Appeal decision

Appeal No. 2018-2463

Shizuoka, Japan
Appellant Yamaha Motor Co., Ltd.

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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2016-125511, entitled "Vehicle" (the application published on April 6, 2017, Japanese Unexamined Patent Application Publication No. 2017-65668) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The present application was filed on June 24, 2016 (priority claim: September 30, 2015). Reasons for refusal were notified as of June 23, 2017. A written opinion was submitted on August 29, 2017. An examiner's decision of refusal was issued as of November 3, 2017. An appeal against the examiner's decision of refusal was requested on February 21, 2018.

No. 2 The Invention

It is acknowledged that the inventions according to Claims 1 to 11 of the application are specified by the matters described in Claims 1 to 11 of the scope of claims. The invention according to Claim 1 (hereinafter referred to as "the Invention") is as follows.

"A vehicle including:

a body frame;

a left front wheel and a right front wheel arranged side by side in a lateral direction of the body frame; and

a link mechanism arranged above the left front wheel and the right front wheel, and configured to lean the body frame to left or right of the vehicle by changing positions of the left front wheel and the right front wheel relative to the body frame,

wherein the link mechanism includes an upper cross member, a lower cross member, a left side member, and a right side member,

the upper cross member, the lower cross member, the left side member, and the right side member are connected so that the upper cross member and the lower cross member may be kept parallel to each other and the left side member and the right side member may be kept parallel to each other,

and further including:

a telescopic left shock absorber configured to support the left front wheel and attenuate or absorb displacement of the left front wheel in vertical direction of the body frame with respect to the link mechanism;

a telescopic right shock absorber configured to support the right front wheel and attenuate or absorb displacement of the right front wheel in vertical direction of the body frame with respect to the link mechanism;

a left bracket turnably connected to the left side member;

a right bracket turnably connected to the right side member;

a steering member connected to the body frame so as to be rotated around a steering axis line; and

a steering force transmission mechanism configured to turn the left bracket and the right bracket in a rotation direction of the steering member,

wherein the left shock absorber includes:

a left front outer tube supported by the left bracket;

a left rear outer tube supported by the left bracket behind the left front outer tube in a longitudinal direction of the body frame;

a left front inner tube connected to the left front outer tube and allowed to slide along a left telescopic axis inside the left front outer tube;

a left rear inner tube connected to the left rear outer tube behind the left front inner tube in the longitudinal direction of the body frame and allowed to slide along the left telescopic axis inside the left rear outer tube;

a left axle having one end supported by the left front inner tube and the left rear inner tube and the other end supporting the left front wheel; and

a left connection member which connects the left front outer tube and the left rear outer tube,

the right shock absorber includes:

a right front outer tube supported by the right bracket;

a right rear outer tube supported by the right bracket behind the right front outer tube in the longitudinal direction of the body frame;

a right front inner tube connected to the right front outer tube and allowed to slide along a right telescopic axis inside the right front outer tube;

a right rear inner tube connected to the right rear outer tube behind the right front inner tube in the longitudinal direction of the body frame and allowed to slide along the right telescopic axis inside the right rear outer tube;

a right axle having one end supported by the right front inner tube and the right rear inner tube and the other end supporting the right front wheel; and

a right connection member which connects the right front outer tube and the right rear outer tube."

No. 3 Outline of the examiner's decision

The inventions according to Claims 1 to 11 of the application could have been easily invented by a person ordinarily skilled in the art of the inventions before the priority date of the application, based on inventions described in the following publications distributed, or inventions that were made publicly available through an electric telecommunication line, in Japan or a foreign country, before the priority date of the patent application. Thus, the appellant should not be granted a patent for the inventions under the provisions of Article 29(2) of the Patent Act.

Note

Cited Document 1. International Publication No. WO 2015/002166

Cited Document 2. International Publication No. WO 2014/181736

No. 4 Described matters in the Cited Documents and Inventions described in the Cited Documents

1 Described matters in Cited Document 1

Cited Document 1 cited in the reasons for refusal of the examiner's decision describes the following matters with drawings. The underlines were added by the body. The same applies hereinafter.

(1) "[Claim 1] A vehicle comprising:

a body frame that leans to the right of the vehicle when the vehicle turns right and that leans to the left of the vehicle when the vehicle turns left;

a right front wheel and a left front wheel that are disposed to be aligned in a left-and-right direction of the body frame;

a right suspension device that supports the right front wheel at a lower portion thereof to absorb an upward displacement of the right front wheel in an up-and-down direction of the body frame;

a left suspension device that supports the left front wheel at a lower portion thereof to absorb an upward displacement of the left front wheel in the up-and-down direction of the body frame;

a link mechanism including:

a right side portion that supports an upper portion of the right suspension device so as to allow the upper portion to turn about a right steering axis that extends in the up-and-down direction of the body frame;

a left side portion that supports an upper portion of the left suspension device so as to allow the upper portion to turn about a left steering axis that is parallel to the right steering axis;

an upper cross portion that supports at a right end portion thereof an upper portion of the right side portion so as to allow the upper portion to turn about an upper right axis that extends in a front-and-rear direction of the body frame and supports at a left end portion thereof an upper portion of the left side portion so as to allow the upper portion to turn about an upper left axis that is parallel to the upper right axis and that is supported on the body frame at a middle portion thereof so as to turn about an upper middle axis that is parallel to the upper right axis and the upper left axis; and

a lower cross portion that supports at a right end portion thereof a lower portion of the right side portion so as to allow the lower portion to turn about a lower right axis that is parallel to the upper right axis and supports at a left end portion thereof a lower portion of the left side portion so as to allow the lower portion to turn about a lower left axis that is parallel to the upper left axis and that is supported on the body frame at a middle portion so as to turn about a lower middle axis that is parallel to the upper middle axis;

a body cover that covers at least a portion of the link mechanism;

a steering shaft that is supported on the body frame between the right suspension device and the left suspension device in the left-and-right direction of the body frame that can turn about a middle steering axis that extends in the up-and-down direction of the body frame;

a handlebar that is provided at an upper end portion of the steering shaft;

a wheel turning operation transmission mechanism that turns the right suspension device about the right steering axis and the left suspension device about the left steering axis as the steering shaft turns in response to the operation of the handlebar;

a brake device that is provided below the link mechanism to apply a braking force to at least one of the right front wheel and the left front wheel;

a brake control device that is provided above the link mechanism to control the brake device; and

a brake controlling operation transmission member that connects the brake control device and the brake device together so as to transmit a brake controlling operation that is input to the brake control device to the brake device, wherein

a restricting portion that restricts a movement of the brake controlling operation transmission member is provided at an upper portion of at least one of the upper cross portion, the right side portion, and the left side portion, and wherein

the brake controlling operation transmission member has a leaning-associated deforming portion that is situated between the brake control device and the restricting portion to deform in response to the leaning of the body frame and a wheel-turning-associated deforming portion that is situated between the leaning-associated deforming portion and the brake device to deform in response to the turning of the right front wheel and the left front wheel."

(2) "[0031] As shown in FIG. 1, the vehicle 1 includes a vehicle main body portion 2, a pair of left and right front wheels 3 (refer to FIG. 2), a rear wheel 4, a steering mechanism 7, and a link mechanism 5. The vehicle main body portion 2 includes a body frame 21, a body cover 22, a seat 24 and a power unit 25."

(3) "[0040] The pair of right and left front wheels 3 includes the left front wheel 31 and the right front wheel 32. The left front wheel 31 and the right front wheel 32 are disposed so as to be arranged in a left-and-right direction of the body frame 21. Of the pair of left and right front mudguards 223, a first front mudguard 227 is disposed directly above the left front wheel 31. Of the pair of left and right front mudguards 223, a second front mudguard 228 is disposed directly above the right wheel 32. The left front wheel 31 is supported by the left shock absorber 33. The right front wheel 32 is supported by the right shock absorber 34.

[0041] The left shock absorber 33 (an example of a left suspension device) is a so-called telescopic shock absorber and dampens vibration from a road surface. The left shock absorber 33 supports the left front wheel 31 at a lower portion thereof and absorbs an upward displacement of the left front wheel 31 in the up-and-down direction of the body frame 21. The left shock absorber 33 has a first lower-side portion 33a and a first upper-side portion 33b. The left front wheel 31 is supported on the first lower-

side portion 33a. The first lower-side portion 33a extends in the up-and-down direction, and a left wheel axle 314 is supported on a lower end side of the first lower-side portion 33a. The left wheel axle 314 supports the left front wheel 31. The first upper-side portion 33b is disposed at an upper side of the first lower-side portion 33a in such a state that the first upper-side portion 33b is partially inserted into the first lower-side portion 33a. The first upper-side portion 33b can move relative to the first lower-side portion 33a in a direction in which the first lower-side portion 33a extends. An upper portion of the first upper-side portion 33b is fixed to a first bracket 317.

...

[0043] The first lower-side portion 33a and the first upper-side portion 33b constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together. This configuration restricts the first upper-side portion 33b from turning relative to the first lower-side portion 33a."

(4) "[0044] The right shock absorber 34 (an example of a right suspension device) is a so-called telescopic shock absorber and dampens vibration from a road surface. The right shock absorber 34 supports the right front wheel 32 at a lower portion thereof and absorbs an upward displacement of the right front wheel 32 in the up-and-down direction of the body frame 21. The right shock absorber 34 has a second lower-side portion 34a and a second upper-side portion 34b. The right front wheel 32 is supported on the second lower-side portion 34a. The second lower-side portion 34a extends in the up-and-down direction, and a right wheel axle 324 is supported on a lower end side of the second lower-side portion 34a. The right wheel axle 324 supports the right front wheel 32. The second upper-side portion 34b is disposed at an upper side of the second lower-side portion 34a in such a state that the second upper-side portion 34b is partially inserted into the second lower-side portion 34a. The second upper-side portion 34b can move relative to the second lower-side portion 34a in a direction in which the second lower-side portion 34a extends. An upper portion of the second upper-side portion 34b is fixed to a second bracket 327.

[0045] The second lower-side portion 34a and the second upper-side portion 34b constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together. This configuration restricts the second upper-side portion 34b from turning relative to the second lower-side portion 34a."

(5) "[0046] The wheel turning operation transmission mechanism 6 is disposed above the left front wheel 31 and the right front wheel 32. The wheel turning operation

transmission mechanism 6 includes a steering member 28 as a member by which the rider inputs steering effort or a steering force. The steering member 28 has the steering shaft 60 and a handlebar 23 that is provided at an upper end portion of the steering shaft 60.

The steering shaft 60 is supported on the head pipe 211 between the left shock absorber 33 and the right shock absorber 34 in the left-and-right direction of the body frame 21. Additionally, the steering shaft 60 can turn about a middle steering axis Y3 that extends in the up-and-down direction of the body frame 21. The steering shaft 60 is disposed so that the steering shaft 60 is partially inserted into the head pipe 211 and extends substantially in the up-and-down direction. The steering shaft 60 can be turned relative to the head pipe 211. The steering shaft 60 is turned in association with the rider turning the handlebar 23.

The wheel turning operation transmission mechanism 6 turns the left shock absorber 33 about a left steering axis Y1 that extends in the up-and-down direction and turns the right shock absorber 34 about a right steering axis Y2 that is parallel to the left steering axis Y1 in association with the turning of the steering shaft 60 which is triggered in response to the operation of the handlebar 23.

[0047] The wheel turning operation transmission mechanism 6 has, in addition to the steering member 28, a first transmission plate 61, a second transmission plate 62, a third transmission plate 63, a first joint 64, a second joint 65, a third joint 66, a tie rod 67, the first bracket 317, and the second bracket 327. The wheel turning operation transmission mechanism 6 transmits a steering force with which the handlebar 23 is controlled by the rider to the first bracket 317 and the second bracket 327 via those constituent members.

...

[0053] The wheel turning operation transmission mechanism 6 that is configured in the way described above transmits a steering force transmitted from the steering member 28 to the tie rod 67 via the first transmission plate 61 and the first joint 64. This causes the tie rod 67 to be displaced either leftwards or rightwards. The steering force transmitted to the tie rod 67 is transmitted from the tie rod 67 to the first bracket 317 by way of the second transmission plate 62 and the second joint 65 and is also transmitted from the tie rod 67 to the second bracket 327 by way of the third transmission plate 63 and the third joint 66. As a result, the first bracket 317 and the second bracket 327 are turned in the direction in which the tie rod 67 is displaced."

(6) "[0054] <Link Mechanism>

In this embodiment, the link mechanism 5 adopts a four-joint parallel link system (also, called a parallelogram link).

The link mechanism 5 is disposed below the handlebar 23. The link mechanism 5 is connected to the headstock 211 of the body frame 21. The link mechanism 5 includes an upper cross portion 51, a lower cross portion 52, the left side portion 53, and the right side portion 54 as a configuration which enables the vehicle 1 to lean. Additionally, the link mechanism 5 includes the first bracket 317 and the left shock absorber 33 as a configuration that is connected to a lower portion of the left side portion 53 so as to lean together with the left side portion 53. Further, the link mechanism 5 includes the second bracket 327 and the right shock absorber 34 as a configuration that is connected to a lower portion of the right side portion 54 so as to lean together with the right side portion 54.

[0055] The right side portion 54 supports an upper portion of the right shock absorber 34 so as to turn about a right steering axis Y2 that extends in the up-and-down direction of the body frame 21. The left side portion 53 supports an upper portion of the left shock absorber 33 so as to turn about a left steering axis Y1 that is parallel to the right steering axis Y2.

The upper cross portion 51 supports the upper portion of the right side portion 54 at the right end portion thereof so as to turn around an upper right axis E extending in the front-and-rear direction of the body frame 21, supports the upper portion of the left side portion 53 at the left end portion thereof so as to turn around an upper left axis D which is parallel to the upper right axis E, and the middle portion thereof is supported on the body frame 21 so as to turn around an upper middle axis C which is parallel to the upper right axis E and the upper left axis D.

The lower cross portion 52 supports the lower portion of the right side portion 54 at the right end portion thereof so as to turn around a lower right axis H which is parallel to the upper right axis E, supports the lower portion of the left side portion 53 at the left end portion thereof so as to turn around a lower left axis G which is parallel to the upper left axis E, and the middle portion thereof is supported on the body frame 21 so as to turn around a lower middle axis F which is parallel to the upper middle axis C.

...

[0059] The left side portion 53 is disposed directly on the left of the head pipe 211 and extends parallel to the direction in which the head pipe 211 extends. The left side portion 53 is disposed directly above the left front wheel 31 and above the left shock absorber 33. The left side portion 53 is connected to the first bracket 317 at the lower portion thereof and is attached to the first bracket 317 so as to turn about the left

steering axis Y1. This left side portion 53 supports an upper portion of the left shock absorber 33 so as to turn about the left steering axis Y1.

[0060] The right side portion 54 is disposed directly on the right of the head pipe 211 and extends in the direction in which the headstock 211 extends. The right side portion 54 is disposed directly above the right front wheel 32 and above the right shock absorber 34. The right side portion 54 is connected to the second bracket 327 at the lower portion thereof and is attached to the second bracket 327 so as to turn about the right steering axis Y2. This right side portion 54 supports an upper portion of the right shock absorber 34 so as to turn about the right steering axis Y2."

2 The invention described in Cited Document 1

According to the described matters in 1 and the descriptions in [FIG. 1] to [FIG. 6], it is acknowledged that Cited Document 1 describes the following invention (hereinafter referred to as "Cited Invention").

"A vehicle 1 comprising:

a body frame 21 that leans to the right of the vehicle 1 when the vehicle turns right and that leans to the left of the vehicle 1 when the vehicle turns left;

a right front wheel 32 and a left front wheel 31 that are disposed to be aligned in a left-and-right direction of the body frame 21;

a telescopic right shock absorber 34 that supports the right front wheel 32 at a lower portion thereof to absorb an upward displacement of the right front wheel 32 in an up-and-down direction of the body frame 21;

a telescopic left shock absorber 33 that supports the left front wheel 31 at a lower portion thereof to absorb an upward displacement of the left front wheel 31 in the up-and-down direction of the body frame 21;

a link mechanism 5 including:

a right side portion 54 that supports an upper portion of the right shock absorber 34 so as to allow the upper portion to turn about a right steering axis Y2 that extends in the up-and-down direction of the body frame 21;

a left side portion 53 that supports an upper portion of the left shock absorber 33 so as to allow the upper portion to turn about a left steering axis Y1 that is parallel to the right steering axis Y2;

an upper cross portion 51 that supports at a right end portion thereof an upper portion of the right side portion 54 so as to allow the upper portion to turn about an upper right axis E that extends in a front-and-rear direction of the body frame 21 and supports at a left end portion thereof an upper portion of the left side portion 53 so as to

allow the upper portion to turn about an upper left axis D that is parallel to the upper right axis E and that is supported on the body frame 21 at a middle portion thereof so as to turn about an upper middle axis C that is parallel to the upper right axis E and the upper left axis D; and

a lower cross portion 52 that supports at a right end portion thereof a lower portion of the right side portion 54 so as to allow the lower portion to turn about a lower right axis H that is parallel to the upper right axis E and supports at a left end portion thereof a lower portion of the left side portion 53 so as to allow the lower portion to turn about a lower left axis G that is parallel to the upper left axis D and that is supported on the body frame 21 at a middle portion so as to turn about a lower middle axis F that is parallel to the upper middle axis C;

a steering shaft 60 that is supported on the body frame 21 between the right shock absorber 34 and the left shock absorber 33 in the left-and-right direction of the body frame 21 that can turn about a middle steering axis Y3 that extends in the up-and-down direction of the body frame 21;

a handlebar 23 that is provided at an upper end portion of the steering shaft 60; and

a wheel turning operation transmission mechanism 6 that turns the right shock absorber 34 about the right steering axis Y2 and the left shock absorber 33 about the left steering axis Y1 as the steering shaft 60 turns in response to the operation of the handlebar 23, wherein

the left side portion 53 is connected to a first bracket 317 at the lower portion thereof and is attached to the first bracket 317 so as to turn about the left steering axis Y1,

the right side portion 54 is connected to the second bracket 327 at the lower portion thereof and is attached to the second bracket 327 so as to turn about the right steering axis Y2,

to transmit a steering force with which the handlebar 23 is controlled by the rider to the first bracket 317 and the second bracket 327,

wherein the left side portion 53 supports an upper portion of the left shock absorber 33 so as to turn about the left steering axis Y1,

the left shock absorber 33 has a first lower-side portion 33a and a first upper-side portion 33b, the first lower-side portion 33a extends in the up-and-down direction, and a left wheel axle 314 is supported on a lower end side of the first lower-side portion 33a, the left wheel axle 314 supports the left front wheel 31, the first upper-side portion 33b is disposed at an upper side of the first lower-side portion 33a in such a state that the

first upper-side portion 33b is partially inserted into the first lower-side portion 33a, the first upper-side portion 33b can move relative to the first lower-side portion 33a in a direction in which the first lower-side portion 33a extends, an upper portion of the first upper-side portion 33b is fixed to a first bracket 317,

the first lower-side portion 33a and the first upper-side portion 33b constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together,

the right side portion 54 supports an upper portion of the right shock absorber 34 so as to turn about the right steering axis Y2,

the right shock absorber 34 has a second lower-side portion 34a and a second upper-side portion 34b, the second lower-side portion 34a extends in the up-and-down direction, and a right wheel axle 324 is supported on a lower end side of the second lower-side portion 34a, the right wheel axle 324 supports the right front wheel 32, the second upper-side portion 34b is disposed at an upper side of the second lower-side portion 34a in such a state that the second upper-side portion 34b is partially inserted into the second lower-side portion 34a, the second upper-side portion 34b can move relative to the second lower-side portion 34a in a direction in which the second lower-side portion 34a extends, an upper portion of the second upper-side portion 34b is fixed to a second bracket 327,

the second lower-side portion 34a and the second upper-side portion 34b constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together."

3 Described matters in Cited Document 2

Cited Document 2 cited in the reasons for refusal of the examiner's decision describes the following matters with drawings.

(1) "[0009] As illustrated in Fig. 1, the suspension device according to this embodiment is interposed between a vehicle body, not shown, and a front wheel (wheel) W (Fig. 2). The suspension device includes a vehicle-body side connection member 1 connected to a vehicle body side and a pair of front and rear telescopic tube members 2 and 3 connected by the vehicle-body side connection member 1, and the front wheel (wheel) W is supported by these tube members 2 and 3 from one side. The vehicle-body side connection member 1 includes a body portion 4 fixed in a state on which a steering pipe 9 stands, arc-shaped support grooves 5 and 6 formed on front and rear side surfaces of the body portion 4, respectively, in a longitudinal direction of the vehicle body, and pressing mechanisms 7 and 8 respectively pressing the tube members 2 and 3 inserted

into the support grooves 5 and 6 toward deepest portions 5a and 6a which these support grooves 5 and 6 are the closest.
[0010] The suspension device is used in a saddle type vehicle of a two-front-wheels type, and as illustrated in Fig. 2, it includes right and left leg portions (only one leg portion S is illustrated, while the other is not shown) supporting right and left front wheels (only one front wheel W is illustrated, while the other front wheel is not illustrated) in a cantilever manner. The present invention is applied to one or both of the leg portions, but one of the leg portions will be explained in the following. The suspension device according to this embodiment may be used in other vehicles and may be used for a front fork of a one-leg type supporting a front wheel of a bicycle in a cantilever manner, for example."

(2) "[0012] The front and rear tube members 2 and 3 are of a telescopic type having outer tubes 20 and 30 connected to a wheel side and inner tubes 21 and 31 connected to the vehicle body side and going into/out of the outer tubes 20 and 30. ... In this embodiment, the outer tubes 20 and 30 are connected to the wheel side and the inner tubes 21 and 31 are connected to the vehicle body side, but it may be so configured that the outer tubes 20 and 30 are connected to the vehicle body side and the inner tubes 21 and 31 are connected to the wheel side. ...
[0013] In the front and rear outer tubes 20 and 30, pairs of upper and lower connecting bosses 22, 23, 32, and 33 extending toward the other outer tube are provided. By fastening the connecting bosses 22 and 23 of the front outer tube 20 and the connecting bosses 32 and 33 of the rear outer tube 30 by bolts B1 and B2, the front and rear tube members 2 and 3 stand in parallel. In the front and rear outer tubes 20 and 30, connecting pieces 24 and 34 for fixing the front and rear outer tubes 20 and 30 so that the tube members 2 and 3 are juxtaposed in the longitudinal direction of the front wheel W are provided. On a lower end portion of the rear outer tube 30, a connecting portion 35 connected to an axle of the front wheel W is provided."

No. 5 Comparison

The Invention and the Cited Invention are compared below.
(1) The "vehicle 1" in the Cited Invention corresponds to the "vehicle" in the Invention. In the same way, the "body frame 21" corresponds to the "body frame". The "left front wheel 31" corresponds to the "left front wheel". The "right front wheel 32" corresponds to the "right front wheel". The "link mechanism 5" corresponds to the "link mechanism". The "upper cross portion 51" corresponds to the "upper cross

member". The "lower cross portion 52" corresponds to the "lower cross member". The "left side portion 53" corresponds to the "left side member". The "right side portion 54" corresponds to the "right side member". The "left shock absorber 33" corresponds to the "left shock absorber". The "right shock absorber 34" corresponds to the "right shock absorber". The "first bracket 317" corresponds to the "left bracket". The "second bracket 327" corresponds to the "right bracket". The "steering shaft 60" and the "handlebar 23" correspond to the "steering member". The "wheel turning operation transmission mechanism 6" corresponds to the "steering force transmission mechanism". The "left wheel axle 314" corresponds to the "left axle". The "right wheel axle 324" corresponds to the "right axle".

(2) According to (1), it can be said that the following description in the Cited Invention,

"A vehicle 1 comprising:

a body frame 21 that leans to the right of the vehicle 1 when the vehicle turns right and that leans to the left of the vehicle 1 when the vehicle turns left;

a right front wheel 32 and a left front wheel 31 that are disposed to be aligned in a left-and-right direction of the body frame 21;

a telescopic right shock absorber 34 that supports the right front wheel 32 at a lower portion thereof to absorb an upward displacement of the right front wheel 32 in an up-and-down direction of the body frame 21;

a telescopic left shock absorber 33 that supports the left front wheel 31 at a lower portion thereof to absorb an upward displacement of the left front wheel 31 in the up-and-down direction of the body frame 21;

a link mechanism 5 including:

a right side portion 54 that supports an upper portion of the right shock absorber 34 so as to allow the upper portion to turn about a right steering axis Y2 that extends in the up-and-down direction of the body frame 21;

a left side portion 53 that supports an upper portion of the left shock absorber 33 so as to allow the upper portion to turn about a left steering axis Y1 that is parallel to the right steering axis Y2;

an upper cross portion 51 that supports at a right end portion thereof an upper portion of the right side portion 54 so as to allow the upper portion to turn about an upper right axis E that extends in a front-and-rear direction of the body frame 21 and supports at a left end portion thereof an upper portion of the left side portion 53 so as to allow the upper portion to turn about an upper left axis D that is parallel to the upper right axis E and that is supported on the body frame 21 at a middle portion thereof so as

to turn about an upper middle axis C that is parallel to the upper right axis E and the upper left axis D; and

a lower cross portion 52 that supports at a right end portion thereof a lower portion of the right side portion 54 so as to allow the lower portion to turn about a lower right axis H that is parallel to the upper right axis E and supports at a left end portion thereof a lower portion of the left side portion 53 so as to allow the lower portion to turn about a lower left axis G that is parallel to the upper left axis D and that is supported on the body frame 21 at a middle portion so as to turn about a lower middle axis F that is parallel to the upper middle axis C;

a steering shaft 60 that is supported on the body frame 21 between the right shock absorber 34 and the left shock absorber 33 in the left-and-right direction of the body frame 21 that can turn about a middle steering axis Y3 that extends in the up-and-down direction of the body frame 21;

a handlebar 23 that is provided at an upper end portion of the steering shaft 60; and

a wheel turning operation transmission mechanism 6 that turns the right shock absorber 34 about the right steering axis Y2 and the left shock absorber 33 about the left steering axis Y1 as the steering shaft 60 turns in response to the operation of the handlebar 23, wherein

the left side portion 53 is connected to the first bracket 317 at the lower portion thereof and is attached to the first bracket 317 so as to turn about the left steering axis Y1,

the right side portion 54 is connected to the second bracket 327 at the lower portion thereof and is attached to the second bracket 327 so as to turn about the right steering axis Y2,

to transmit a steering force with which the handlebar 23 is controlled by the rider to the first bracket 317 and the second bracket 327",

corresponds to the following description in the Invention,

"A vehicle including:

a body frame;

a left front wheel and a right front wheel arranged side by side in a lateral direction of the body frame; and

a link mechanism arranged above the left front wheel and the right front wheel, and configured to lean the body frame to left or right of the vehicle by changing positions of the left front wheel and the right front wheel relative to the body frame,

wherein the link mechanism includes an upper cross member, a lower cross member, a left side member, and a right side member,

the upper cross member, the lower cross member, the left side member, and the right side member are connected so that the upper cross member and the lower cross member may be kept parallel to each other and the left side member and the right side member may be kept parallel to each other,

and further including:

a telescopic left shock absorber configured to support the left front wheel and attenuate or absorb displacement of the left front wheel in vertical direction of the body frame with respect to the link mechanism;

a telescopic right shock absorber configured to support the right front wheel and attenuate or absorb displacement of the right front wheel in vertical direction of the body frame with respect to the link mechanism;

a left bracket turnably connected to the left side member;

a right bracket turnably connected to the right side member;

a steering member connected to the body frame so as to be rotated around a steering axis line; and

a steering force transmission mechanism configured to turn the left bracket and the right bracket in rotation direction of the steering member".

(3) The "first upper-side portion 33b" of the "left shock absorber 33" in the Cited Invention, which is "partially inserted into the first lower-side portion 33a", is considered as an inner tube. In the same way, the first lower-side portion 33a" is considered as an outer tube. Since "the first lower-side portion 33a and the first upper-side portion 33b constitute two telescopic elements that are aligned parallel in the front-and-rear direction", they are formed of a left front one and a left rear one, obviously.

The same applies to the "right shock absorber 34" in the Cited Invention.

(4) In light of the above, the corresponding feature and different feature between the Invention and the Cited Invention are acknowledged as follows.

[Corresponding Feature]

"A vehicle including:

a body frame;

a left front wheel and a right front wheel arranged side by side in a lateral direction of the body frame; and

a link mechanism arranged above the left front wheel and the right front wheel, and configured to lean the body frame to left or right of the vehicle by changing positions of the left front wheel and the right front wheel relative to the body frame,

wherein the link mechanism includes an upper cross member, a lower cross member, a left side member, and a right side member,

the upper cross member, the lower cross member, the left side member, and the right side member are connected so that the upper cross member and the lower cross member may be kept parallel to each other and the left side member and the right side member may be kept parallel to each other,

and further including:

a telescopic left shock absorber configured to support the left front wheel and attenuate or absorb displacement of the left front wheel in vertical direction of the body frame with respect to the link mechanism;

a telescopic right shock absorber configured to support the right front wheel and attenuate or absorb displacement of the right front wheel in vertical direction of the body frame with respect to the link mechanism;

a left bracket turnably connected to the left side member;

a right bracket turnably connected to the right side member;

a steering member connected to the body frame so as to be rotated around a steering axis line; and

a steering force transmission mechanism configured to turn the left bracket and the right bracket in the rotation direction of the steering member"

[Different Feature]

Regarding the "left shock absorber" and the "right shock absorber" in the Invention,

"the left shock absorber includes:

a left front outer tube supported by the left bracket;

a left rear outer tube supported by the left bracket behind the left front outer tube in a longitudinal direction of the body frame;

a left front inner tube connected to the left front outer tube and allowed to slide along a left telescopic axis inside the left front outer tube;

a left rear inner tube connected to the left rear outer tube behind the left front inner tube in the longitudinal direction of the body frame and allowed to slide along the left telescopic axis inside the left rear outer tube;

a left axle having one end supported by the left front inner tube and the left rear inner tube and the other end supporting the left front wheel; and

a left connection member which connects the left front outer tube and the left rear outer tube,

the right shock absorber includes:

a right front outer tube supported by the right bracket;

a right rear outer tube supported by the right bracket behind the right front outer tube in the longitudinal direction of the body frame;

a right front inner tube connected to the right front outer tube and allowed to slide along a right telescopic axis inside the right front outer tube;

a right rear inner tube connected to the right rear outer tube behind the right front inner tube in the longitudinal direction of the body frame and allowed to slide along the right telescopic axis inside the right rear outer tube,

a right axle having one end supported by the right front inner tube and the right rear inner tube and the other end supports the right front wheel; and

a right connection member which connects the right front outer tube and the right rear outer tube".

Regarding the "left shock absorber 33" and the "right shock absorber 34"in the Cited Invention (correspond to "the left shock absorber" and "the right shock absorber" in the Invention),

"the left side portion 53 supports an upper portion of the left shock absorber 33 so as to turn about the left steering axis Y1,

the left shock absorber 33 has a first lower-side portion 33a and a first upper-side portion 33b, the first lower-side portion 33a extends in the up-and-down direction, and a left wheel axle 314 is supported on a lower end side of the first lower-side portion 33a, the left wheel axle 314 supports the left front wheel 31, the first upper-side portion 33b is disposed at an upper side of the first lower-side portion 33a in such a state that the first upper-side portion 33b is partially inserted into the first lower-side portion 33a, the first upper-side portion 33b can move relative to the first lower-side portion 33a in a direction in which the first lower-side portion 33a extends, an upper portion of the first upper-side portion 33b is fixed to a first bracket 317,

the first lower-side portion 33a and the first upper-side portion 33b constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together,

the right side portion 54 supports an upper portion of the right shock absorber 34 so as to turn about the right steering axis Y2,

the right shock absorber 34 has a second lower-side portion 34a and a second upper-side portion 34b, the second lower-side portion 34a extends in the up-and-down direction, and a right wheel axle 324 is supported on a lower end side of the second lower-side portion 34a, the right wheel axle 324 supports the right front wheel 32, the second upper-side portion 34b is disposed at an upper side of the second lower-side portion 34a in such a state that the second upper-side portion 34b is partially inserted into the second lower-side portion 34a, the second upper-side portion 34b can move relative to the second lower-side portion 34a in a direction in which the second lower-side portion 34a extends, an upper portion of the second upper-side portion 34b is fixed to a second bracket 327,

the second lower-side portion 34a and the second upper-side portion 34b constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together".

The arrangements of the following outer tubes and inner tubes in the Cited Invention are opposite to the Invention's ones, regarding support on the vehicle body side and wheel side: the left front "first lower-side portion 33a" (left front outer tube) and the left front "first upper-side portion 33b" (left front inner tube), the left rear "first lower-side portion 33a" (left rear outer tube) and the left rear "first upper-side portion 33b" (left rear inner tube), the right front "second lower-side portion 34a" (right front outer tube) and the right front "second upper-side portion 34b" (right front inner tube), and the right rear "second lower-side portion 34a" (right rear outer tube) and the right rear "second upper-side portion 34b" (left rear inner tube). And, in the Cited Invention, the "first lower-side portion 33a and first upper-side portion 33b" and the "second lower-side portion 34a and second upper-side portion 34b" "constitute two telescopic elements that are aligned parallel in the front-and-rear direction and are connected together", but they are not specified with a connection member.

No. 6 Judgment

The above-mentioned Different Feature is examined.

1 According to the description in [0012] in "No. 4 3 (2)", "it may be so configured that the outer tubes 20 and 30 are connected to the vehicle body side and the inner tubes 21 and 31 are connected to the wheel side", it can be said that Cited Document 2 substantially discloses also a vehicle having the outer tubes 20, 30 and the inner tubes 21, 31 whose arrangement on the body side and the wheel side is opposite to the one shown in [FIG. 2]. There is no direct description about configuration of the connecting portion 35 connected to an axle of the front wheel W with respect to the

inner tubes 21, 31. However, it is technical common sense that an inner tube must be thinner and more rigid than an outer tube and that an axle is configured to be supported by a member for connecting front and rear tubes in shock absorbers of left and right front wheels of a vehicle (for example, see [FIG. 2b] and [FIG. 3] of Japanese Unexamined Patent Application Publication No. 2008-168893). Thus, in the vehicle having the outer tubes 20, 30 and the inner tubes 21, 31 whose relations on the body side and the wheel side are opposite, it is natural to understand that a member for connecting the inner tubes 21, 31 is provided as a connecting portion for supporting an axle.

Accordingly, it can be said that Cited Document 2 describes the following technical matter from the described matters in "No. 4 3" and the description of [FIG. 2]. The symbols are used for convenience.

"A suspension device in a saddle type vehicle of a two-front-wheels type comprising

a vehicle-body side connection member 1 connected to a vehicle body side, and a pair of front and rear telescopic tube members 2 and 3 connected by the vehicle-body side connection member 1, wherein a front wheel (wheel) W is supported by these tube members 2 and 3 from one side,

the front and rear tube members 2 and 3 are of a telescopic type having outer tubes 20 and 30 connected to a vehicle body side and inner tubes 21 and 31 connected to a wheel side and going into/out of the outer tubes 20 and 30,

in the front and rear outer tubes 20 and 30, pairs of upper and lower connecting bosses 22, 23, 32, and 33 extending toward the other outer tube are provided, by fastening the connecting bosses 22 and 23 of the front outer tube 20 and the connecting bosses 32 and 33 of the rear outer tube 30 by bolts B1 and B2, the front and rear tube members 2 and 3 stand in parallel,

a member for connecting the inner tubes 21, 31 is provided as a connection member for supporting an axle".

The "connecting bosses 22, 23", "connecting bosses 32, 33", and "bolts B1, B2" of the technical matter in Cited Document 2 above, which are obviously located on each side of the vehicle, connect the "outer tubes 20, 30", and correspond to the "left connection member" and "right connection member" in the Invention.

The technical matter described in Cited Document 2, "a member for connecting the inner tubes 21, 31 is provided as a connecting portion for supporting an axle", obviously corresponds to the matters in the Invention, "a left axle having one end supported by the left front inner tube and the left rear inner tube and the other end

supporting the left front wheel" and "a right axle having one end supported by the right front inner tube and the right rear inner tube and the other end supporting the right front wheel."

The Cited Invention and the technical matter described in Cited Document 2, which are technologies on a vehicle having telescopic left and right shock absorbers, belong to the same technical field. Cited Document 2 describes that the outer tubes 20, 30 can be arranged on the vehicle side or the wheel side, and the inner tubes 21, 31 can be arranged on the wheel side or the vehicle side. The arrangement of the outer tubes and the inner tubes is only a design matter. A person skilled in the art could have easily conceived of applying the technical matter described in Cited Document 2 to the Cited Invention and including the matters specifying the invention of the Invention relating to the Different Feature.

The technical matter described in Cited Document 2 indicates that "in the front and rear outer tubes 20 and 30, pairs of upper and lower connecting bosses 22, 23, 32, and 33 extending toward the other outer tube are provided, by fastening the connecting bosses 22 and 23 of the front outer tube 20 and the connecting bosses 32 and 33 of the rear outer tube 30 by bolts B1 and B2, the front and rear tube members 2 and 3 stand in parallel". Therefore, it is obvious, from the configuration thereof, that rigidity of the shock absorber can be improved, and that torsion caused by a load input from a road surface can be suppressed. A person skilled in the art can sufficiently predict that the influence on toe angle and camber angle can be suppressed when torsion is suppressed, accordingly. Even the functions and effects to be produced by the Invention may fall within the scope which can be predicted from the Cited Invention and the technical matter described in Cited Document 2.

Therefore, the invention could have been easily invented by a person skilled in the art based on the Cited Invention and the technical matter described in Cited Document 2.

2 The appellant alleges in the written appeal "3. (3-2)", regarding the technical matter described in Cited Document 2, that "In Cited Invention 2, one end of the left axle supporting the left front wheel W is supported only by the left rear outer tube 30 (paragraph 0013). Specifically, one end of the left axle supporting the left front wheel W is supported only by a portion extended downward from connection members (connecting bosses 23, 33, bolt B2) in the left rear outer tube 30. Thus, the left axle (connecting portion 35) is not supported by the left front outer tube 20. Cited Invention 2 mentions that the outer tube and the inner tube may be arranged opposite

(paragraph 0012), however, even if such modification is applied, the requirement J that the left axle is supported by front and rear inner tubes cannot be satisfied".

The findings of the technical matter described in Cited Document 2 are as described in 1. The appellant's allegation is examined below.

The appellant's allegation seems to indicate that the "connecting portion 35" is not configured to be directly arranged in both the "inner tube 21" and the "inner tube 31".

However, regarding "support" (the definition of the word is "to hold something, or to hold and keep it in place" (Kojien 6th edition published by Iwanami Shoten)), Claim 1 of the present application includes the following descriptions, "a left axle having one end supported by the left front inner tube and the left rear inner tube and the other end supporting the left front wheel", and "a right axle having one end supported by the right front inner tube and the right rear inner tube and the other end supporting the right front wheel", and it doesn't specify concrete configuration of the "supporting" member. Thus, the allegation is not based on the description in Claim 1, and the appellant's allegation cannot be accepted.

Even if, as mentioned by the appellant, the connecting portion 35 is arranged only in the inner tube 31, the tube member 2 cannot function unless the inner tube 21 is configured to transmit power. Thus, it is entirely natural that a member for connecting the inner tube 21 and the inner tube 31 is required (in [FIG. 2] of the Cited Document 2, one end of the "axle" is supported by the "outer tube 30" via the "connecting portion 35", and is also supported by the "outer tube 20" via the "connecting bosses 22, 23", "connecting bosses 32, 33", and "bolts B1, B2).

In such case, it can be said that one end of the "axle" is "supported" by the "inner tube 21" and the "inner tube 31".

Therefore, even in such case, the Invention could have been easily invented by a person skilled in the art based on the Cited Invention and the technical matter described in Cited Document 2.

No. 7 Closing

As described above, the Invention could have been easily invented by a person skilled in the art based on the Cited Invention and the technical matter described in Cited Document 2. The appellant should not be granted a patent under the provisions of Article 29(2) of the Patent Act.

Thus, the present application should be rejected without examining other claims.

Therefore, the appeal decision shall be made as described in the conclusion.

April 15, 2019

Chief administrative judge: SHIMADA, Shinichi
Administrative judge: ICHINOSE, Satoru
Administrative judge: UJIHARA, Yasuhiro