purge valve 40 is disposed directly above the canister 30, while overlapping the throttle body 23 in the vehicle back-and-forth direction in the vehicle side view. Because of this, the purge valve 40 is enabled to be disposed in a position adjacent to the throttle body 23, whereby it is possible to shorten the first hose 51 that connects the throttle body 23 and the purge valve 40 to each other. Consequently, an efficient layout is enabled for the first hose 51. Besides, the canister 30 is disposed directly below the fuel tank 7, whereby it is possible to shorten the third hose 53 connecting the canister 30 and the fuel tank 7 to each other.

[0056] The canister 30 and the purge valve 40 are disposed inside the vehicle body frame 2. Hence, an impact can be prevented from directly acting on the canister 30, for instance, when the vehicle falls over.

[0057] The purge valve 40 overlaps the vehicle body frame 2 in the vehicle side view. Hence, an impact can be prevented from directly acting on the canister 30, for instance, when the vehicle falls over, and simultaneously, external aesthetics can be enhanced.

[0058] The canister 30 does not overlap the throttle body 23 in the vehicle plan view. Hence, an efficient lay-

out is enabled for the first to fourth hoses 51 to 54 disposed in the surroundings of the canister 30.

[0059] The holder 60 collectively holds the canister 30, the purge valve 40, and the starter motor 56. Hence, the purge valve 40 can be disposed near the canister 30. Accordingly, it is possible to shorten the second hose 52 connecting the purge valve 40 and the canister 30 to each other. Besides, increase in number of components can be inhibited.

[0060] The first hose 51, connecting the throttle body 23 and the purge valve 40 to each other, includes the first portion 51a and the second portion 51b. The first portion 51a is connected to the first connection port 40c of the purge valve 40 and extends forward and downward toward the throttle body 23. The second portion 51b extends forward and upward from the first portion 51a. Accordingly, gasoline can be inhibited from accumulating in and sticking to the first connection port 40c.

[0061] The connection ports 23b of the throttle body 23 are disposed on an upper side than the first connection port 40c of the purge valve 40. Hence, volatilized gasoline is likely to be led to the throttle body 23.

[0062] The connection ports 23b of the throttle body 23 are disposed on a more front side than the throttles 23a, while extending forward and upward toward the head pipe 11. Hence, volatilized gasoline is likely to be led to the throttle body 23.

[0063] The fourth hose 54 is connected to the canister 30 in the position behind the engine 6. Hence, rainwater, flying toward the vehicle from ahead during traveling, is unlikely to hit the fourth hose 54.

[0064] The straddled vehicle 100 is not limited to a scooter type vehicle. The vehicle body frame 2 and the engine 6 may be changed in structure.

[0065] In the preferred embodiment described above, the body 30a of the canister 30 has an approximately cubic shape. However, the body 30a may have a cylindrical shape.

Claims

1. A straddled vehicle (100) comprising:

a vehicle body frame (2) including a head pipe (11);
an engine (6) including a throttle body (23), the engine (6) being supported by the vehicle body frame (2);
a fuel tank (7) disposed behind the head pipe (11), based on directions seen from a rider in operation of said straddled vehicle (100);
a canister (30) disposed on a more rear side than the throttle body (23), the canister (30) disposed directly below the fuel tank (7), based on directions seen from a rider in operation of said straddled vehicle (100);
a purge valve (40) disposed directly above the canister (30), the purge valve (40) overlapping the throttle body (23) in a vehicle back-and-forth direction in a vehicle side view, the purge valve (40) being connected to the canister (30) and the throttle body (23); and
a hose (51) connecting the throttle body (23) and the purge valve (40) to each other;
said purge valve (40) including a first connection port (40c) to which the hose (51) is connected, the connection port (40c) extending forward and downward toward the head pipe (11), based on directions seen from a rider in operation of said straddled vehicle (100);
the hose (51) including a first portion (51a) and a second portion (51b), the first portion (51a) being connected to the first connection port (40c) of the purge valve (40), the first portion (51a) extending forward and downward toward the throttle body (23), the second portion (51b) extending forward and upward from the first portion (51a), based on directions seen from a rider in operation of said straddled vehicle (100);
characterized in that said throttle body (23) includes a throttle (23a) and a second connection port (23b) to which the hose (51) is connected, and
the second connection port (23b) of the throttle body (23) is disposed on a more front side than the throttle (23a), the connection port (23b) of the throttle body (23) extending forward and upward toward the head pipe (11).

2. The straddled vehicle according to claim 1, wherein the canister (30) and the purge valve (40) are disposed inside the vehicle body frame (2).

3. The straddled vehicle according to claim 1 or 2, wherein the purge valve (40) overlaps the vehicle body frame (2) in the vehicle side view.

4. The straddled vehicle according to any one of claims 1 to 3, wherein the canister (30) does not overlap the throttle body (23) in a vehicle plan view.

5. The straddled vehicle according to any one of claims 1 to 4, further comprising:

a starter motor (56) attached to the engine (6); and
a holder (60) collectively holding the canister (30), the purge valve (40), and the starter motor (56).

6. The straddled vehicle according to any one of the foregoing claims, wherein

the throttle body (23) includes a second connection port (23b) to which the hose (51) is connect-

ed, and
the second connection port (23b) of the throttle body (23) is disposed on an upper side than the connection port (40c) of the purge valve (40).

7. The straddled vehicle according to any one of the foregoing claims, further comprising:
a discharge hose (54) for discharging air inside the canister (30), the discharge hose (54) being connected to the canister (30) in a position located behind the engine (6).

8. The straddled vehicle according to any one of the foregoing claims, said holder (60) including a canister holding portion (61); a valve holding portion (62), and a motor holding portion (63); the canister holding portion (61), the valve holding portion (62), and the motor holding portion (63) being each made in shape of a hole penetrating the holder (60) in the vehicle width direction, based on directions seen from a rider in operation of said straddled vehicle (100);
the canister holding portion (61), the valve holding portion (62), and the motor holding portion (63) being formed independently in the holder (60).

9. The straddled vehicle according to any one of the foregoing claims, wherein the valve holding portion (62) is disposed on the upper side of the canister holding portion (61), based on directions seen from a rider in operation of said straddled vehicle (100).

10. The straddled vehicle according to any one of the foregoing claims, wherein the valve holding portion (62) is shaped to protrude upward from the fitting portion (61a) of the canister holding portion (61), based on directions seen from a rider in operation of said straddled vehicle (100).

11. The straddled vehicle of any one of the foregoing claims, wherein the valve holding portion (62) entirely overlaps the canister holding portion (61) in the vehicle plan view, based on directions seen from a rider in operation of said straddled vehicle (100).

12. The straddled vehicle of any one of the foregoing claims, wherein the valve holding portion (62) overlaps the motor holding portion (63) in the vehicle plan view, based on directions seen from a rider in operation of said straddled vehicle (100);
the purge valve (40) being inserted into the valve holding portion (62) along the vehicle width direction and is held by the valve holding portion (62), based on directions seen from a rider in operation of said straddled vehicle (100).

13. The straddled vehicle of any one of the foregoing claims, wherein the purge valve (40) includes a body (40a), a coupling portion (40b), a first connection port (40c), a second connection port (40d) and a third connection port (40e);
the valve holding portion (62) is shaped to fit the contour of the body (40a) of the purge valve (40), whereby the body (40a) of the purge valve (40) is held by the valve holding portion (62) while in contact therewith.

14. The straddled vehicle of any one of the foregoing claims, wherein the canister (30) includes a body (30a), a plurality of ribs (30b), first to third connection ports (30c, 30d, 30e) and a plurality of cooling fins (30f);
the valve holding portion (62) is eccentric to the second connection port (30d) on the fitting portion (61a).

Patentansprüche

1. Spreizsitz-Fahrzeug (100), das umfasst:

einen Fahrzeug-Karosserierahmen (2), der ein Steuerrohr (11) enthält;
einen Motor (6), der ein Drosselklappengehäuse (23) enthält, wobei der Motor (6) von dem Fahrzeug-Karosserierahmen (2) getragen wird;
einen Kraftstofftank (7), der, bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, hinter dem Steuerrohr (11) angeordnet ist;
einen Behälter (30), der, bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, an einer weiter hinten liegenden Seite angeordnet ist als das Drosselklappengehäuse (23), wobei der Behälter (30) direkt unterhalb des Kraftstofftanks (7) angeordnet ist;
ein Entlüftungsventil (40), das direkt oberhalb des Behälters (30) angeordnet ist, wobei das Entlüftungsventil (40) das Drosselklappengehäuse (23) in einer Seitenansicht des Fahrzeugs in einer Fahrzeug-Längsrichtung überlappt, und das Entlüftungsventil (40) mit dem Behälter (30) sowie dem Drosselklappengehäuse (23) verbunden ist; und
einen Schlauch (51), der das Drosselklappengehäuse (23) und das Entlüftungsventil (40) miteinander verbindet;
wobei das Entlüftungsventil (40) einen ersten Verbindungsanschluss (40c) enthält, mit dem der Schlauch (51) verbunden ist, und sich der Verbindungsanschluss, bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, (40c) auf das Steuerrohr (11) zu nach vorn und nach unten erstreckt;
der Schlauch (51) einen ersten Abschnitt (51a) und einen zweiten Abschnitt (51b) einschließt,

wobei der erste Abschnitt (51a) mit dem ersten Verbindungsanschluss (40c) des Entlüftungsventils (40) verbunden ist, bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, sich der erste Abschnitt (51a) auf das Drosselklappengehäuse (23) zu nach vorn und nach unten erstreckt und sich der zweite Abschnitt (51b) von dem ersten Abschnitt (51a) aus nach vorn und nach oben erstreckt;
dadurch gekennzeichnet, dass das Drosselklappengehäuse (23) eine Drosselklappe (23a) sowie einen zweiten Verbindungsanschluss (23b) enthält, mit dem der Schlauch (51) verbunden ist, und
der zweite Verbindungsanschluss (23b) des Drosselklappengehäuses (23) an einer weiter vorn liegenden Seite angeordnet ist als die Drosselklappe (23a), wobei sich der Verbindungsanschluss (23b) des Drosselklappengehäuses (23) auf das Steuerrohr (11) zu nach vorn und nach oben erstreckt.

2. Spreizsitz-Fahrzeug nach Anspruch 1, wobei der Behälter (30) und das Entlüftungsventil (40) innerhalb des Fahrzeug-Karosserierahmens (2) angeordnet sind.

3. Spreizsitz-Fahrzeug nach Anspruch 1 oder 2, wobei das Entlüftungsventil (40) in der Seitenansicht des Fahrzeugs den Fahrzeug-Karosserierahmen (2) überlappt.

4. Spreizsitz-Fahrzeug nach einem der Ansprüche 1 bis 3, wobei der Behälter (30) in einer Draufsicht auf das Fahrzeug das Drosselklappengehäuse (23) nicht überlappt.

5. Spreizsitz-Fahrzeug nach einem der Ansprüche 1 bis 4, das des Weiteren umfasst:

einen Anlasser (56), der an dem Motor (6) angebracht ist; sowie
einen Halter (60), der den Behälter (30), das Entlüftungsventil (40) und den Anlasser (56) zusammen hält.

6. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei

das Drosselklappengehäuse (23) einen zweiten Verbindungsanschluss (23b) enthält, mit dem der Schlauch (51) verbunden ist, und
der zweite Verbindungsanschluss (23b) des Drosselklappengehäuses (23) an einer weiter oben liegenden Seite angeordnet ist als der Verbindungsanschluss (40c) des Entlüftungsventils (40).

7. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, das des Weiteren umfasst:
einen Ableitschlauch (54) zum Ableiten von Luft im Inneren des Behälters (30), wobei der Ableitschlauch (54) mit dem Behälter (30) an einer Position verbunden ist, die hinter dem Motor (6) liegt.

8. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei der Halter (60) einen Behälter-Halteabschnitt (61), einen Ventil-Halteabschnitt (62) sowie einen Motor-Halteabschnitt (63) einschließt, und der Behälter-Halteabschnitt (61), der Ventil-Halteabschnitt (62) sowie der Motor-Halteabschnitt (63) jeweils in Form eines Lochs ausgebildet sind, das, bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, in der Fahrzeug-Breitenrichtung durch den Halter (60) hindurch verläuft;
wobei der Behälter-Halteabschnitt (61), der Ventil-Halteabschnitt (62) und der Motor-Halteabschnitt (63) unabhängig in dem Halter (60) ausgebildet sind.

9. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei der Ventil-Halteabschnitt (62), bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, an der Oberseite des Behälter-Halteabschnitts (61) angeordnet ist.

10. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei der Ventil-Halteabschnitt (62) so geformt ist, dass er, bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, von dem Passabschnitt (61a) des Behälter-Halteabschnitts (61) nach oben vorsteht.

11. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei der Ventil-Halteabschnitt (62) den Behälter-Halteabschnitt (61), bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, in der Draufsicht auf das Fahrzeug vollständig überlappt.

12. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei der Ventil-Halteabschnitt (62) den Motor-Halteabschnitt (63), bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, in der Draufsicht auf das Fahrzeug überlappt;
das Entlüftungsventil (40) in den Ventil-Halteabschnitt (62), bezogen auf Richtungen, die von einem Fahrer beim Betrieb des Spreizsitz-Fahrzeugs (100) gesehen werden, in der Fahrzeug-Breitenrichtung eingeführt ist und von dem Ventil-Halteabschnitt (62) gehalten wird.

13. Spreizsitz-Fahrzeug nach einem der vorangehen-

den Ansprüche, wobei das Entlüftungsventil (40) einen Körper (40a), einen Kopplungsabschnitt (40b), einen ersten Verbindungsanschluss (40c), einen zweiten Verbindungsanschluss (40d) sowie einen dritten Verbindungsanschluss (40e) einschließt;
der Ventil-Halteabschnitt (62) so geformt ist, dass er sich an die Kontur des Körpers (40a) des Entlüftungsventils (40) anpasst, so dass der Körper (40a) des Entlüftungsventils (40) von dem Ventil-Halteabschnitt (62) gehalten wird und dabei in Kontakt damit ist.

14. Spreizsitz-Fahrzeug nach einem der vorangehenden Ansprüche, wobei der Behälter (30) einen Körper (30a), eine Vielzahl von Rippen (30b), erste bis dritte Verbindungsanschlüsse (30c, 30d, 30e) sowie eine Vielzahl von Kühlrippen (30f) enthält;
der Ventil-Halteabschnitt (62) exzentrisch zu dem zweiten Verbindungsanschluss (30d) an dem Passabschnitt (61a) ist.

Revendications

1. Véhicule à enfourcher (100) comprenant :

un cadre de carrosserie de véhicule (2) comprenant un tube de tête (11) ;
un moteur (6) comprenant un corps de papillon (23), le moteur (6) étant supporté par le cadre de la carrosserie du véhicule (2) ;
un réservoir de carburant (7) placé derrière le tube de tête (11), en fonction des directions vues par un conducteur lors de l'utilisation du véhicule à enfourcher (100) ;
un bidon (30) disposé sur un côté plus arrière que le corps de papillon (23), le bidon (30) étant disposé directement sous le réservoir de carburant (7), sur la base des directions vues par un conducteur lors de l'utilisation dudit véhicule à enfourcher (100) ;
une soupape de purge (40) disposée directement au-dessus du bidon (30), la soupape de purge (40) chevauchant le corps de papillon (23) dans une direction de va-et-vient du véhicule dans une vue latérale du véhicule, la soupape de purge (40) étant reliée au bidon (30) et au corps de papillon (23) ; et
un tuyau (51) reliant le corps de papillon (23) et la soupape de purge (40) l'un à l'autre ;
ladite soupape de purge (40) comprend un premier port de connexion (40c) auquel le tuyau (51) est raccordé, le port de connexion (40c) s'étendant vers l'avant et vers le bas en direction du tube de tête (11), selon les directions vues d'un conducteur lors de l'utilisation dudit véhicule à enfourcher (100) ;
le tuyau (51) comprend une première partie (51a) et une deuxième partie (51b), la première partie (51a) étant connectée au premier port de connexion (40c) de la soupape de purge (40), la première partie (51a) s'étendant vers l'avant et vers le bas en direction du corps de papillon (23), la deuxième partie (51b) s'étendant vers l'avant et vers le haut à partir de la première partie (51a), sur la base des directions vues par un conducteur lors de l'utilisation dudit véhicule à enfourcher (100) ;
caractérisé par le fait que ledit corps de papillon (23) comprend un papillon (23 a) et un deuxième port de connexion (23 b) auquel le tuyau (51) est raccordé, et
le deuxième port de connexion (23b) du corps de papillon (23) est disposé sur un côté plus avant que le papillon (23a), le port de connexion (23b) du corps de papillon (23) s'étendant vers l'avant et vers le haut en direction du tube de tête (11).

2. Véhicule à enfourcher selon la revendication 1, dans lequel le bidon (30) et la soupape de purge (40) sont disposés à l'intérieur du cadre de la carrosserie du véhicule (2).

3. Véhicule à enfourcher selon la revendication 1 ou 2, dans lequel la soupape de purge (40) chevauche le cadre de la carrosserie du véhicule (2) dans la vue latérale du véhicule.

4. Véhicule à enfourcher selon l'une des revendications 1 à 3, dans lequel le bidon (30) ne chevauche pas le corps de papillon (23) dans une vue en plan du véhicule.

5. Véhicule à enfourcher selon l'une des revendications 1 à 4, comprenant en outre :

un moteur de démarrage (56) fixé au moteur (6) ; et
un support (60) contenant collectivement le bidon (30), la soupape de purge (40) et le moteur de démarrage (56).

6. Véhicule à enfourcher selon l'une quelconque des revendications précédentes, dans lequel

le corps de papillon (23) comprend un deuxième port de connexion (23b) auquel le tuyau (51) est raccordé, et
le deuxième port de connexion (23b) du corps de papillon (23) est disposé sur un côté supérieur au port de connexion (40c) de la soupape de purge (40).

7. Véhicule à enfourcher selon l'une quelconque des revendications précédentes, comprenant en outre :

un tuyau d'évacuation (54) pour évacuer l'air à l'intérieur du bidon (30), le tuyau d'évacuation (54) étant relié au bidon (30) dans une position située derrière le moteur (6).

8. Véhicule à enfourcher selon l'une quelconque des revendications précédentes, ledit support (60) comprenant une partie porte-bidon (61), une partie porte-soupape (62) et une partie porte-moteur (63) ; la partie porte-bidon (61), la partie porte-soupape (62) et la partie porte-moteur (63) ayant chacune la forme d'un trou pénétrant le support (60) dans la direction de la largeur du véhicule, selon les directions vues d'un conducteur lors de l'utilisation dudit véhicule à enfourcher (100) ;
la partie porte-bidon (61), la partie porte-soupape (62) et la partie porte-moteur (63) étant formées indépendamment dans le support (60).

9. Véhicule à enfourcher selon l'une quelconque des revendications précédentes, dans lequel la partie porte-soupape (62) est disposée sur le côté supérieur de la partie porte-bidon (61), selon les directions vues d'un conducteur lors de l'utilisation dudit véhicule à enfourcher (100).

10. Véhicule à enfourcher selon l'une quelconque des revendications précédentes, dans lequel la partie porte-soupape (62) est formée pour faire saillie vers le haut à partir de la partie de raccord (61a) de la partie porte-bidon (61), selon les directions vues d'un conducteur lors de l'utilisation dudit véhicule à enfourcher (100).

11. Véhicule à enfourcher de l'une quelconque des revendications précédentes, dans lequel la partie porte-soupape (62) chevauche entièrement la partie porte-bidon (61) dans la vue en plan du véhicule, sur la base des directions vues par un conducteur lors de l'utilisation dudit véhicule à enfourcher (100).

12. Véhicule à enfourcher de l'une quelconque des revendications précédentes, dans lequel la partie porte-soupape (62) chevauche la partie porte-moteur (63) dans la vue en plan du véhicule, sur la base des directions vues par un conducteur lors de l'utilisation dudit véhicule à enfourcher (100) ;
la soupape de purge (40) est insérée dans la partie porte-soupape (62) le long de la direction de la largeur du véhicule et est maintenue par la partie porte-soupape (62), sur la base des directions vues par un conducteur lors de l'utilisation dudit véhicule à enfourcher (100).

13. Véhicule à enfourcher de l'une quelconque des revendications précédentes, dans lequel la soupape de purge (40) comprend un corps (40a), une partie de couplage (40b), un premier port de connexion (40c), un deuxième port de connexion (40d) et un troisième port de connexion (40e) ;
la partie porte-soupape (62) est formée pour s'adapter au contour du corps (40a) de la soupape de purge (40), de sorte que le corps (40a) de la soupape de purge (40) est maintenu par la partie porte-soupape (62) lorsqu'il est en contact avec elle.

14. Véhicule à enfourcher de l'une quelconque des revendications précédentes, dans lequel le bidon (30) comprend un corps (30a), une pluralité de nervures (30b), des ports de connexion du premier au troisième (30c, 30d, 30e) et une pluralité d'ailettes de refroidissement (30f) ;
la partie porte-soupape (62) est excentrée par rapport au deuxième port de connexion (30d) sur la partie de raccord (61a).

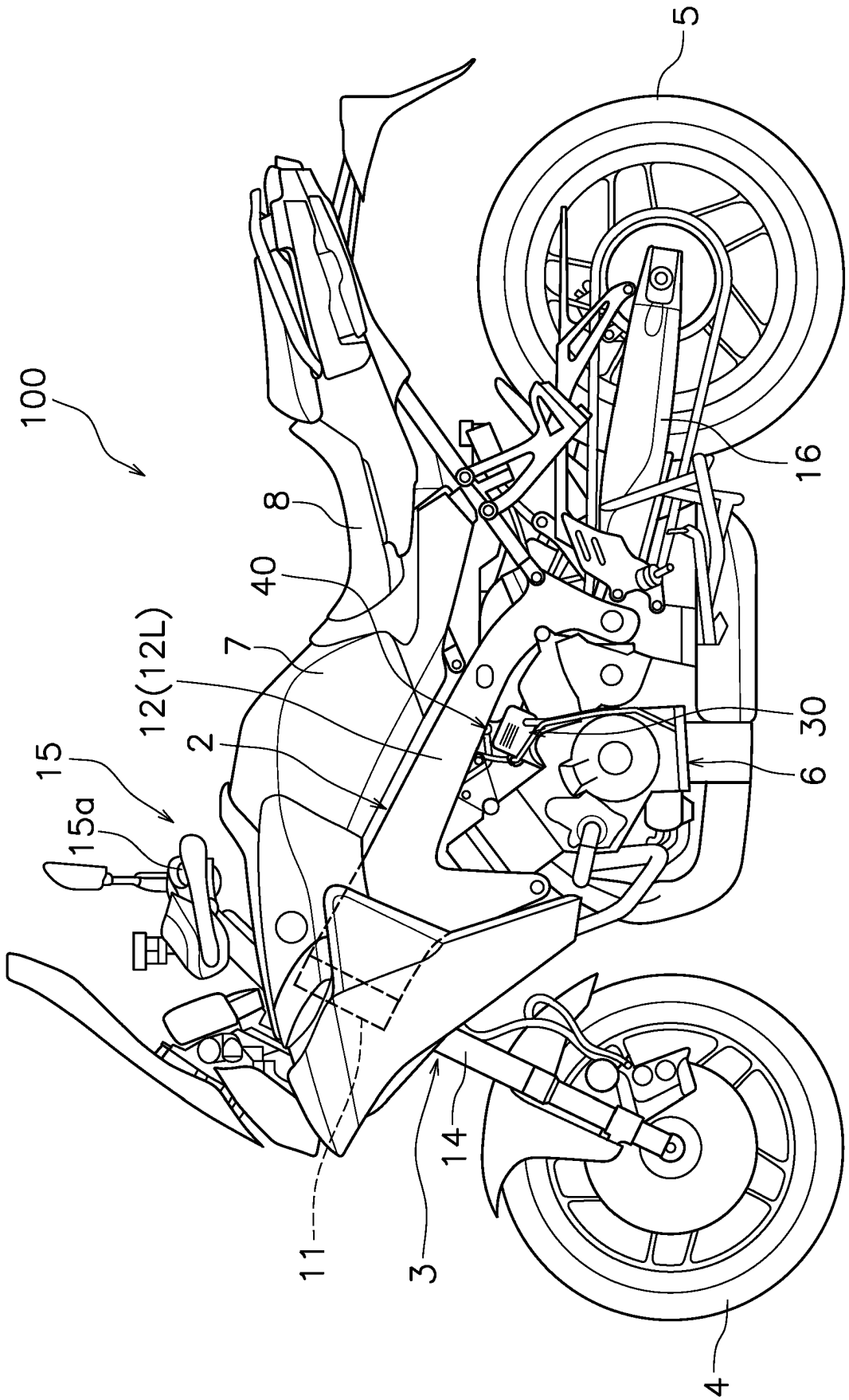

FIG. 1

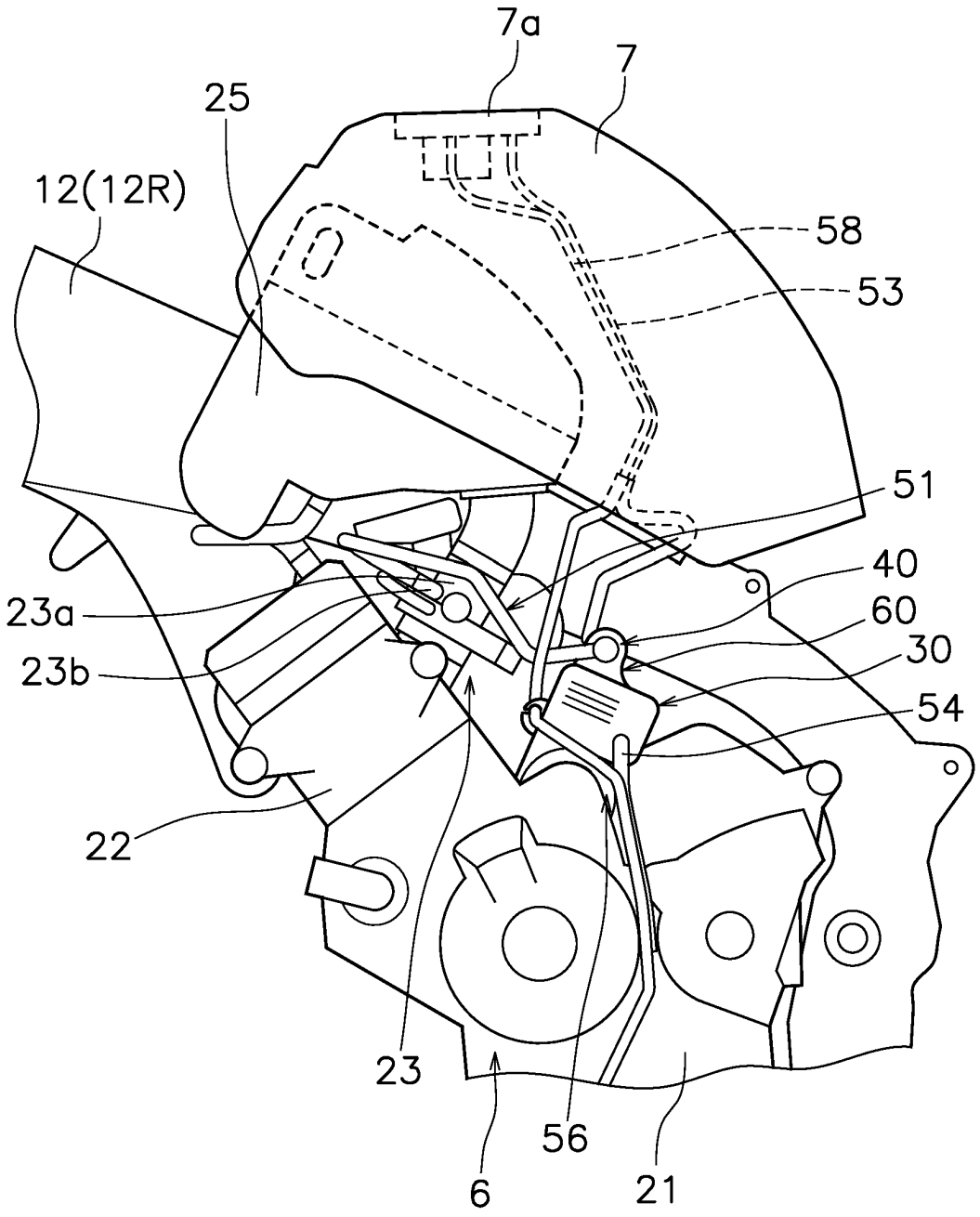

FIG. 2

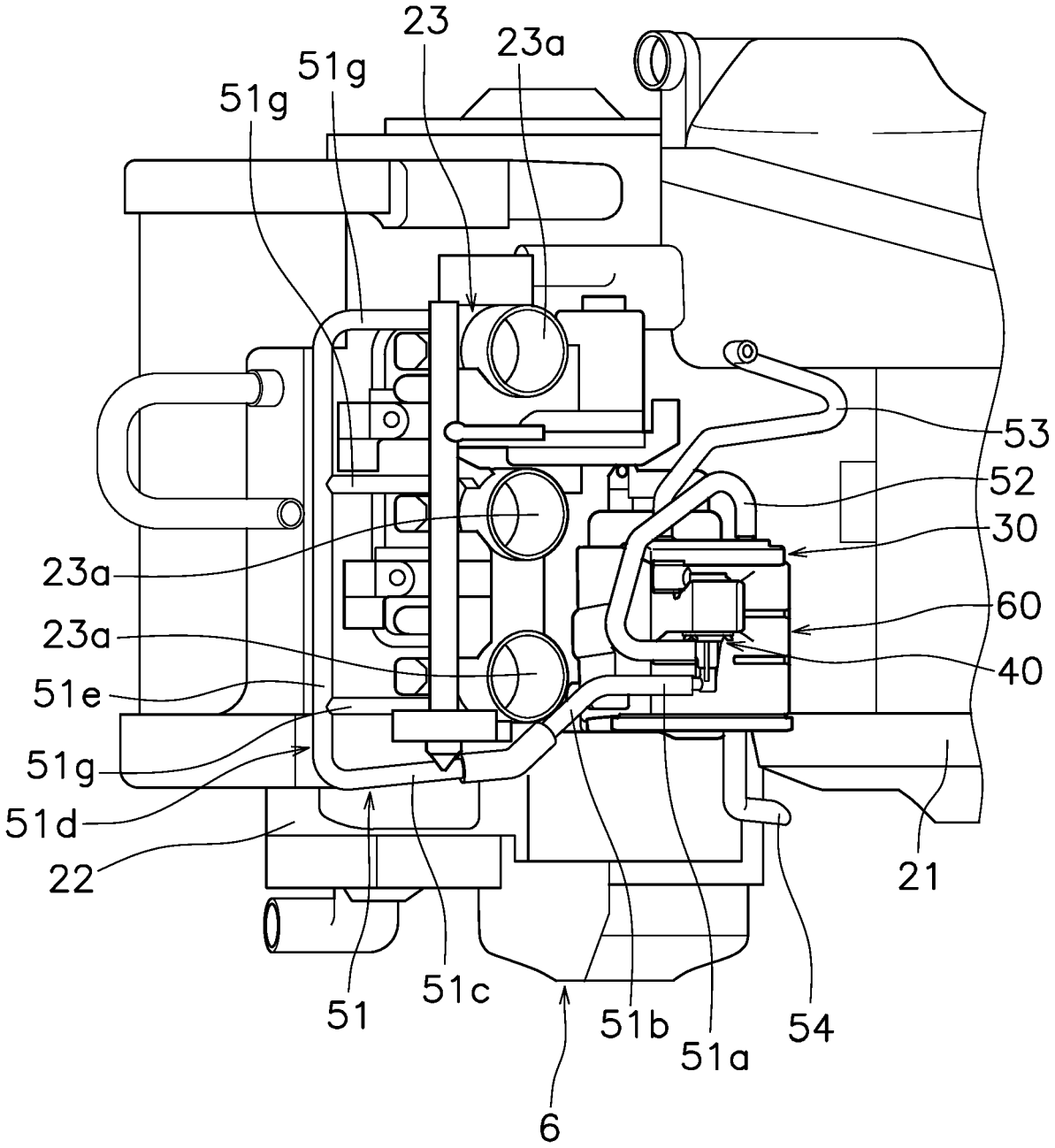
23
23a
51g
51g
53
52
30
23a
60
23a
40
51e
51g
51d
22
21
51
51c
51b
51a
54
6

FIG. 3

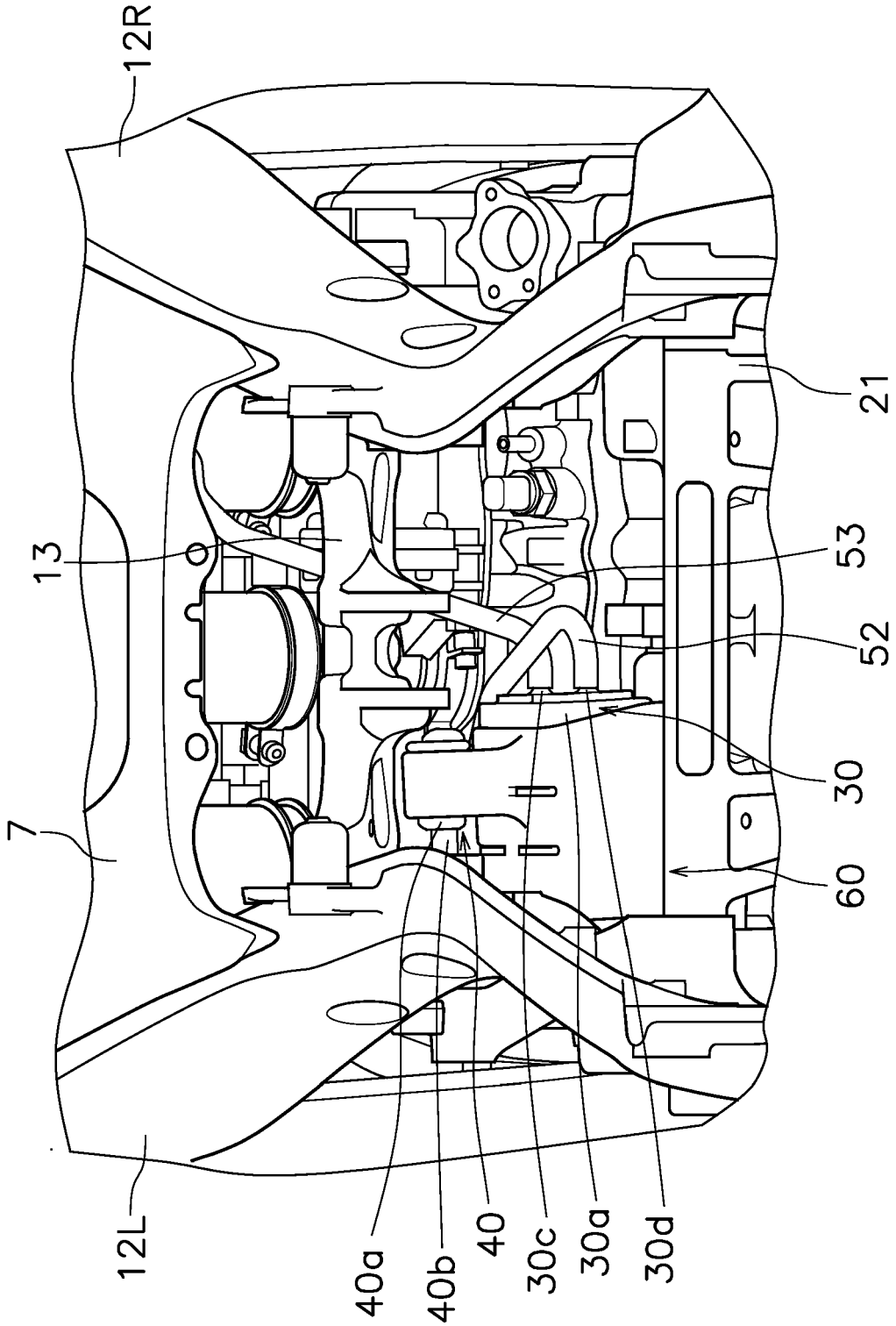

FIG. 4

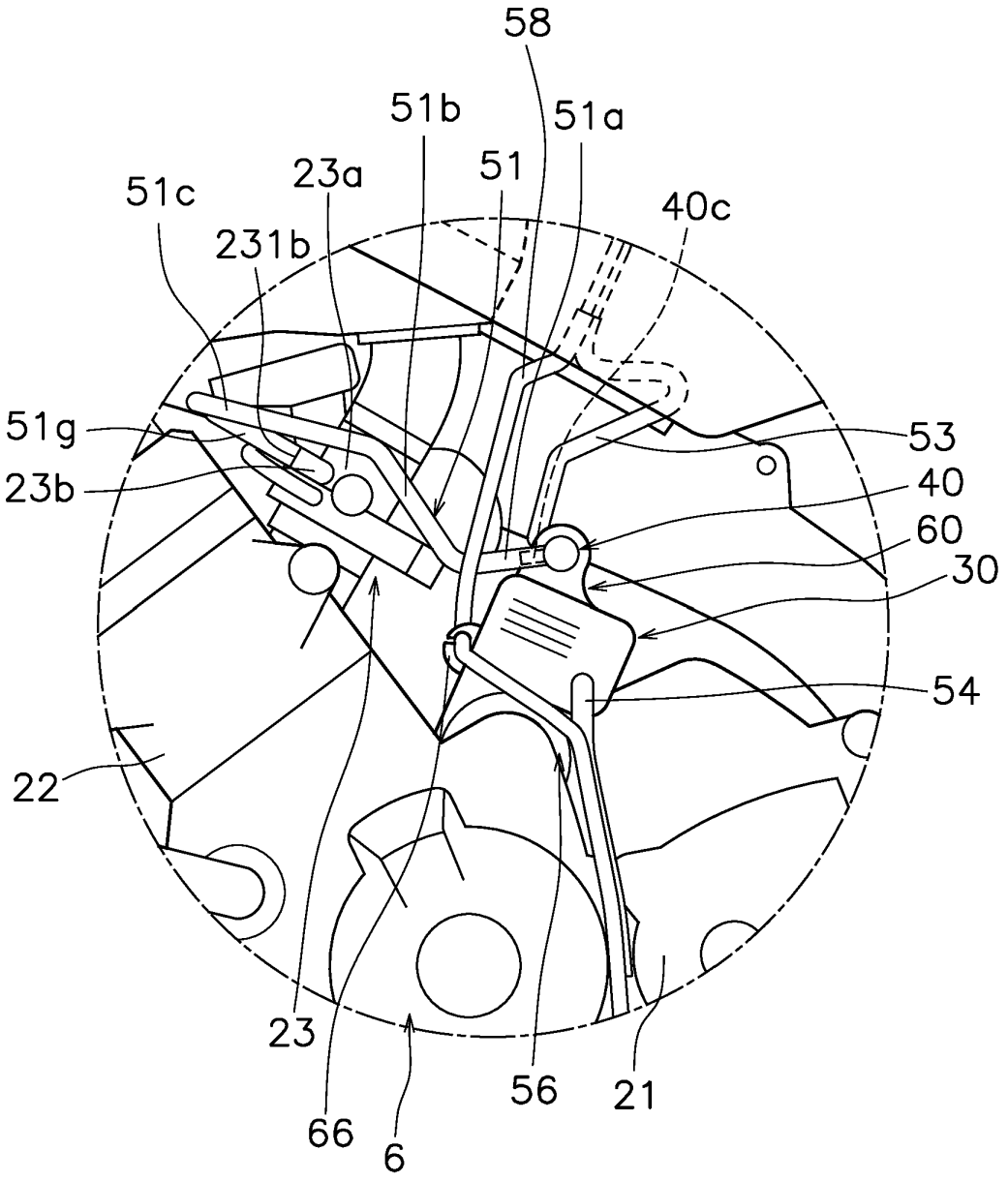
58
51b
51a
51
23a
51c
40c
231b
51g
53
23b
40
60
30
54
22
23
56
21
66
6

FIG. 5

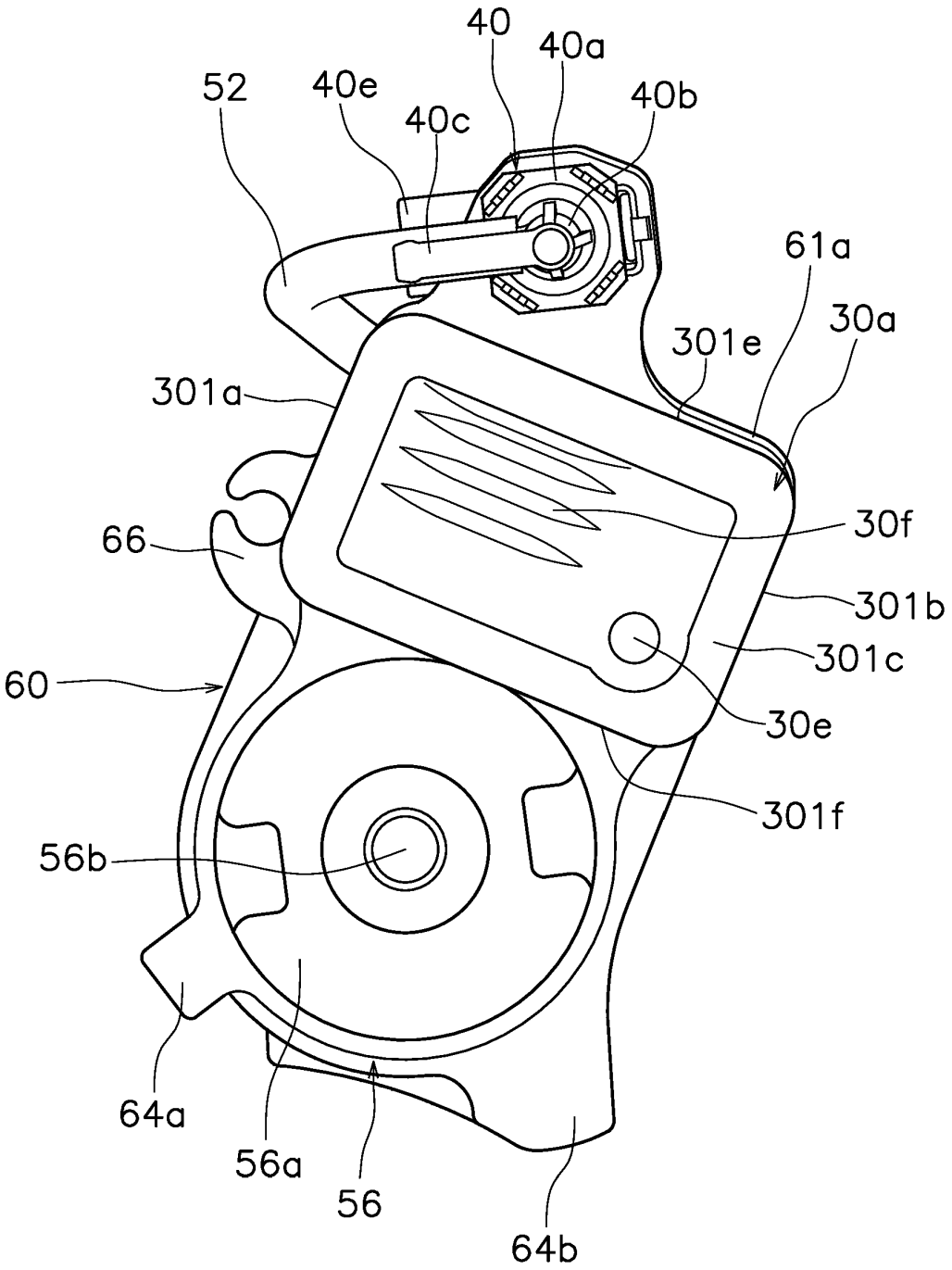
40
40a
52
40e
40c
40b
61a
30a
301e
301a
66
30f
301b
301c
60
30e
301f
56b
64a
56a
56
64b

FIG. 6

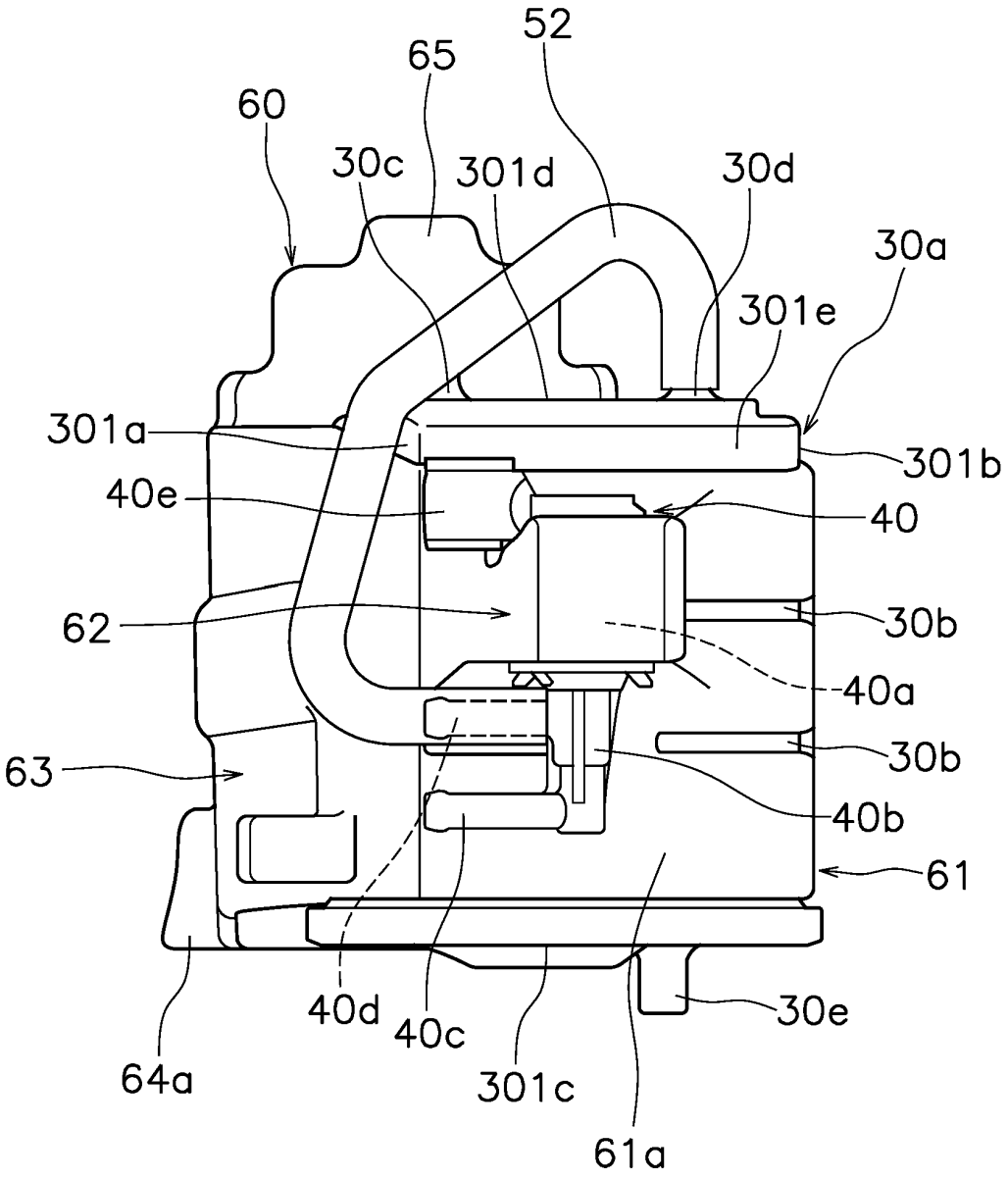
52
65
60
30c
301d
30d
30a
301e
301a
301b
40e
40
62
30b
40a
63
30b
40b
61
40d
40c
30e
64a
301c
61a

FIG. 7

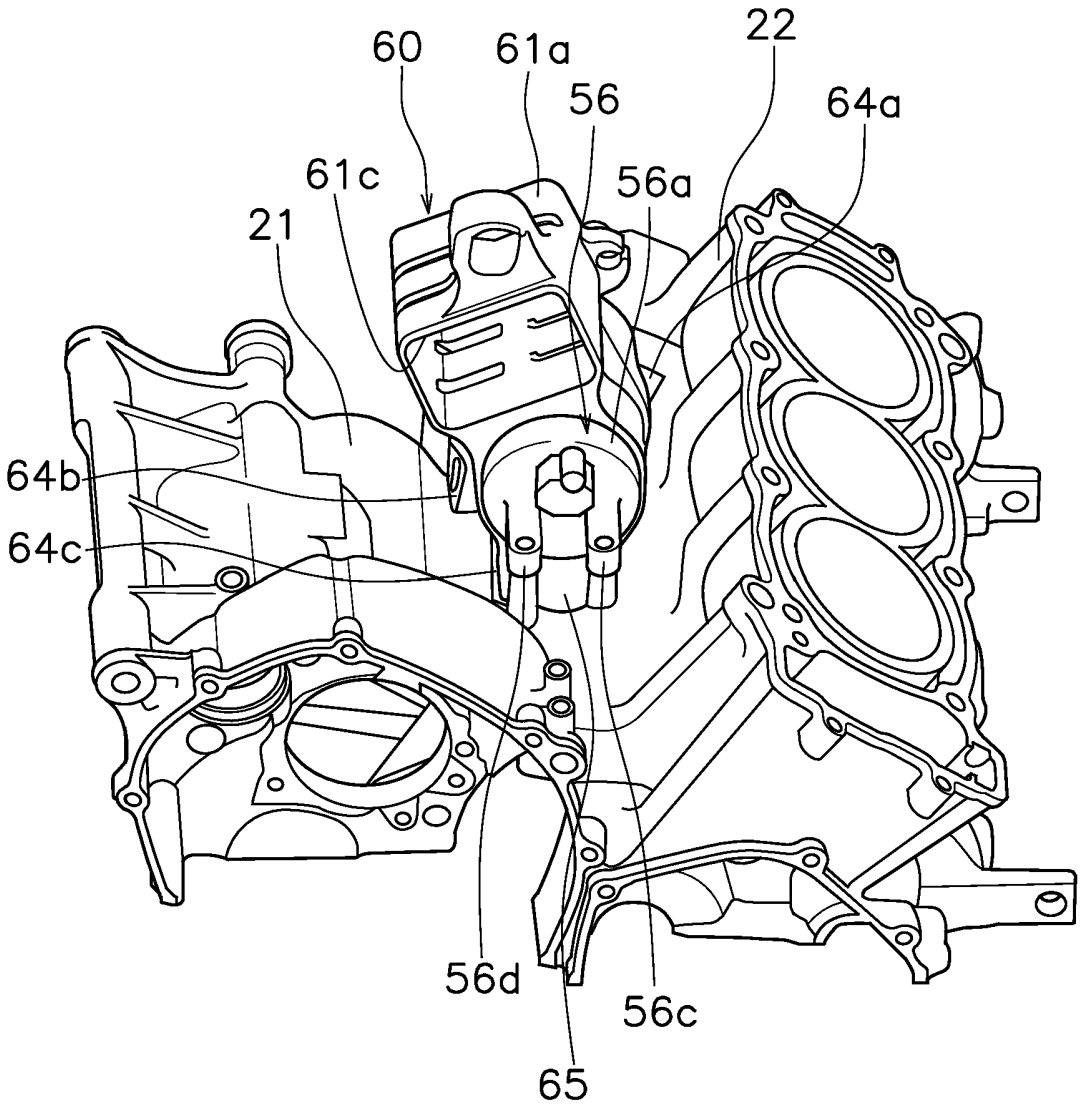

FIG. 8

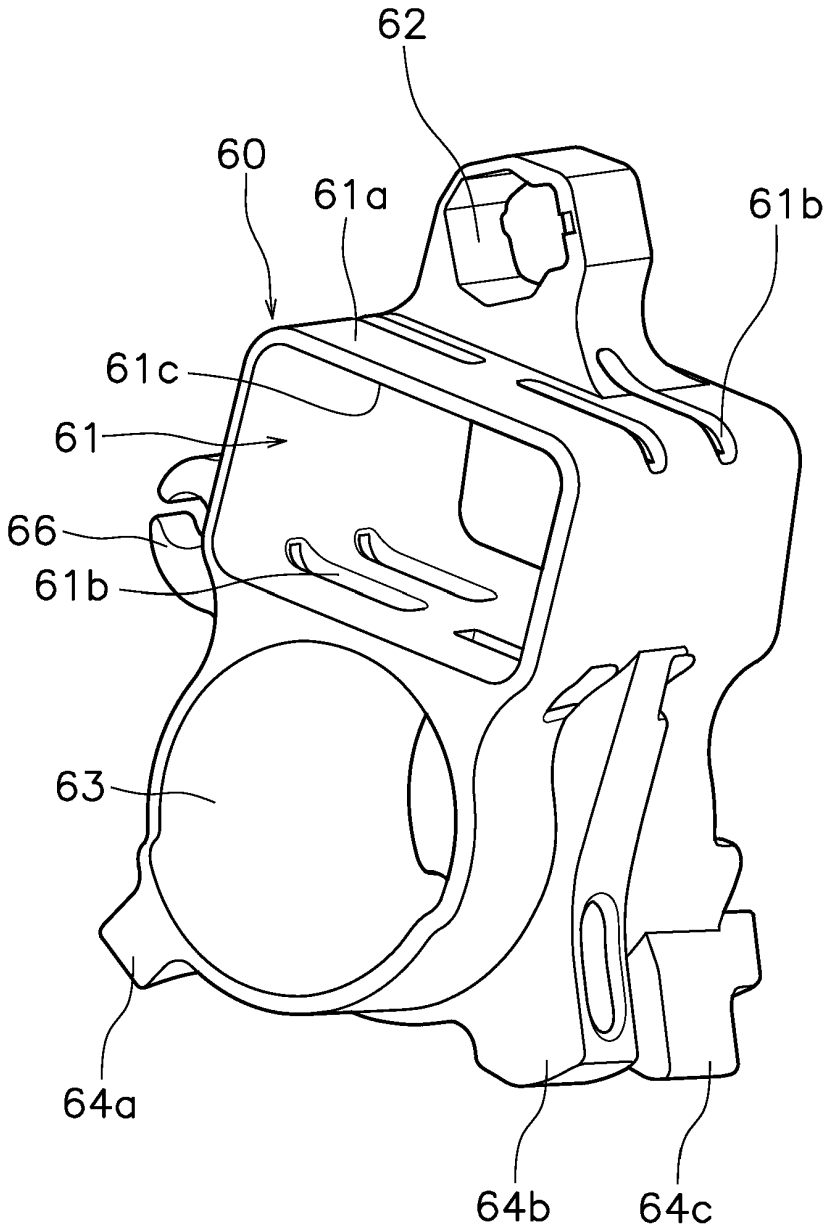

FIG. 9

REFERENCES CITED IN THE DESCRIPTION

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