Trial decision

Invalidation No. 2014-800029

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The case of trial regarding the invalidation of Japanese Patent No. 4509156, entitled "marine vessel" between the parties above has resulted in the following trial decision.

Conclusion

The correction shall be approved as request.

The demand for trial of the case was groundless.

The costs in connection with the trial shall be borne by the Demandant.

Reason

No. 1 History of the procedures

History of the application as to the invention according to claims 1 to 6 of Japanese Patent No. 4509156 (hereinafter, referred to as "Patent of the case") and history of cases of invalidation trial other than the invalidation trial of the case is as follows.

Sep. 13, 2007	Patent application
May 14, 2010	Registration (Japanese Patent No. 4509156)
Dec. 6, 2011	Invalidation trial (Invalidation No. 2011-800251)
Dec. 22, 2011	Invalidation trial (Invalidation No. 2011-800262)
Apr. 10, 2012	Written correction request
Oct. 26, 2012	Trial decision (Invalidation No. 2011-800251)
Nov. 5, 2012	Trial decision (Invalidation No. 2011-800262)
Sep. 10, 2013	Court decision of revocation of the trial decision (Invalidation No. 2011-800251)
Sep. 10, 2013	Court decision of revocation of the trial decision (Invalidation No. 2011-800262)
May 2, 2014	Trial decision (Invalidation No. 2011-800262)
May 7, 2014	Appeal decision (Invalidation No. 2011-800251)

Jun. 13, 2014 Conclusive and final trial decision (Invalidation No. 2011-800251)
Jun. 13, 2014 Conclusive and final trial decision (Invalidation No. 2011-800262)

The patent invalidation trial of the case was made against the Patent of the case of the Demandee Mitsubishi Heavy Industries, Ltd. and one other (hereinafter, referred to as "the Demandee") by the demandant Japan Marine United Corporation and 20 others (hereinafter, referred to as "Demandant"), and the history of the procedures of that is as follows.

Feb. 24, 2014 Demand for invalidation trial
May 13, 2014 Written reply and written correction request
Jun. 25, 2014 Written amendment (formality amendment of the above written correction request)
Sep. 29, 2014 Written refutation
Nov. 6, 2014 Written request for inspection
Nov. 20, 2014 Oral proceedings statement brief (Demandee)
Dec. 4, 2014 Oral proceedings statement brief (Demandant)
Dec. 18, 2014 Oral proceedings
Jan. 23, 2015 Advance notice of a Trial decision
Mar. 30, 2015 Written request for correction, written statement
Apr. 8, 2015 Written amendment
May 20, 2015 Written refutation
Jun. 9, 2015 Notice of reasons for refusal for correction
Jul. 13, 2015 Written opinion

No. 2 Request for correction
1 Detail of correction

The object of the correction demanded on Mar. 30, 2015 by the Demandee (hereinafter, referred to as "Correction of the case") is to request correction of the description, the scope of claims and the drawings of the Patent of the case to the corrected description, the corrected scope of claims and the corrected drawings affixed to the Written correction request for each claim or for each group of claims, and the details of the correction are as follows.

Here, under-lined portions indicate corrected portions.

(1) Correction 1

To correct

"[Claim 1]

A marine vessel comprising a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake or at a time of water discharge of ballast water to remove or destroy microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied,

wherein said ballast water treatment apparatus to which ballast water is supplied is arranged in a steering room in a vessel rear, and

wherein said steering room is located above a waterline." stated in claim 1 of the scope of claims of the Patent of the case to

"[Claim 1]

A marine vessel comprising: a ballast tank configured to perform posture control and stability securement of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water, said ballast pump being installed in an engine room,

wherein said ballast water treatment apparatus is coupled to said ballast water plumbing configured to supply ballast water taken in from said water intake port to said ballast tank, via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework,

wherein an on-off valve is disposed in each of said treatment-apparatus-inlet-side pipework and said treatment-apparatus-outlet-side pipework, and said on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge,

wherein an on-off valve is also disposed in said ballast water plumbing between a connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing and a connecting point between said treatment-apparatus-outlet-side pipework and said ballast water plumbing, and said on-off valve is made to be closed at a time of water intake and at a time of water discharge,

wherein, in said ballast water plumbing, a check valve is disposed in a lower reach of said ballast pump and in an upper reach of said connecting point between said

treatment-apparatus-inlet-side pipework and said ballast water plumbing, said check valve only allowing a flow in a direction toward said ballast water treatment apparatus from said ballast pump,

wherein said ballast water treatment apparatus to which ballast water is supplied is arranged in a steering room in a vessel rear, and

wherein said steering room is configured, by being located above a waterline, to be able to discharge ballast water outboard in case of emergency."

(2) Correction 2

To correct

"[0008]

In the present invention, the following means is adopted to solve the above problem.

A marine vessel according to claim 1 of the present invention is a marine vessel including a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake or at a time of water discharge of ballast water to remove or destroy the microorganisms and the like, to the ballast water treatment apparatus ballast water being supplied, wherein the ballast water treatment apparatus to which ballast water is supplied is arranged in a steering room in a rear side of the marine vessel, and wherein the steering room is located above a waterline." in paragraph [0008] of the description of the Patent of the case to

"[0008]

In the present invention, the following means is adopted to solve the above problem.

A marine vessel according to claim 1 of the present invention is a marine vessel including: a ballast tank configured to perform posture control and stability securement of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy microorganisms and the like, to the ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water, the ballast pump being installed in an engine room, wherein the ballast water treatment apparatus is coupled to the ballast water plumbing configured to supply ballast water taken in from the water intake port to the ballast tank via a treatment-apparatus-inlet-side pipework and a

treatment-apparatus-outlet-side pipework, wherein an on-off valve is disposed in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and the on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge, wherein an on-off valve is also disposed in the ballast water plumbing between a connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and a connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing, and the on-off valves are made to be closed at a time of water intake and at a time of water discharge, wherein, in the ballast water plumbing, a check valve is disposed in a lower reach of the ballast pump and in an upper reach of the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing, the check valve only allowing a flow in a direction toward the ballast water treatment apparatus from the ballast pump, wherein the ballast water treatment apparatus to which ballast water is supplied is arranged in a steering room in a vessel rear, and wherein the steering room is configured, by being located above a waterline, to be able to discharge ballast water outboard in case of emergency."

(3) Correction 3

To correct

"[Claim 2]

The marine vessel according to claim 1, wherein said ballast water treatment apparatus is arranged in said steering room or on a deck provided in an open space of said steering room." in claim 2 of the scope of claims of the Patent of the case to

"[Claim 2]

The marine vessel according to claim 1, wherein said ballast water treatment apparatus has a block construction comprising a first processing unit and a second processing unit, wherein said first processing unit is arranged in said steering room or on a deck provided in an open space of said steering room, and wherein said second processing unit is installed on a floor surface of said steering room."

(4) Correction 4

To correct "[0010]

In the above marine vessel, it is preferred to said ballast water treatment apparatus be arranged at a deck provided in an open space of the steering room, and, by this, open spaces in the steering room are utilized more effectively, that is, the open spaces are effectively utilized three dimensionally, enabling to install various ballast

water treatment apparatus." in paragraph [0010] of the description of the Patent of the case to

"[0010]

In the above marine vessel, it is preferred to said ballast water treatment apparatus have a block construction comprising a first processing unit and a second processing unit, said first processing unit be arranged on a deck provided in an open space of said steering room, and said second processing unit be installed on a floor surface of said steering room, and, by this, open spaces in the steering room are utilized more effectively, that is, the open spaces are effectively utilized three dimensionally, enabling to install various ballast water treatment apparatus."

(5) Correction 5 and correction 12

"[0020]

In Fig. 1, the symbol 12 in the figure indicates water intake port of ballast water and 13 a ballast pump, and ballast water taken in from the water intake port 12 is supplied to a ballast tank 6 through ballast water plumbing 14.

A ballast water treatment apparatus 20 is coupled to the ballast water plumbing 14 that supplies ballast taken in from the water intake port 12 to the ballast tank 6 via a treatment-apparatus-inlet-side plumbing 15 and a treatment-apparatus-outlet-side plumbing 16.

Fig. 2 and Fig. 3 are plumbing diagrams showing a configuration example of the ballast water plumbing 14 that supplies ballast water to the ballast tank 6 from the water intake port 12 by operation of the ballast water treatment apparatus 20 and the ballast pump 13, and the treat water plumbing 15 that couples between the ballast water treatment apparatus 20 and the ballast water plumbing 14. Meanwhile, in Fig. 2 and Fig. 3, the symbol 17 in the figures indicates a water discharge port of ballast water, and V1 to V7 on-off valves, and CV1 a check valve." in paragraph [0020] of the description of the Patent of the case to

"[0020]

In Fig. 1, the symbol 12 in the figure indicates water intake port of ballast water and 13 a ballast pump, ballast water taken in from the water intake port 12 is supplied to a ballast tank 6 through ballast water plumbing 14.

A ballast water treatment apparatus 20 is coupled to the ballast water plumbing 14 that supplies ballast water taken in from the water intake port 12 to the ballast tank 6 via a treat water plumbing 15 (a treatment-apparatus-inlet-side pipework 15a and a treatment-apparatus-outlet-side pipework 16).

Fig. 2 and Fig. 3 are plumbing diagrams showing a configuration example of the ballast water plumbing 14 that supplies ballast water to the ballast tank 6 from the water intake port 12 by operation of the ballast water treatment apparatus 20 and the ballast pump 13, and the treat water plumbing 15 that couples between the ballast water treatment apparatus 20 and the ballast water plumbing 14. Meanwhile, in Fig. 2 and Fig. 3, the symbol 17 in the figures indicates a water discharge port of ballast water, and V1 to V7 on-off valves, and CV1 a check valve."

(6) Correction 6 and correction 13

To correct

"[0022]

The above-mentioned check valve CV1 only allows a flow in a direction toward the ballast water treatment apparatus 20 from the ballast pump 13 (the direction indicated by the arrows in the diagram). In addition, at the time of water intake of such ballast water, an on-off valve V6 provided in a treat water pipework 15a is made to be opened, and all of an on-off valve V2 provided in a ballast water pipework 14c, an on-off valve V3 provided in a ballast water pipework 14f and on-off valves V4 and V5 provided in a ballast water pipework 14g are made to be closed. The ballast water supplied to the ballast water treatment apparatus 20 undergoes treatment to remove or destroy microorganisms and the like included in ballast water, and then it is loaded into the ballast tank 6 through an on-off valve V7, the treatment-apparatus-outlet-side pipework 16, a ballast water pipework 14d and a ballast water pipework 14e. Accordingly, in the ballast tank 6, ballast water in a state that microorganisms and the like have been removed or destroyed will be loaded.

Meanwhile, when the ballast water treatment apparatus 20 uses a buffer tank, coupling will be made via, instead of the treatment-apparatus-outlet-side plumbing 16, a buffer-tank water intake port 12', and a processed water transfer pump 13', and a processed water transfer plumbing 16', and, as a flow of ballast water, only that portion is changed." in paragraph [0022] of the description of the Patent of the case to

"[0022]

The above-mentioned the check valve CV1 only allows a flow in a direction toward the ballast water treatment apparatus 20 from the ballast pump 13 (the direction indicated by the arrows in the diagram). In addition, at the time of water intake of such ballast water, an on-off valve V6 provided in a treatment-apparatus-inlet-side pipework 15a is made to be opened, and all of an on-off valve V2 provided in a ballast water pipework 14c, an on-off valve V3 provided in a ballast water pipework 14f and

on-off valves V4 and V5 provided in a ballast water pipework 14g are made to be closed. The ballast water supplied to the ballast water treatment apparatus 20 undergoes processing to remove or destroy microorganisms and the like included in ballast water, and then it is loaded into the ballast tank 6 through an on-off valve V7, the treatment-apparatus-outlet-side pipework 16, a ballast water pipework 14d and a ballast water pipework 14e. Accordingly, in the ballast tank 6, ballast water in a state that microorganisms and the like have been removed or destroyed will be loaded.

Meanwhile, when the ballast water treatment apparatus 20 uses a buffer tank, coupling will be made via, instead of the treatment-apparatus-outlet-side pipework 16, a buffer-tank water intake port 12', and a processed water transfer pump 13', and a processed water transfer plumbing 16', the flow of ballast water is changed only in that portion."

(7) Correction 7 and correction 14

To correct "[0033]

In addition, because the steering room 9 is adjacent to and close to the engine room 8 where the ballast pump 13 is installed, a pipework length and a pipework installation space needed for the treatment-apparatus-inlet-side plumbing 15 and the treatment-apparatus-outlet-side plumbing 16 is small, and a pressure loss that comes with ballast water treatment can be also suppressed to the minimum.

In addition, because the steering room 9 is a non-hazardous area, there is also an advantage that the restriction against various kinds of control equipment and electric equipment and the like may be small.

Furthermore, the steering room 9 is located above the draft of a marine vessel, and, therefore, there is also an advantage that ballast water can be discharged outboard easily in case of emergency.

Meanwhile, the present invention is not limited to the above-mentioned embodiments, and it can be changed accordingly within the range that does not deviate the gist of the present invention." in paragraph [0033] of the description of the Patent of the case to

"[0033]

In addition, because the steering room 9 is adjacent to and close to the engine room 8 where the ballast pump 13 is installed, a pipework length and a pipework installation space needed for the treatment-apparatus-inlet-side pipework 15a and the treatment-apparatus-outlet-side pipework 16 is small, and a pressure loss that comes with ballast water treatment can be also suppressed to the minimum.

In addition, because the steering room 9 is a non- hazardous area, there is also an advantage that the restriction against various kinds of control equipment and electric equipment and the like may be small.

Furthermore, the steering room 9 is located at above the waterline of a marine vessel, and, therefore, there is also an advantage that ballast water can be discharged outboard easily in case of emergency.

Meanwhile, the present invention is not limited to the above-mentioned embodiments, and it can be changed accordingly within the range that does not deviate the gist of the present invention."

(8) Correction 8 and correction 15

To correct

"[0035]

1 LNG carrier

4 Stern part

6 Ballast tank

7 Accommodation space

8 Engine room

9 Steering room

10 Void

12 Water intake port

12' Buffer-tank water intake port

13 Ballast pump

13' Processed water transfer pump

14 Ballast water plumbing

15 Processing-apparatus-inlet-side plumbing

16 Processing-apparatus-outlet-side plumbing

16' Processed water transfer plumbing

17 Water discharge port

20 Ballast water treatment apparatus

30 Deck

40 Waterline" in paragraph [0035] of the description of the Patent of the case to

"[0035]

1 LNG carrier

4 Stern part

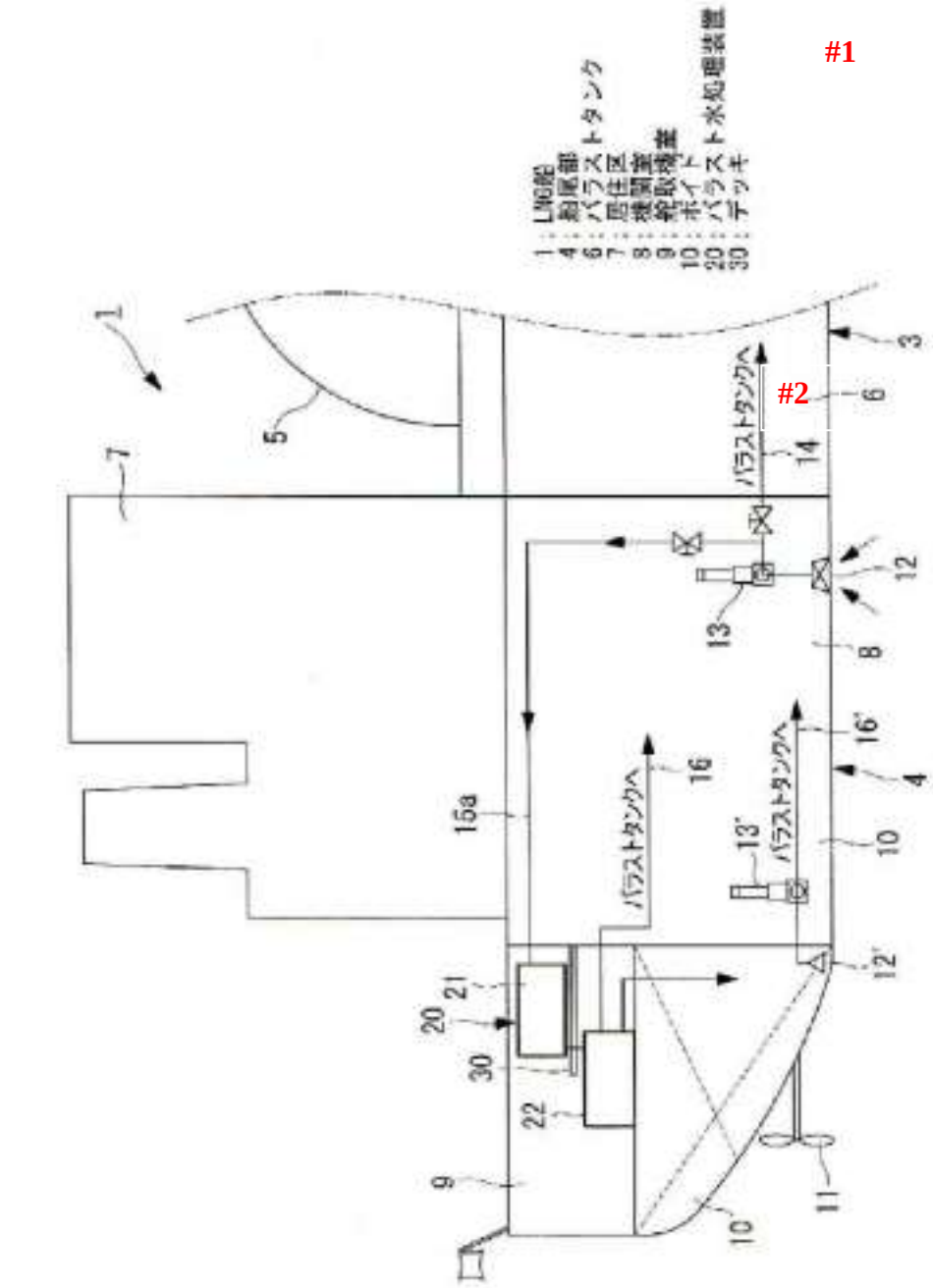
6 Ballast tank

7 Accommodation space
8 Engine room
9 Steering room
10 Void
12 Water intake port
12' Buffer-tank water intake port
13 Ballast pump
13' Processed water transfer pump
14 Ballast water plumbing
15 Process water plumbing
15a Treatment-apparatus-inlet-side pipework
16 Treatment-apparatus-outlet-side pipework
16' Processed water transfer plumbing
17 Water discharge port
20 Ballast water treatment apparatus
30 Deck
40 Waterline".

(9) Correction 9 and correction 16

To correct [Fig. 1] of the drawings affixed to the description of the Patent of the case as follows.

【図１】



[FIG. 1]

#1

1: LNG carrier

4: Stern part

6: Ballast tank

7: Accommodation space

8: Engine room
9: Steering room
10: Void
20: Ballast water treatment apparatus
30: Deck

#2
To ballast tank

(10) Correction 10

To correct

"[Claim 6]

A marine vessel comprising a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake or at a time of water discharge of ballast water to remove or destroy microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied,

wherein said ballast water treatment apparatus to which ballast water is supplied is arranged in a non- hazardous area in a vessel rear, and above a waterline and bellow a top portion of a ballast tank." in claim 6 of the scope of claims of the Patent of the case to

"[Claim 6]

A marine vessel comprising: a ballast tank configured to perform posture control and stability securement of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water, said ballast pump being installed in an engine room,

wherein said ballast water treatment apparatus is coupled to said ballast water plumbing configured to supply ballast water taken in from said water intake port to said ballast tank, via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework,

wherein an on-off valve is disposed in each of said treatment-apparatus-inlet-side pipework and said treatment-apparatus-outlet-side

pipework, and said on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge,

wherein an on-off valve is also disposed in said ballast water plumbing between a connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing and a connecting point between said treatment-apparatus-outlet-side pipework and said ballast water plumbing, and said on-off valve is made to be closed at a time of water intake and at a time of water discharge,

wherein, in said ballast water plumbing, a check valve is disposed in a lower reach of said ballast pump and in an upper reach of said connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing, said check valve only allowing a flow in a direction toward said ballast water treatment apparatus from said ballast pump,

wherein said ballast water treatment apparatus to which ballast water is supplied is arranged in a non- hazardous area in a vessel rear, and above a waterline and bellow a top portion of the ballast tank, and

wherein said ballast water treatment apparatus is configured, by being located above said waterline, to be able to discharge ballast water outboard in case of emergency."

(11) Correction 11

To correct

"[0013]

A marine vessel according to claim 6 of the present invention is a marine vessel including a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake or at a time of water discharge of ballast water to remove or destroy the microorganisms and the like, to the ballast water treatment apparatus ballast water being supplied, wherein the ballast water treatment apparatus to which ballast water is supplied is arranged in a non-hazardous area in a vessel rear, and above a waterline and bellow a top portion of a ballast tank." in paragraph [0013] of the description of the Patent of the case to

"[0013]

A marine vessel according to claim 6 of the present invention is a marine vessel including: a ballast tank configured to perform posture control and stability securement of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to

remove or destroy microorganisms and the like, to the ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in the ballast tank from a water discharge port at a time of water discharge of ballast water, the ballast pump being installed in an engine room, wherein the ballast water treatment apparatus is coupled to the ballast water plumbing configured to supply ballast water taken in from the water intake port to the ballast tank via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework, wherein an on-off valve is disposed in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and the on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge, wherein an on-off valve is also disposed in the ballast water plumbing between a connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and a connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing, and the on-off valve is made to be closed at a time of water intake and at a time of water discharge, wherein, in the ballast water plumbing, a check valve is disposed in a lower reach of the ballast pump and in an upper reach of the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing, the check valve only allowing a flow in a direction toward the ballast water treatment apparatus from the ballast pump, wherein the ballast water treatment apparatus to which ballast water is supplied is arranged in a non-hazardous area in a vessel rear, and above the waterline and bellow the top portion of the ballast tank, and wherein the ballast water treatment apparatus is configured, by being located above the waterline, to be able to discharge ballast water outboard in case of emergency."

2 Propriety of correction

(1) Correction 1 and correction 10

A Regarding purpose of correction

Correction 1 and 10:

(A) limits the statement about supply of ballast water to a ballast water treatment apparatus of "at a time of water intake or at a time of water discharge of ballast water" in claim 1 and 6 before correction to "at a time of water intake of ballast water";

(B) adds "a ballast tank configured to perform posture control and stability securement of a vessel's body" to claims 1 and 6 before correction;

(C) adds a matter "a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water, said ballast pump being installed in an engine room" to claims 1 and 6 before correction;
(D) adds a matter "wherein said ballast water treatment apparatus is coupled to said ballast water plumbing configured to supply ballast water taken in from said water intake port to said ballast tank, via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework, wherein an on-off valve is disposed in each of said treatment-apparatus-inlet-side pipework and said treatment-apparatus-outlet-side pipework, and said on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge, wherein an on-off valve is also disposed in said ballast water plumbing between a connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing and a connecting point between said treatment-apparatus-outlet-side pipework and said ballast water plumbing, and said on-off valve is made to be closed at a time of water intake and at a time of water discharge" to claims 1 and 6 before correction; and
(E) adds a matter "is constituted so as to be able to discharge ballast water outboard in case of emergency" to the matter "wherein said steering room is located above a waterline" in claim 1 before correction, and adds a matter "said ballast water treatment apparatus is configured, by being located above said waterline, to be able to discharge ballast water outboard in case of emergency" to claim 6 before correction.

Because the correction of the above-mentioned (A) is a correction to limit a time to supply ballast water to a ballast water treatment apparatus, which was alternative in the invention described in claims 1 and 6 before correction, to a single time, it can be said that it is aimed at restriction of the scope of claims.

The corrections of the above-mentioned (B) to (E) specifically specifies, in the inventions described in claims 1 and 6, matters pertinent to intake, and supply and discharge of ballast water to and from a ballast water treatment apparatus, and, therefore, it can be said that it is aimed at restriction of the scope of claims.

B To be one within the scope of the description, the scope of claims or the drawings affixed to the application

In the description of the Patent of the case (Evidence A No. 29 3 to be mentioned later), there is the following statements.

(a) "[0018]

...The ballast water treatment apparatus 20 is apparatus to remove or destroy various microorganisms and the like included in ballast water that is loaded into the ballast tank 6 with the purpose of posture control and stability securement of a vessel's body...."

(b) "[0020]

In Fig. 1, the symbol 12 in the figure indicates a water intake port of ballast water and 13 a ballast pump, ballast water taken in from the water intake port 12 is supplied to a ballast tank 6 through ballast water plumbing 14.

A ballast water treatment apparatus 20 is coupled to the ballast water plumbing 14 that supplies ballast taken in from the water intake port 12 to the ballast tank 6 via a treatment-apparatus-inlet-side plumbing 15 and a treatment-apparatus-outlet-side plumbing 16.

Fig. 2 and Fig. 3 are plumbing diagrams showing a configuration example of the ballast water plumbing 14 that supplies ballast water to the ballast tank 6 from the water intake port 12 by operation of the ballast water treatment apparatus 20 and the ballast pump 13, and the treat water plumbing 15 that couples between the ballast water treatment apparatus 20 and the ballast water plumbing 14. Meanwhile, in Fig. 2 and Fig. 3, the symbol 17 in the figures indicates a water discharge port of ballast water, and V1 to V7 on-off valves, and CV1 a check valve."

(c)"[0022]

The above-mentioned the check valve CV1 only allows a flow in a direction toward the ballast water treatment apparatus 20 from the ballast pump 13 (the direction indicated by the arrows in the diagram). In addition, at the time of water intake of such ballast water, an on-off valve V6 provided in a treat water pipework 15a is made to be opened, and all of an on-off valve V2 provided in a ballast water pipework 14c, an on-off valve V3 provided in a ballast water pipework 14f and on-off valves V4 and V5 provided in a ballast water pipework 14g are made to be closed. The ballast water supplied to the ballast water treatment apparatus 20 undergoes processing to remove or destroy microorganisms and the like included in ballast water, and then it is loaded into the ballast tank 6 through an on-off valve V7, the treatment-apparatus-outlet-side pipework 16, a ballast water pipework 14d and a ballast water pipework 14e. Accordingly, in the ballast tank 6, ballast water in a state that microorganisms and the like have been removed or destroyed will be loaded...."

(d) "[0023]

Next, explanation regarding a time of water discharge of ballast water will be

made referring to Fig. 3. Meanwhile, at the time of such water discharge, the on-off valves V1, V6, and V7 is made to be the closed state from the opened state, the on-off valves V3, V4, and V5 are changed to the opened state from the closed state.

At the time of discharge of ballast water shown in Fig. 3, by the ballast pump 13 being operated, ballast water within the ballast tank 6 is sucked. Ballast water sucked from the ballast tank 6 flows into the ballast pump 13 through the ballast water pipework 14e, the ballast water pipework 14f having the on-off valve V3 of the opened state, and the ballast water pipework 14b. This ballast water is pressurized and transferred by the ballast pump 13, and then it is discharged outboard from the ballast water pipework 14g provided with the on-off valves V4 and V5 through the ballast water pipework 14b provided with the check valve CV1 and the water discharge port 17."

(e) "[0026]

...For this reason, the ballast pump 13 is installed in the engine room 8 in the rear side of a vessel's body except for a case where there is a special reason...."

(f) "[0033]

...

In addition, because the steering room 9 is located above the draft of a marine vessel, there is also an advantage that ballast water can be discharged outboard easily in case of emergency."

The correction of the above-mentioned A (A) is one that removes an element in an alternative form, and, thus, it is a correction made within the range of the statements of the scope of claims affixed to the application of the Patent of the case.

The correction of the above-mentioned A (B) is a correction based on the statement of the above-mentioned (a), and, therefore, it is a correction made within the range of the statements of the description affixed to the application of the Patent of the case.

The corrections of the above-mentioned A (C)-(D) are corrections that are based on the statements of the above-mentioned (b)-(e) and [Fig. 2] and [Fig. 3], and, therefore, they are corrections made within the range of the statements of the description or drawings affixed to the application of the Patent of the case.

The correction of the above-mentioned A (E) is a correction that is based on the statement of the above-mentioned (f), and, thus, it is a correction made within the range of the statements of the description affixed to the application of the Patent of the case.

C Not to be one that expands or changes the scope of claims substantially

The correction of the above-mentioned A (A) is a correction that removes an element in an alternative form of claims 1 and 6 before correction, and, therefore, it is not one that expands or changes the scope of claims substantially.

The corrections of the above-mentioned A (B)-(E) are ones that add limitation to claims 1 and 6 before correction, and, thus, these are not ones that expand or change the scope of claims substantially.

(2) Regarding correction 3

A Regarding purpose of correction

The correction 3 is one that adds a matter that a ballast water treatment apparatus "has a block construction comprising a first processing unit and a second processing unit, wherein said first processing unit" is arranged in said steering room or "on" a deck provided in an open space of said steering room, and wherein "said second processing unit is installed on a floor surface of said steering room" to claim 2 before correction.

The correction of the above-mentioned correction 3 is a correction that specifies that the structure of a ballast water treatment apparatus in the invention according to claim 2 before correction is a structure of two processing units, and specifies the installation positions of each of the processing units in a steering room, and, thus, it can be said that it is aimed at restriction of the scope of claims.

B To be ones within the scope of the description of the application, the scope of claims or drawings affixed to the application

In the description of the Patent of the case (Evidence A No. 29 3), there is the following description.

(g) "[0019]

...

The ballast water treatment apparatus 20 shown in Fig. 1 includes a first processing unit 21 and a second processing unit 22. The first processing unit 21 and the second processing unit 22 in this case are ones in which necessary processing ability is arranged in a manner divided into two units, and the both units are arranged within the steering room 9...."

(h) "[0030]

In addition, because, in the steering room 9, there is a relatively large open space existing above the upper side of the steering apparatus, it is also possible to form

a deck 30 in an intermediate position and the like of this open space to install the ballast water treatment apparatus 20 on it as shown in Fig. 1, for example. In such configuration, it is possible to sterically utilize an open space within the steering room 9 effectively, it facilitates a block construction such as to install the first processing unit 21 on the deck 30, and to install the second processing unit 22 on a floor surface of the steering room 9 as shown in Fig. 1, for example. ..."

The correction of the above-mentioned correction 3 is based on the statements of the above-mentioned (g) and (h), and, thus, it is a correction made within the range of the statements of the description affixed to the application of the Patent of the case.

C Not to be one that expands or changes the scope of claims substantially

The correction relating to the above-mentioned correction 3 is one that adds limitation to claim 2 before correction, and, therefore, it is not one that expands or changes the scope of claims substantially.

(3) Regarding correction 2, 4 to 9, 11 to 16

A Regarding purpose of correction

The matter of correction 2 is a correction that corrects the statement of paragraph [0008] of the description along with the correction of the scope of claims according to the above-mentioned matter of correction 1, and it is a correction that makes the statements of the scope of claims and the statement of the detailed explanation of the invention be consistent with each other, and, therefore, it falls under a correction aimed at clarification of an ambiguous statement.

In a similar fashion, correction 4 and 11 are ones that correct the statements of paragraph [0010] and [0013] of the description along with the correction of the scope of claims according to the above-mentioned correction 3 and 10, and, therefore, it falls under a correction aimed at clarification of an ambiguous statement.

Correction 5 and 12 are corrections that correct error about the statement of paragraph [0020] of the description and carries out correction of the scope of claims according to the above-mentioned matter of correction 1 so as to standardize terms, and, thus, they fall under corrections aimed at correction of errors and clarification of ambiguous statements.

Correction 6 and 13 are ones that carry out correction of the statement of paragraph [0022] of the description along with the correction of the scope of claims according to the above-mentioned matter of correction 1 so as to standardize terms, and,

therefore, it falls under a correction aimed at clarification of an ambiguous statement.

Similarly, correction 7 and 14, correction 8 and 15, correction 9 and 16 are ones that carry out correction of the statements of paragraphs [0033], [0035] of the description and [Fig. 1] along with the correction of the scope of claims according to the above-mentioned correction 1 so as to standardize terms, and, therefore, it falls under a correction aimed at clarification of an ambiguous statement.

B To be one within the scope of the statements of the description, the scope of claims or the drawings affixed to the application

Because correction 2, 4-9, 11-16 are, as mentioned in the above A, corrections that come with the corrections of correction 1, 3, and 10, and, as mentioned in the above (1) and (2), the correction 1, 3 and 10 are corrections made within the range of the statement of the description, the scope of claims, or drawings affixed to the application, it can be said that correction 2, 4-9, and 11-16 are also corrections made within the range of the statements of the description, the scope of claims, or drawings affixed to the application.

C Not to be one that expands or changes the scope of claims substantially

Because correction 2, 4-9, 11-16 are, as mentioned in the above A, corrections that come with the corrections of correction 1, 3, and 10, and, as mentioned in the above (1) and (2), correction 1, 3, and 10 are not ones that expand or change the scope of claims substantially, it can be said that also correction 2, 4-9, 11-16 are not ones that expand or change the scope of claims substantially.

3 Regarding allegations of the Demandant in written refutation effective May 20, 2015

The Demandant alleges in a written refutation effective May 20, 2015 that the correction is illegal, and the allegation will be examined below.

(1) Matter of correction 1 and Matter of correction 10

About correction 1, the Demandant alleges in the above-mentioned written refutation as follows.

"Although it can be understood that the above-mentioned claim 1 (after the Correction of the case) is based on the example described in Fig. 2 and Fig. 3 affixed to the description of the Patent of the case (explanation of that is in paragraphs [0021]-[0023]), only a part of configuration of this example is specifically described, and the remaining part is not described at all, and, therefore, when comprehending the

statements described in the above claim as it is, it is a configuration in which water intake is possible, but water discharge is not possible."
(Page 7, ll. 1-6)

"As mentioned above, in claim 1 (after the Correction of the case), based on Fig. 2 and Fig. 3, there is specifically described, as a configuration of pipework from a water intake port to a ballast tank: a ballast pump (it can be understood as one performing operations of water intake and water discharge) provided in ballast water plumbing that takes in ballast water from a water intake port, and, at the time of water discharge of ballast water, discharge ballast water in a ballast tank from a water discharge port; and an arrangement of plurality of valves and an opening/closing state of those according to a time of water intake and a time of water discharge. However, a configuration of pipework from the ballast tank to the water discharge port is not explained in claim 1 specifically at all (even though it is described specifically in Fig. 2 and Fig. 3). Not only that, in claim 1 (after the Correction of the case), there is described, as an essential condition, that, at the time of water discharge, the on-off valve V2 located between the ballast tank and the ballast pump, and V6 and V7 become the closed state together. Therefore, according to the configuration described in claim 1 (after the Correction of the case), ballast water cannot be led from the ballast tank 6 to the water discharge port by operating the ballast pump, and, in this point, the present invention is nothing but of an unworkable configuration with respect to water discharge.

As a consequence, in a point that a matter that is workable in the invention according to claim 1 (before the Correction of the case) is not workable in the invention according to claim 1 (after the Correction of the case) (because of the lack of a specific configuration of pipework that becomes essential at the time of water discharge), it cannot be said that correction 1 is restriction of the scope of claims. Accordingly, correction 1 is not a correction aimed at restriction of the scope of claims, and, in addition, it does not correspond to clarification of an ambiguous statement or correction of errors. Therefore, it is not aimed at the matters prescribed in each item of Proviso to Article 134-2(1) of the Patent Act, and, thus, it is illegal." (Line 1 of page 8-line 5 of page 9)

In addition, about correction 10, the Demandant alleges as follows in the same written refutation.

"Here, when the content of the correction of the above-mentioned claim 6 (after the Correction of the case) is compared with that of the above-mentioned claim 1 (after the Correction of the case), with the exception that constituent component of '(omitted)' of the above claim 6 (after the Correction of the case), they are identical, and, regarding

these identical corrections, the allegation described in the above-mentioned 6-2-1 is applicable just as it is.

Accordingly, correction 10 is not one aimed at restriction of the scope of claims, and, in addition, it does not fall under clarification of an ambiguous statement or correction of errors. Therefore, it is not aimed at the matters prescribed in each item of Proviso to Article 134-2(1) of the Patent Act, and, thus, it is illegal." (Page 12, ll. 18-27)

The above allegations of the Demandant are, in effect, ones that say, on the grounds that correction 1 and 10 of the Correction of the case do not specify a specific configuration of pipework from a ballast tank to water discharge (the pipework configuration described in Fig. 2 and Fig. 3) in the inventions according to claims 1 and 6, both the inventions become not workable, and the Correction of the case is not aimed at restriction of the scope of claims.

However, water discharge of ballast water only has to be performed from an arbitrary pipework route in which the on-off valves V2, V6 and V7 are not provided, and even if these on-off valves become the closed state together, it cannot be said that water discharge becomes impossible by that reason. Therefore, in the inventions according to claims 1 and 6 after correction, there is no reason that "a specific configuration of pipework from a ballast tank to water discharge" must be a matter specifying the invention.

Furthermore, that correction 1 and 10 are aimed at restriction of the scope of claims is as has been judged in the above-mentioned 2(1). Accordingly, the above-mentioned allegations of the Demandant cannot be accepted.

(2) Regarding correction 3

The Demandant alleges as follows.

"In the description of the Patent of the case, there is no statement or suggestion about an example in which the configuration including two units described in Fig. 1 and the above-mentioned pipework configuration described in Fig. 2 and Fig. 3 are combined.

Therefore, the Corrected invention of the case 2 configured by correction 3 is one to which a new matter is added, and, thus, it is illegal." (Page 10, ll. 18-22)

The Demandant alleges, in effect, that, on the ground that there is no statement or suggestion in the description and drawings about an example corresponding to the invention according to claim 2 corrected by correction 3 of the Correction of the case,

correction 3 is not within the range of the statements of the description, the claims, or the drawings affixed to the application.

However, in paragraph [0030] of the description of the Patent of the case, there is described that "In addition, because, in the steering room 9, there is a relatively large open space existing above the upper side of the steering apparatus, it is also possible to form a deck 30 in an intermediate position and the like of this open space to install the ballast water treatment apparatus 20 on it as shown in Fig. 1, for example. In such configuration, because it is possible to sterically utilize an open space within the steering room 9 effectively, it facilitates a block construction such as to install the first processing unit 21 on the deck 30, and to install the second processing unit 22 on a floor surface of the steering room 9 as shown in Fig. 1, for example." Here, because it is a matter of course that each processing unit is joined to the ballast tank and the ballast pump and the like by pipework, about the combination of the configuration of two units described in Fig. 1 and the pipework configuration described in Fig. 2 and Fig. 3, a person skilled in the art can recognize as it is being described from the description and the drawings of the Patent of the case, and, therefore, it is obvious that correction 3 does not fall under addition of a new matter.

Accordingly, the above-mentioned allegations of the Demandant cannot be accepted.

4 Summary

As mentioned in the above (1) and (2), correction 1, 3, and 10 are aimed at restriction of the scope of claims, are made within the range of the matters described in the description, the scope of claims, or drawings affixed to the application, and, in addition, they are not ones that expands or change the scope of claims substantially.

In addition, as mentioned in the above (3), correction 2, 4-9, and 11-16 are aimed at correction of errors and clarification of an ambiguous statement, are made within the range of the matters described in the description, the scope of claims, or drawings affixed to the application, and, in addition, they are not ones that expand or change the scope of claims substantially.

Then, claims 2-5 after the correction relating to the above-mentioned correction 1 are ones that respectively cite the statements of claim 1 after correction, and claim 3 after the correction relating to the above-mentioned correction 3 is one that cites the statement of claim 2 after correction, and, therefore, claims 1-5 after the correction in question are a group of claims having relation prescribed in Article 134-2(3) of the Patent Act (Article 46-2 of the Regulations under the Patent Act).

Accordingly, the correction of correction 1-16 are aimed at matters prescribed in item 1, item 2 and item 3 of Proviso to Article 134-2(1) of the Patent Act, conform to the prescriptions of Article 126(5) and (6) of the Patent Act as applied mutatis mutandis pursuant to the provisions of Article 134-2(9) of the Patent Act, and the corrections in question are legal. Therefore, the corrections in question for each claim or for each group of claims shall be approved.

No. 3 The patent invention

Because the scope of claims of the Patent of the case has been corrected by the above-mentioned correction, the inventions described in claims 1-6 of the correction (Hereinafter, referred to as "the patent inventions 1-6") is as follows.

"[Claim 1]

A marine vessel comprising: a ballast tank configured to perform posture control and stability securement of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in a ballast tank from a water discharge port at a time of water discharge of ballast water, said ballast pump being installed in an engine room,

wherein said ballast water treatment apparatus is coupled to said ballast water plumbing configured to supply ballast water taken in from said water intake port to said ballast tank, via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework,

wherein an on-off valve is disposed in each of said treatment-apparatus-inlet-side pipework and said treatment-apparatus-outlet-side pipework, and said on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge,

wherein an on-off valve is also disposed in said ballast water plumbing between a connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing and a connecting point between said treatment-apparatus-outlet-side pipework and said ballast water plumbing, and said on-off valve is made to be closed at a time of water intake and at a time of water discharge,

wherein, in said ballast water plumbing, a check valve is disposed in a lower reach of said ballast pump and in an upper reach of said connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing, said check valve only allowing a flow in a direction toward said ballast water treatment apparatus from said ballast pump,

wherein said ballast water treatment apparatus to which ballast water is supplied is arranged in a steering room in a vessel rear,

wherein said steering room is configured, by being located above a waterline, to be able to discharge ballast water outboard in case of emergency.

[Claim 2]

The marine vessel according to claim 1, wherein said ballast water treatment apparatus has a block construction comprising a first processing unit and a second processing unit, wherein said first processing unit is arranged in said steering room or on a deck provided in an open space of said steering room, and wherein said second processing unit is installed on a floor surface of said steering room.

[Claim 3]

The marine vessel according to claim 1 or 2, wherein a stern void space such as an aft peak tank is used as a buffer tank of said ballast water treatment apparatus.

[Claim 4]

The marine vessel according to claim 1, wherein said steering room is a non-hazardous area.

[Claim 5]

The marine vessel according to claim 1, wherein said steering room is adjacent to an engine room in which a ballast pump is installed.

[Claim 6]

A marine vessel comprising: a ballast tank configured to perform posture control and stability securement of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water, said ballast pump being installed in an engine room,

wherein said ballast water treatment apparatus is coupled to said ballast water plumbing configured to supply ballast water taken in from said water intake port to said

ballast tank, via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework,

wherein an on-off valve is disposed in each of said treatment-apparatus-inlet-side pipework and said treatment-apparatus-outlet-side pipework, and said on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge,

wherein an on-off valve is also disposed in said ballast water plumbing between a connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing and a connecting point between said treatment-apparatus-outlet-side pipework and said ballast water plumbing, and said on-off valve is made to be closed at a time of water intake and at a time of water discharge,

wherein, in said ballast water plumbing, a check valve is disposed in a lower reach of said ballast pump and in an upper reach of said connecting point between said treatment-apparatus-inlet-side pipework and said ballast water plumbing, said check valve only allowing a flow in a direction toward said ballast water treatment apparatus from said ballast pump,

wherein said ballast water treatment apparatus to which ballast water is supplied is arranged in a non-hazardous area in a vessel rear, and above a waterline and bellow a top portion of the ballast tank, and

wherein said ballast water treatment apparatus is configured so as to be able to discharge ballast water outboard in case of emergency by said ballast water treatment apparatus being located above said waterline."

No. 4 Argument of parties concerned

1 Argument of Demandant and means of proof

The Demandant demands the trial decision, "the patent for the invention according to claims 1 to claim 6 of Japanese Patent No. 4509156 are invalidated, and the costs in connection with the trial shall be borne by the Demandee.", and the outline of the reason is as follows.

[Reasons for invalidation]

Each of the inventions according to claim 1 to claim 6 of the Patent of the case would be easily invented by a person skilled in the art prior to the filing of the application based on the Demandant's-Exhibit-1 invention in which Evidence A No. 1 is recorded or the invention described in Demandant's Exhibit No. 2, and on the invention or the well-known art described in one of the publications of Evidence A No. 2 to

Evidence A No. 12. Therefore, the Demandee should not be granted a patent for these in accordance with the provisions of Article 29(2) of the Patent Act, the Patent of the case corresponds to Article 123(1)(ii) of the Patent Act, and it should be invalidated.

Then, the Demandant has submitted, as means of proof, the following Evidence A No. 1 to Evidence A No. 35, and Demandant's Exhibit No. 1 and Demandant's Exhibit No. 2.

[Means of proof]
Evidence A No. 1: "Environment-Friendly Ballast Water Treatment System (For ICBWM 2006)
Evidence A No. 2: "Ship Science (Fune no Kagaku), Vol.39, No.4", pp. 28-34, Ship Technology Association, April 1986 issue
Evidence A No. 3: "Ship Science, Vol.39, No.3", pp. 36-41, Ship Technology Association, March 1986 issue
Evidence A No. 4: "Ship Science Vol.30 No.1", pp. 66-77, Ship Technology Association, January 1977 issue
Evidence A No. 5: "Ship Science Vol.40 No.3", pp. 28-32, Ship Technology Association, March 1987 issue
Evidence A No. 6: "Illustration of Hull Structures, English to Japanese translation version vessel's body structure illustration collection", pp.194-195, Books Seizando Ltd., 2006 First version
Evidence A No. 7: "Coastal Service Dictionary (extract)", Coastal Service Journal Ltd., issued on Mar. 30, 1994
Evidence A No. 8: "Marine Engineering terms collection (extract)", Book Seizando Ltd., 1986
Evidence A No. 9: Japanese Unexamined Patent Application Publication No. 2006-272147
Evidence A No. 10: Japanese Unexamined Patent Application Publication No. H6-10169
Evidence A No. 11: Japanese Unexamined Patent Application Publication No. 2006-27440
Evidence A No. 12-1: "Kagoshima University fisheries science faculty training vessel construction technical specifications (extract)" (August 2001, Kagoshima University)
Evidence A No. 12-2: Invitation for bids (Sep. 11, 2001, Kagoshima University secretary-general) (Official publication of a Gazette dated Sep. 11, 2001)

Evidence A No. 13: A written explanation of the need for the accelerated examination of Japanese Patent Application No. 2007-238381 (dated Feb. 12, 2010)
Evidence A No. 14: A written statement (prepared by Yukihiko Okamoto)
Evidence A No. 15: A written statement (prepared by Katsumi Yoshida)
Evidence A No. 16: "Year 2006 investigative research related to international movement of maritime affairs (related to marine pollution prevention), Outline of proceedings of the second committee meeting (draft)" (prepared by Corporate Juridical Person, The Japan Association of Marine Safety)
Evidence A No. 17: News release "Clarification system to prevent disruption of ecosystem of surrounding sea areas due to ballast water discharge developed: Demonstration experiment of ballast water clarification apparatus starts in Tokyo Bay" (Sep. 25, 2006, Hitachi, Ltd. and Hitachi Plant Technology, Ltd.) (http://www.hitachi.co.jp/New/cnews/month/2006 /09/0925.html)
Evidence A No. 18: Written explanation of content of a CD-ROM recording the data of Evidence A No. 1
Demandant's Exhibit No. 1: A CD-ROM recording data of Evidence A No. 1 (the one delivered to Yukihiko Okamoto) (the one having the statements of "3rd International Conference & Exhibition on Ballast Water Management (ICBWM 2006)" and "Singapore 25-26 September 2006" on the front cover label)
Demandant's Exhibit No. 2: A CD-ROM recording the data of Evidence A No. 1 (the one delivered to Katsumi Yoshida) (the one having the statements of "3rd International Conference & Exhibition on Ballast Water Management (ICBWM 2006)" and "Singapore 25-26 September 2006" on the front cover label)
Evidence A No. 19: "The MOTOR SHIP Vol.59 No.699, p.136, IPC Industrial Press Limited, United Kingdom, October 1978
Evidence A No. 20: "The MOTOR SHIP Vol.59 No.701, pp.34-36, IPC Industrial Press Limited, United Kingdom, December 1978
Evidence A No. 21: "Ship Science Vol.26 No.6", pp. 62-67, Ship Technology Association, June 1973 issue
Evidence A No. 22: "Ship Science Vol.41 No.12", pp. 28-35, Ship Technology Association, December 1988 issue
Evidence A No. 23: "The MOTOR SHIP, Vol.63, No.745", p. 34, IPC Industrial Press Limited, United Kingdom, August 1982
Evidence A No. 24: "Ship Science Vol.22 No.7", pp. 63-64, Ship Technology Association, July 1969 issue
Evidence A No. 25: "Ship Science Vol.19 No.6", pp. 55-66, Ship Technology

Association, June 1966 issue
Evidence A No. 26: "Ship Science Vol.19 No.5", pp. 69-75, Ship Technology Association, May 1966 issue
Evidence A No. 27: "The MOTOR SHIP", pp. 31-36, Reed Business Information Ltd, United Kingdom, February 2001
Evidence A No. 28: Japanese Patent No. 4509156
Evidence A No. 29-1: Written correction request for the case of invalidation No. 2011-800262 dated Apr. 10, 2012
Evidence A No. 29-2: The corrected scope of claims affixed to the Written correction request for the case of invalidation No. 2011-800262 dated Apr. 10, 2012
Evidence A No. 29-3: Corrected description affixed to the Written correction request for the case of invalidation No. 2011-800262 dated Apr. 10, 2012
Evidence A No. 30: Japanese Unexamined Patent Application Publication No. 2007-44567
Evidence A No. 31: Japanese Unexamined Patent Application Publication No. 2002-192161
Evidence A No. 32: Japanese Unexamined Patent Application Publication No. 2005-21814
Evidence A No. 33: Japanese Unexamined Patent Application Publication No. 2005-88835
Evidence A No. 34: "Ballast Pipe Equipment Design Standards", 4.3 Example 3, Kaibundo Publication Ltd., issued on Jun. 20, 1971
Evidence A No. 35: "Pump Facilities Handbook (Main part)", p. 18, p. 22, p. 98, EBARA CORPORATION, issued on Aug. 31, 1974

Meanwhile, the Demandee has admitted in oral proceedings that Demandant's Exhibit No. 1 and Demandant's Exhibit No. 2 are publications distributed in advance of the Patent application of the case abroad, and also admitted, by inspection, that Evidence A No. 1 is one recorded in Demandant's Exhibit No. 1 and Demandant's Exhibit No. 2.

In addition the Demandee alleges in a written opinion dated July. 13, 2015 that it disputes feasibility of Evidence A No. 35.

2 The demandee's allegation

The Demandee requested the trial decision of "The demand for trial of the case was groundless. The costs in connection with the trial shall be borne by the

demandant.", and alleges that, about the above-mentioned arguments of the Demandant, none of the arguments of the Demandant is groundless.

Then, the Demandee submitted, as means of proof, the following Evidence B No. 1 to Evidence B No. 12.

[Means of proof]
Evidence B No. 1: "Ship Science Vol. 51 No. 8", pp. 28-34, Ship Technology Association, Aug. 10, 1998 issue
Evidence B No. 2: "Ship Science Vol.28 No.4", pp. 50-57, Ship Technology Association, Apr. 10, 1975 issue
Evidence B No. 3: "Ship Maintenance Technology (ver. 3)", pp. 16-19, Society for Ship Maintenance Research, issued on Oct. 28, 2006
Evidence B No. 4: Japanese Unexamined Patent Application Publication No. H6-127467
Evidence B No. 5: Japanese Unexamined Patent Application Publication No. H6-122397
Evidence B No. 6: "The MOTOR SHIP", pp. 46, 46A, and 46B, Reed Business Information Ltd, United Kingdom, vol.64, No.762, January 1984
Evidence B No. 7: Japanese Unexamined Patent Application Publication No. 2002-46691
Evidence B No. 8: Japanese Unexamined Patent Application Publication No. 2009-166705
Evidence B No. 9: "The MOTOR SHIP", p. 26B, Reed Business Information Ltd, United Kingdom, vol.68, No.812, March 1988
Evidence B No. 10: "Journal of Kansai Soc. of Naval Architects, Japan", No. 176, p. 105, March 1980
Evidence B No. 11: "Journal of Kansai Soc. of Naval Architects, Japan", No. 177, p.145, June 1980
Evidence B No. 12: "Journal of Kansai Soc. of Naval Architects, Japan", No. 184, p.129, March 1982

No. 5 Described matters in each of Evidence A

In Demandant's Exhibit No. 1 (Evidence A No. 1), Evidence A No. 2 to Evidence A No. 27, Evidence A No. 30 to Evidence A No. 34, there is described each of the following matters.

1 Demandant's Exhibit No. 1 (Evidence A No. 1) and the Demandant's-Exhibit-1 invention

(1a)

"Abstract

Hitachi Plant Technologies and Hitachi, Ltd. have jointly developed an environment-friendly ballast water treatment system. This system removes not only plankton and bacterium but also suspended solids from the ballast water after it is pumped into the ship. The system was originally developed to remove blue-green algae from water in lakes. The system consists of three units. The first unit makes flocs of the plankton, bacterium, suspended solids, and magnetic particles in the ballast water. The second unit magnetically removes the flocs from the water. The third unit filters the ballast water from the second unit. The ballast water treated by the system satisfies Regulation D-2. Since the treated ballast water is very clean and friendly to the natural environment, no creatures are killed when dumping the treated ballast water from the ship.

Mitsubishi Heavy Industries, Ltd. Nagasaki Shipyard Machinery Works has installed this system a ship being built."

(1b)

"1.0 Introduction

Table 1 shows a regulation form the International Marine Organization (IMO) regarding ballast water. The regulation indicates the maximum number of certain organisms that are allowed in ballast water to the dumped.

There are two ways to satisfy the regulation. The first way is to kill the organisms in ballast water by injecting toxic substances, but doing so makes the ballast water lethal to aquatic species. Consequently, an additional treatment to remove the toxic substances from the ballast water is required.

The second way is to remove the organisms from the ballast water. The ballast remains safe for aquatic species and is environmentally friendly. Accordingly, the second way was selected for our system."

(1c)

"1.1 Ballast Water Treatment System

Figure 1 is a diagram of our system. There are three units in our system. The first unit performs two functions in sequence. The first function is to mix coagulant, magnetic particles, and ballast water rapidly and to make micro flocs of plankton, bacteria, magnetic particles, suspended solids, and others. The second

function is to gather the micro flocs and to enlarge them using polymers.

The second unit magnetically removes the flocs from the ballast water. The unit consists of rotating magnetic disks that catch the flocs on their surfaces. Over 90% of the flocs are removed using the surfaces of the disks.

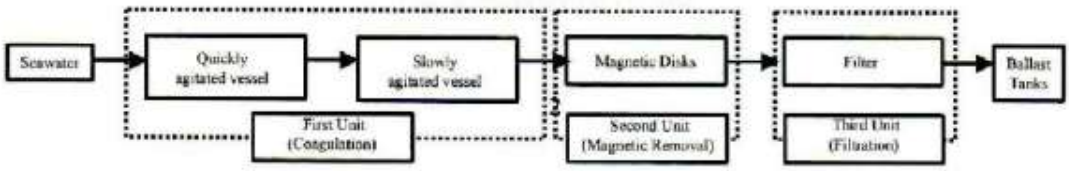


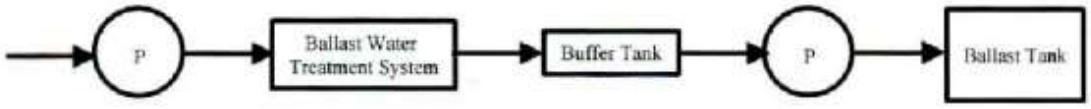
Fig.1 System Flow

The third unit uses a rotating filter to remove the rest of the flocs. The quality of water then satisfies Regulation D-2."

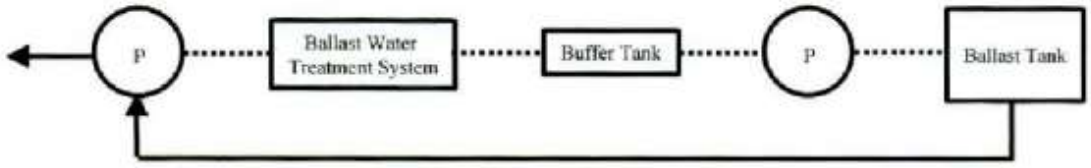
(1d)

"1.3 Installation Outline

Figure 6 shows the ship installation concept. The system is to be installed in a non-hazardous area such as the engine room or the steering room. The treatment system is active when pumping ballast water to the tanks and inactive when dumping to the sea."



(a) Pumping Ballast Water



(b) Discharging Ballast Water

Fig. 6 Diagram of Ballast Water Treatment

(1e)

From Fig. 6, the followings can be perceived:

(A) the "tank" of the above-mentioned (1d) is a "ballast tank";

(B) a pump is provided in a flow path for intake of ballast water and in a flow path for discharge of ballast water in the ballast tank; and

(C) the left end of the flow path in Fig. 6 becomes a water intake port as well as a water discharge port, and, ballast water is sucked in from the water intake port at the time of

water intake, and ballast water is discharged from the water discharge port at the time of water discharge.

In the above-mentioned statements, a "ballast water treatment system" described in the above-mentioned (1c) and (1d) is one provided in a marine vessel, and a "marine vessel including a ballast water treatment apparatus" can be also recognized as an invention. Therefore, in Demandant's Exhibit No. 1, there is described the following invention (hereinafter, referred to as "Demandant's-Exhibit-1 invention").

[Demandant's-Exhibit-1 invention]

"A marine vessel comprising: a ballast tank; a ballast water treatment system configured to treat microorganisms in ballast water at a time of water intake of ballast water to remove microorganisms, to said ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in a flow path for sucking in ballast water at the time of water intake of ballast water and in a flow path for discharging ballast water within the ballast tank from a water discharge port at the time of water discharge of ballast water,

wherein said ballast water treatment system to which ballast water is supplied is installed in a non-hazardous area such as an engine room and a steering room"

2 Evidence A No. 2

In Evidence A No. 2, there is described two drawings of a side structural drawing of the vessel's body of a state-of-the-art weight product carrying vessel "ARUPUSU-MARU" in the left of page 30 thereof, and a horizontal cross-section structural drawing of the vessel's body in the left of page 31, and, in view of these drawings, it can be perceived that a steering room ("STEERING GEAR RM") is located at the rear of a marine vessel, that the steering room is located above the waterline, that the steering room is adjacent to an engine room ("ENGINE ROOM"), that the steering room is arranged above the waterline and bellow the top parts of a ballast tank ("No.1 WING W.B.T", "No.2 WING W.B.T", and "No.4 WING W.B.T"), and that an aft peak tank ("A.P.T") is arranged in the stern.

3 Evidence A No. 3

In Evidence A No. 3, a side structural drawing of the vessel's body of a low temperature LPG ship "SHIROYAMA-MARU" is described in the left of page 38 thereof, and a diagram titled "3RD DECK" is described in the bottom right of page 39, and, from the both drawings, it can be perceived that a steering room (STEER.ENG) is

located at the rear of a marine vessel, the steering room is located above the waterline, the steering room and an engine room ("ENGINE ROOM") are adjacent to each other, and the steering room is arranged above the waterline and below the top part of a ballast tank ("NO.1 TOP.SIDE W.B.T"...).

4 Evidence A No. 4

(4a)

In pages 67 and 68 of Evidence A No. 4, there are described a side structural drawing of the vessel's body of an oil carrier "ESSO JAPAN" and a horizontal cross-section structural drawing of the vessel's body, and, from the both drawings, it can be perceived that a steering room is located at the rear of a marine vessel, the steering room is located above the waterline, the steering room is adjacent to an engine room, and the steering room is arranged above the waterline and below the top part of a ballast tank.

(4b)

In the uppermost diagram and the lowermost diagram of pages 67 and 68 of Evidence A No. 4, there is a compartment titled "A.P.T" in the stern part, and from this, it can be perceived that an aft peak tank is arranged below the steering room.

5 Evidence A No. 5

From the drawing (General arrangement plan of oil carrier "TOKYO-MARU") shown in page 30 of Evidence A No. 5, it can be perceived that a steering room is located at the rear of a marine vessel, the steering room is located above the waterline, the steering room and an engine room are adjacent to each other, and, the steering room is arranged above the waterline and below the top part of a ballast tank.

6 Evidence A No. 6

(6a)

"In the stern of a uniaxial propeller large-scale cargo ship such as a large-scale tanker and a bulk carrier, three compartments, that is, a steering gear room, a stern tank, and a cooling water tank are arranged. The steering gear room is located under the upper deck or the stern lower deck. A sterncastle is not provided. The inner structure is of, usually, a longitudinal costal bone structure supported by deck beams and ship-side beams, and beam columns." (Page 194, ll. 19-22)

(6b)

In the stern part side view in the middle right of page 195 of Evidence A No. 6,

it can be perceived that "Steering gear Rm" (steering gear room) is adjacent to "Eng.Em"(engine room).

(6c)

In the stern part side view in the middle right of page 195 of Evidence A No. 6, it can be perceived that "Steering gear Rm" (steering gear room) is in the rear of a marine vessel, and "APT" (stern tank) is placed under it.

7 Evidence A No. 7

(7a)

"[Stern tank] (After-peak Tank) A stern tank is a water tank provided in a place that is closer to the stern than an after-peak bulkhead, and is used for a ballast tank or a freshwater tank. A stern tank can be also used when adjustment of the after draft trim is needed. It is also called an after peak tank." (Page 215, ll. 24-27)

(7b)

"[Void space] A void space is a space that has to be an empty space by regulatory requirements. A space that has to be provided from structural reasons. A space that cannot be used from structural reasons. In tankers, it may also indicate a cofferdam existing between such as a tank and another tank, and an engine room and a tank." (Page 331, lines 12-16)

8 Evidence A No. 8

"Stern tank, After peak [water] tank A ballast tank provided in the backward of an after-peak bulkhead." (Page 120, lines 15-17 in the right column)

9 Evidence A No. 9

(9a)

"[0011] In particular, according to a consensus document made by IMO (International Maritime Organization), it is necessary to control the number of microorganisms such as zooplankton and phytoplankton included in ballast water to $10/m^3$ or less, and the number of bacilli such as bacteria to 10/cc or less by year 2009"

(9b)

"[0040] As shown in Fig. 2, in a bulk carrier 1, an inside area 2a of the ballast tank 2 and the engine room 4 are segregated by a bulkhead 6...."

(9c)

"[0042] As shown in Fig. 2, in a ship bottom 13, a ballast pump 14 and a water filling pipe 15 are installed...."

(9d)

Looking at Fig. 2 with the statements of the above-mentioned (9b) and (9c), it can be perceived that the ballast pump 14 is arranged in an engine room 4.

10 Evidence A No. 10

(10a)

"[0010] (A) and (B) in Fig. 1 show an example of the present invention, and it is made such that: an additive agent 1 made by evenly mixing sodium carbonate or sodium hydrogen carbonate with sodium hydroxide or potassium hydroxide, or a mixture made by mixing these and thiourea and gelatin adjusted at a predetermined mixture proportion is used as the additive agent 1; an additive agent injector 2 storing the additive agent 1 is installed within an engine room 14 of a marine vessel 3; an additive agent injection pipe 4 from the additive agent injector 2 is connected to the inlet side of a ballast pump 7, provided along a pipe 9, to fill marine water 5 from a marine water intake port 8 into a ballast tank 6; the additive agent 1 is stored in the above-mentioned additive agent injector 2 and injected from the additive agent injection pipe 4 to the pipe 9, and, by this, the marine water 5 in the pipe 9 and the additive agent 1 are mixed, and transferred into the ballast tank 6 by the ballast pump 7...."

(10b)

From Fig. 1 (B), it can be perceived that the ballast pump 7 is arranged in the engine room 14.

11 Evidence A No. 11

"[0006]

On the other hand, intake of marine water into the ballast tank and its discharge is carried out every time, and water intake and discharge in such case is conducted using a ballast pipework apparatus and a ballast pump provided in an engine room, which are fixed and exclusive apparatus. In this case, after discharge of ballast water, there is a residual liquid and sediments remaining in the bottom of the ballast tank."

12 Evidence A No. 12-1

"5. Wooden floor boards are placed on all over the floor of a steering gear room. Inside the room, a steering machine and ancillary equipment, a gyro repeater and a telephone and the like shall be provided. Near the entrance of the steering gear room, a shelf and the like shall be furnished by order of a supervisory staff." (Page 54, ll. 33-36)

13 Evidence A No. 19 to Evidence A No. 27

In each of the drawings of Evidence A No. 19 to Evidence A No. 27, there is shown a marine vessel in which a steering room is arranged in the rear of a marine vessel, and the steering room is arranged above the waterline of the vessel and below the top part of a ballast tank.

14 Evidence A No. 30

(14a)

"[Claim 1]

A ballast water treatment apparatus of a marine vessel, the ballast water treatment apparatus comprising:

a ballast tank of a marine vessel;

a supply pipe line comprising: a pump to supply ballast water from one water source outside the marine vessel to the ballast tank; and a supply valve in each of an upper reach and a lower reach of the pump;

a discharge pipe line comprising a discharge valve in each of an upper reach and a lower reach of a pump so as to discharge ballast water from the ballast tank to another water source outside the marine vessel; and

a ballast water treatment unit arranged in a partial pipe line in a downstream side of the supply pump in a manner adjacent to the supply pump,

wherein the ballast water treatment unit supplies ballast water at a high speed of at least 8 m/sec to a cyclic flow path restricted by a cylindrical wall by a pump to generate a high speed water flow within the cyclic flow path, and, by at least shearing action near the cylindrical wall and impact force due to a rotating body rotating inside at a high speed of 150 rpm or more, microorganisms or bacilli included in ballast water are fine-ground to be destroyed."

(14b)

"[Claim 5]

The apparatus according to claim 1, wherein the ballast water treatment unit is bypassed by a bypass pipe line comprising an on-off valve in the supply pipe line."

(14c)

"[0016]

The above-mentioned ballast water treatment unit is bypassed by a bypass pipe line including an on-off valve in the above-mentioned supply pipe line, and, by opening and closing operation of those valves, the maintenance and inspection can be performed

on a timely basis...."

(14d)

"[0021]

Next, a ballast water treatment apparatus of a marine vessel relating to a representative embodiment of the present invention will be described using drawings.

In Fig. 1, a ballast water treatment apparatus 10 of a marine vessel of a typical embodiment of the present invention includes: a ballast tank 2 provided in an outer periphery portion or the ship bottom of a marine vessel 1 so as to sink a screw under water in an empty load state after unloading and to achieve a balance of vessel's body; a pump P to supply ballast water to the ballast tank 2 from sea through an intake port 3 during unloading at one haven; a supply pipe line 11 (a supply water flow is indicated by an arrow F1) including supply valves V1U and V1D in the upstream side and the downstream side of the pump P, respectively; a discharge pipe line 21 (a discharge water flow is indicated by an arrow F2) including discharge valves V2U and V2D in an upstream side and a downstream side of the pump P, respectively, so as to discharge ballast water from the ballast tank 2 to sea outside the marine vessel by the pump P for the purpose of lading in another remote haven; a cyclic pipe line 31 (a circulating water flow is indicated by an arrow F3) including the upstream discharge valve V2U and the downstream supply valve V1D in an upstream side and a downstream side of the pump P, so as to return ballast water to the ballast tank 2 by the pump P after suction of ballast water from the ballast tank 2; and a ballast water treatment unit 100 arranged in a downstream side of the pump P and in a partial intermediate pipe line part 12 that is nearest, wherein, the ballast water treatment unit 100 supplies to-be-treated ballast water supplied by the pump P into a cyclic flow path restricted by a cylindrical inside wall by a second the pump P2 at a high speed of at least 8 m/sec, and performs fine grinding of microorganisms and bacilli included in ballast water to destroy them by impact force due to drop into an inner cylindrical body, shearing force between water flows near the cylindrical inside wall, and cavitation action due to rupture of air bubbles in ballast water.

[0022]

The pump P functions as a supply pump, a discharge pump, and a circulating pump, and, although, by adopting a method to perform driving by an inverter electric motor, it can be also used for supplying a high speed water flow to a ballast water treatment unit 40, the second pump P2 for generating a high speed water flow is provided for the purpose of making pipework simple, here. In order to prevent wear of members due to a high speed flow, a filter (not shown) to trap sand and the like is

provided accordingly between the intake port 3 and the upstream supply valve V1U in the downstream side of the pump P. Furthermore, for the purpose of check and repair of the ballast water treatment unit 100, a bypass pipe line 19 bypassing the ballast water treatment unit 100, an on-off valve VB of the bypass pipe line 19, and on-off valves VBU and VBD before and after the ballast water treatment unit 100 are provided as shown in Fig. 2."

(14e)

"[0023]

Treatment operation in the course of ballast water supply (intake):

In the supply pipe line 11 including: an intake pipe line part 11A extending to the intake port 3 from the pump P, the intake pipe line part 11A having the upstream supply valve V1U; an intermediate pipe line part 12 extending to the ballast water treatment unit 100 and to the pump P, the intermediate pipe line part 12 including the ballast water treatment unit 100 and the pump P; and a discharge pipe line part 13 extending from the ballast water treatment unit 100 to the ballast tank 2, the discharge pipe line part 13 including the downstream supply valve V1D, treatment operation of ballast water is performed by operating the pump P in the course of supplying ballast water to the ballast tank 2, and opening the supply valves V1U and V1D along with closing the discharge valves V2U and V2D. This treatment operation is executed when a voyage is short, and can be omitted when a voyage is long.

[0024]

Treatment operation in the course of ballast water discharge:

In the discharge pipe line 21 including: a discharge upstream pipe line part 22 that extends from the ballast tank 2, includes the upstream discharge valve V2U, and connected to an intake pipe line part 11A between the upstream supply valve V1U and the pump P, the shared intermediate pipe line part 12, and a discharge downstream pipe line part 23 extending from the discharge pipe line part 13 to outside a ship, treatment operation of ballast water is performed by operating the pump P in the course discharging ballast water from the ballast tank 2 to outside the marine vessel, and opening the discharge valves V2U and V2D along with closing the supply valves V1U and V1D. This exerts an effect when a voyage is relatively short and regulations for ballast water in a port of loading is severe."

(14f)

From Fig. 2, it can be perceived a pipework structure in which the on-off valve VBU is provided in the partial intermediate pipe line part 12 in the upstream side of the ballast water treatment unit 100, and the on-off valve VBD is provided in the partial

intermediate pipe line part 12 in the downstream side of the ballast water treatment unit 100, respectively, and the bypass pipe line 19 having the on-off valve VB is provided between the pipe line in the upstream side of the upstream supply valve VBU and the pipe line in the downstream side of the downstream supply valve VBD.

15 Evidence A No. 31

(15a)

"[0063] Fig. 1 is an explanatory diagram showing a ballast water treatment apparatus of a marine vessel according to an embodiment of the present invention. As shown in this figure, a water intake and discharge system I is one that is equipped in a marine vessel 1 conventionally, and that pumps up ballast water to be stored in a ballast tank 3 from outside the marine vessel 1 via a marine water intake port 2, and, together with this, discharges ballast water stored in the ballast tank 3 to outside the marine vessel 1. The water intake and discharge system I has a ballast pump 4 serving as a driving source, pipe lines 5a, 5b, 5c, and 5d to be flow paths of ballast water, and four valves 6a, 6b, 6c, and 6d arranged in the pipe lines 5a, 5b, 5c, and 5d, respectively, to switch water intake and water discharge...."

(15b)

"[0064] A treatment apparatus according to the present embodiment is one which is configured integrally with the above-mentioned water intake and discharge system I. In other words, a ballast water treatment unit II that serves the central function of the treatment apparatus is provided in mid-course of the pipe line 5b, and performs detoxifying treatment of harmful microorganisms hiding in ballast water introduced into the ballast tank 3, or in ballast water discharged from the ballast tank 3...."

(15c)

"[0065] A ballast water treatment apparatus as described above is operated in the following modes.

1) In a case where treatment of harmful microorganisms is performed when pumping up ballast water in the harbor of a departure place

In this case, ballast water is pumped up by driving the ballast pump 4 after the valves 6a and 6b are made to be in an opened state, and, in conjunction with this, the valves 6c and 6d are made to be in an closed state, and the treatment unit II is made to be in an operation mode. As a result, the pumped-up ballast water passes the pipe line 5a and the ballast pump 4, and is stored in the ballast tank 3 through the pipe line 5b. Here, predetermined detoxifying treatment is performed while ballast water flowing through the pipe line 5b flows through the treatment unit II. In addition, at the time of

discharge of ballast water, operation is made in the same manner as the following 2). In this regard, however, in this case, the treatment unit II is stopped except for making ballast water flow through.

2) In a case where treatment of harmful microorganisms is performed when ballast water is discharged in the harbor of a destination

In this case, ballast water from the ballast tank 3 is taken out by driving the ballast pump 4 after the valves 6c and 6d are made to be in the opened state, and, in conjunction with this, the valves 6a and 6b are made to be in the closed state, and the treatment unit II is made to be in the operation mode. As a result, the taken out ballast water passes a pipe line 5c and the ballast pump 4, and is discharged outside the marine vessel 1 from the open end of the pipe line 5d through the pipe line 5b and 5d. Here, predetermined detoxifying treatment is performed while ballast water flowing through the pipe line 5b flows through the treatment unit II. In addition, at the time of intake of ballast water, operation is made in the same manner as the above-mentioned 1). In this regard, however in this case, the treatment unit II is made to stop except for making ballast water flow through...."

(15d)

"[0068] In addition, even in a case where the treatment unit II is incorporated in an existing water intake and discharge system I, it may be one configured such that a branch pipe line that branches from the existing water intake and discharge system I is provided separately, the treatment unit II is arranged in mid-course of this branch pipe line, and, by valve switching, ballast water flows through the treatment unit II."

16 Evidence A No. 32

(16a)

"[0009]

[Description of Embodiments]

Fig. 1 shows an example of an overall configuration of a ballast water treatment apparatus according to the present invention, to which a ballast water treatment method according to the present invention can be applied.

The ballast water treatment apparatus includes a water intake system 1, a treated water system 2 that is a water delivery system for treated ballast water, an ultrasonic wave treatment unit 3 serving as an ultrasonic wave treatment component, and the like.

The water intake system 1 is a system to take in marine water including harmful microorganisms, and, in the present example, includes an outboard marine

water intake system 11, tank marine water intake systems 12a-12c, a ballast pump 13, a branch sending-in system 14, a first ballast water system 15 doubles as a water delivery system, and a second ballast water system 16 and the like."

(16b)

"[0010]

The treated water system 2 is a system to make marine water after killing at least a large portion of harmful microorganisms by an ultrasonic wave treatment unit 3 be water capable of being discharged as ballast water of a marine vessel, and, in the present example, it includes a marine water discharge system 21, a first tank water delivery system 2, a second tank water delivery system 23, a branch sending-out system 24, the first ballast water system 15 doubles as an intake system, the second ballast water system 16, and the like. Symbol 3a is a pump bypass system."

(16c)

"[0011]

Meanwhile, although valves and the like are provided in order to make each of the above-mentioned systems be usable corresponding to its objective, they are omitted in the figure. Also, it may be such that an exclusive use pump 3b compatible with a water amount to be treated by the ultrasonic wave treatment unit 3 is provided in the branch sending-in system 14 or the branch sending-out system 24 as indicated in dashed-two dotted line in the figure."

(16d)

"[0028]

Meanwhile, assuming that ballast water has been taken in the all ballast tanks, ballast water is taken out from any of the ballast tanks, from a tank 101, for example, via the first ballast water system 15 using the ballast pump 13 or the exclusive use pump 3b, is taken into the ultrasonic wave treatment unit 3 from the branch sending-in system 14 and sterilized to make the ballast water be water to be able to be discharged, and discharged outboard through the branch sending-out system 24 or the marine water discharge system 21. If ballast water undergoes sterilization treatment in this way, even if the vessel is in a harbor or under steam in a territorial sea of a specific country, the ballast water can be discharged. When the tank 101 becomes empty, ballast water can be sterilized and transferred between tanks in series as has been described until now."

(16e)

"[0029]

Also, in the above, a case where ballast water is sterilized using the ultrasonic

wave treatment unit 3 and transferred between tanks has been described, it may be such that, in a case where the ultrasonic wave treatment unit 3 has large capacity or when loading or unloading time is long, during such time, untreated ballast water in a ballast tank is discharged outboard directly while performing sterilization treatment of the untreated ballast water by the ultrasonic wave treatment unit 3, or marine water is taken in through the outboard marine water intake system 11 from outside the vessel and put into a ballast tank from the first and the second ballast water systems 15 and 16 while undergoing sterilization treatment by the ultrasonic wave treatment unit 3."

17 Evidence A No. 33
(17a)
"[0020]

As shown in Fig. 2, a marine water supply/discharge system 50 into which a filtration apparatus 10 is incorporated is installed in the ship body 1."
(17b)
"[0028]

The marine water supply/discharge system 50 includes an outward pipework 51. The outward pipework 51 has a starting end (the extreme left of Fig. 2) S coupled to a water intake/discharge pipework 52 for marine water, and a trailing end (the extreme right of Fig. 2) E that branches into nine pieces of ballast tank pipework 53a-53i for performing supply and discharge of filtration marine water to and from the nine ballast tanks 5a-5i. The outward pipework 51 has two pieces of branched pipework 511 and 512 disposed in its mid-course."
(17c)
"[0030]

A marine water introduction pipework 54 is branched from the outward pipework 51 (a portion located between the aforementioned two valves 706 and 707), and its tip is coupled to a marine water introduction part 21 of the filtration apparatus 10 via a flange 20. A filtration marine water taking-out pipework 55 is coupled to a filtration marine water taking-out part 25 of the filtration apparatus 10 at its one end via a flange 24, and, at the other end, it is coupled to the outward pipework 51 (a portion located between the aforementioned two valves 707 and 708)...."
(17d)
"[0034]

Next, operation of supply/discharge of ballast water at the time of unloading/loading of a marine vessel (chip carrier) of the present invention mentioned

above will be described.

[0035]

1) Ballast water supply operation at the time of unloading of a chip carrier

First, the valve 7014 of the marine water intake/discharge pipework 52 constituting the marine water supply/discharge system 50, the valves 701, 706, and 708 of the outward pipework 51, the valves 702-705 of the two pieces of the branching pipework 511 and 512, the valve 709 of the marine water introduction pipework 54, the valve 7010 of the filtration marine water taking-out pipework 55, the valve 7013 of the filtration marine water introduction pipework 57, and the valve 70h of a predetermined one of the pieces of ballast tank pipework (53h, for example) are made to be opened, and the valve 707 of the outward pipework 5, the valve 7015 of the homeward pipework 58, and the valve 7016 of the discharge pipework 59 are made to be closed. By such opening and closing of the valves, in the marine water supply/discharge system 50, a flow is such that marine water is supplied to a ballast tank (5h, for example) through the filtration apparatus 10. Meanwhile, in the valve 7013 of the filtration marine water introduction pipework 57, its opening degree is adjusted so that appropriate quantities of filtration marine water is introduced to a high pressure pump 63.

[0036]

When the two ballast pumps 621 and 622 interposed into the two pieces of branching pipework 511 and 512 are operated, marine water is supplied to the filtration room 17 partitioned by the chassis 12 of the filtration apparatus 10 and the filtration drum 28 with upper and lower lids shown in Fig. 3 and Fig. 4 through the water intake/discharge pipework 52, the outward pipework 51, the two pieces of branching pipework 511 and 512, the outward pipework 51, and the marine water introduction pipework 54...."

(17e)

"[0042]

2) Ballast water discharge operation at the time of loading of chip carrier

A chip carrier that has supplied filtration marine water (ballast water) into the ballast tanks 5a-5i by the above-mentioned operation is made to voyage for a loading port with no loads, and chips are loaded at the loading port (harbor). At this time, ballast water is discharged to the sea depending on the loading weight.

[0043]

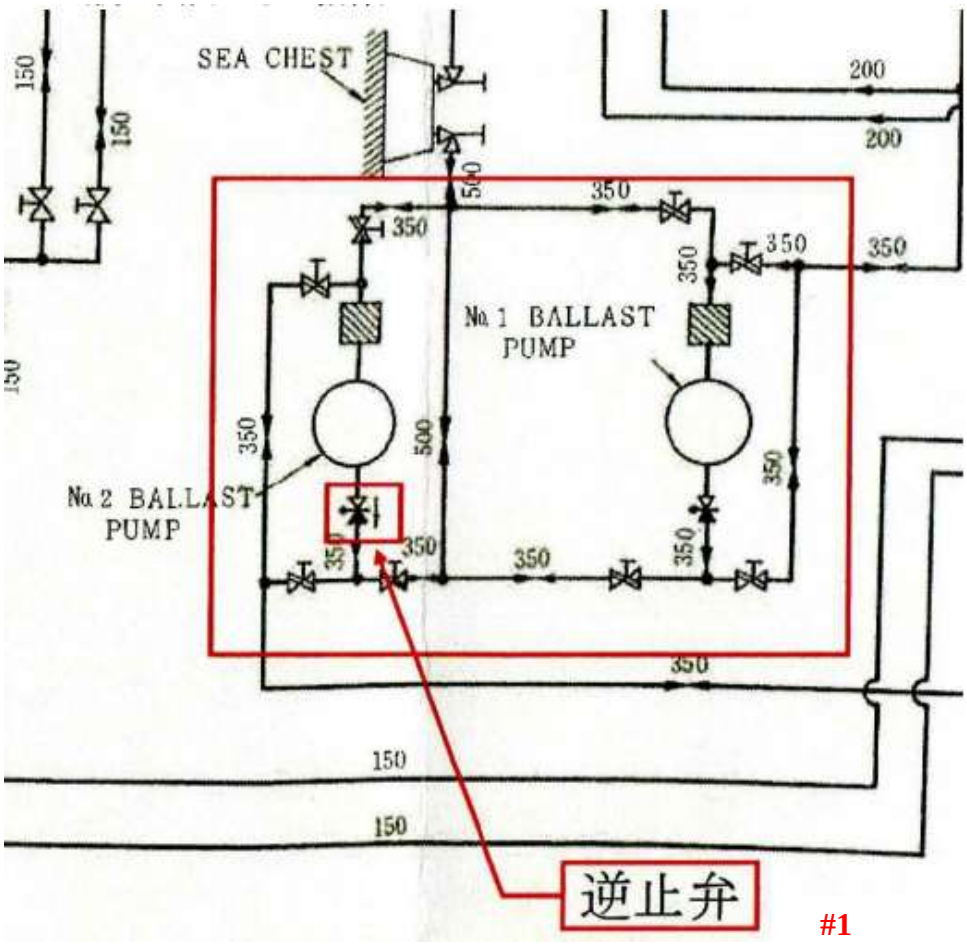
In other words, the valve 70h of predetermined ballast tank pipework (53h, for example) constituting the marine water supply/discharge system 50, the valve 7015 of the homeward pipework 58, the valve 7016 of the discharge pipework 59, and the

valves 702-705 of the two pieces of branching pipework 511 and 512 of the outward pipework 51 are made to be opened, and the valve 7014 of the water intake pipework 52, and the valves 701, 706, and 708 of the outward pipework 51 are made to be closed. By such opening and closing of the valves, in the marine water supply/discharge system 50, a flow is made to be such that filtration marine water (ballast water) in a ballast tank (for example, 5h) installed in the ship body 1 is discharged without going through the filtration apparatus 10 to marine water. In this state, ballast water in the ballast tank 5h flows into the ballast tank pipework 53h, the outward pipework 51, the homeward pipework 58, the outward pipework 51, the two pieces of branching pipework 511 and 512, and, here, by operating the aforementioned interposed ballast pumps 621 and 622, the ballast water is discharged to the sea through the outward pipework 51, the discharge pipework 59, and the water intake/discharge pipework 52."

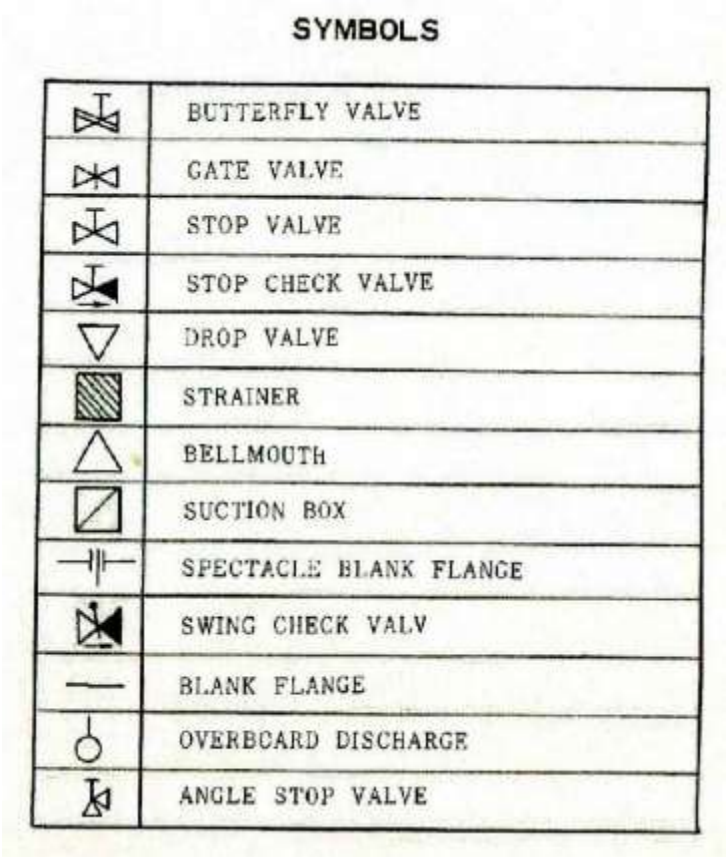
18 Evidence A No. 34

In the drawing of "Example 3 Bulk carrier 64,000LT" in "4.3 Examples of apparatus for each ship", it can be perceived that a check valve (SWING CHECK VALV) is provided in the discharge side of a ballast pump (No.1 BALLAST PUMP, No.2 BALLAST PUMP).

(Extract from the drawing of the example 3)



#1 Check valve



19 Evidence A No. 35

(19a)

"(4) When a measure for reverse rotation is not applied to a pump and a driving machine, a mechanical trouble may be caused in the pump and the driving machine due to reversed current or reverse rotation."(p. 18, ll. 29-31 in the left column)

(19b)

"Measure to prevent pressure rise

Policy To make reversed current hardly occurs at all.

Means Self-closing check valve

Feature Relatively simple as apparatus. Pressure rise is about two times of an actual pump head. Refer to II-4." (Page 22, "Table I A-4-1-2 Measures for preventing water hammering due to pump power dissipation")

(19c)

"§4. Reversed current preventing method

Pressure is high in the discharge side of a pump compared with the take-in side, and, thus, a method for preventing reversed current at the time of stoppage of the pump must be applied as needed." (P. 98, ll. 1-4)

No. 6 Judgment on the body

1 The patent invention 1

(1) Comparison

When the patent invention 1 and the Demandant's-Exhibit-1 invention are compared, a "ballast tank" of the latter corresponds, seen from its function, to a "ballast tank for posture control and securement of stability of a vessel's body" of the former.

A "ballast water treatment system configured to treat microorganisms in ballast water at a time of water intake of ballast water to remove microorganisms, to said ballast water treatment apparatus ballast water being supplied" of the latter corresponds to a "ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy the microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied" of the former.

A "flow path for sucking in ballast water at the time of water intake of ballast water and a flow path for discharging ballast water in the ballast tank from a water discharge port at the time of water discharge of ballast water" of the latter corresponds to a "ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in the ballast tank from a water discharge port at a time of water discharge of ballast water" of the former.

A "pump" of the latter corresponds to a "ballast pump" of the former. As a consequence, a corresponding feature and a different feature of the both are as follows.

[Corresponding feature]

"A marine vessel including: a ballast tank for posture control and for securement of stability of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy microorganisms, to said ballast water treatment apparatus ballast water being supplied; and a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water."

[The different feature 1]

A point that it is specified in the patent invention 1 that a ballast pump "is installed in the engine room", whereas the pump arrangement of the

Demandant's-Exhibit-1 invention is not specified such.

[The different feature 2]

A point that it is specified in the patent invention 1 that "the ballast water treatment apparatus is coupled to the ballast water plumbing configured to supply ballast water taken in from the water intake port to the ballast tank via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework; an on-off valve is disposed in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and the on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge; and an on-off valve is also disposed in the ballast water plumbing between a connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and a connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing, and the on-off valve is made to be closed at a time of water intake and at a time of water discharge, ", whereas, in the Demandant's-Exhibit-1 invention, such arrangement of plumbing and on-off valves is not specified.

[The different feature 3]

A point that it is specified in the patent invention 1 that "in the ballast water plumbing, a check valve is disposed in a lower reach of the ballast pump and in an upper reach of the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing, the check valve only allowing a flow in a direction toward the ballast water treatment apparatus from the ballast pump", whereas the Demandant's-Exhibit-1 invention is not specified that way.

[The different feature 4]

A point that it is specified in the patent invention 1 that "the ballast water treatment apparatus to which ballast water is supplied is arranged in a steering room in a vessel rear", whereas, in the Demandant's-Exhibit-1 invention, arranging a ballast water treatment system in a steering room is only selectively illustrated, and, in addition, it is not specified that the steering room is located in the rear of a marine vessel.

[The different feature 5]

A point that it is specified in the patent invention 1 that "the steering room is configured, by being located above a waterline, to be able to discharge ballast water outboard in case of emergency", whereas the Demandant's-Exhibit-1 invention is not specified in that manner.

(2) Judgment

Each of the above-mentioned different features will be examined as follows:
[Regarding the different feature 1]

In a marine vessel, it is a well-known matter to arrange a ballast pump in an engine room before the application of the Patent of the case (refer to aforementioned 9 (9d), 10 (10b), and 11 of No. 5).

It can be said that it would have been easily arrived at by a person skilled in the art to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 1 relating to the above-mentioned different feature 1 based on the above-mentioned well-known matter.

[Regarding the different feature 2]

Arrangement of plumbing and on-off valves of a ballast water treatment apparatus relating to the above-mentioned different feature 2 is not disclosed in Evidence A No. 2 to Evidence A No. 28, and, it cannot be determined that it would have been easily arrived at from these documents to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 1 relating to the different feature 2.

In the written refutation dated May 20, 2015, the Demandant alleges as follows about a different feature 3 that is recognized by the Demandant and that corresponds to the different feature 2.
"C Easily-arrived property as to different feature 3

Although the corrected invention 1 of the case is an invention in which a ballast water treatment apparatus is installed to ballast water plumbing via branching pipework, it is a well-known and commonly used matter that a marine vessel includes, as ballast water plumbing, a piping system for use at the time of water intake and a piping system for use at the time of water discharge, and, that a ballast water treatment apparatus is installed to the plumbing system of such marine vessel via branching pipework, as shown in Evidence A No. 30 to Evidence A No. 33." (Page 17, ll. 18-23)

"In consideration of the above-mentioned Evidence A No. 30 to Evidence A No. 33, it can be said that, if a ballast water treatment apparatus is tried to be installed to ballast water plumbing, it is a most reasonable and simplified method to install the ballast water treatment apparatus to the pipework of the piping system for use at the time of water intake, for example, via a treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and, in this case, to provide an on-off valve in each of the treatment-apparatus-inlet-side pipework and the

treatment-apparatus-outlet-side pipework, and to control these on-off valves (V6 and V7 of the description of the Patent of the case) such that they are both made to be in the opened state at the time of water intake and be in the closed state at the time of water discharge is also just a normal usage mode of an on-off valve. In addition, there are no significant technical difficulties in making, as a result of installing a ballast water treatment apparatus to the piping system for use at the time of water intake via branching pipework, the opened on-off valve (V2) be kept closed, assuming that the pipework portion between them is not existing from the beginning.

As described above, any pieces of the constitution of the invention after the Correction of the case is, if a ballast water treatment apparatus of Demandant's-Exhibit-1 invention is tried to be applied to a well-known and commonly used marine vessel including a ballast tank and ballast water plumbing, just a design matter that a person skilled in the art can arbitrarily and easily adopt." (Page 31, ll. 2-16)

Based on the above-mentioned allegations, application of matters described in Evidence A No. 30 to Evidence A No. 33 will be examined.

A Regarding Evidence A No. 30

In Evidence A No. 30, there is described a pipework structure in which the on-off valve VBU is provided in the partial intermediate pipe line part 12 in the upstream side of the ballast water treatment unit 100, and the on-off valve VBD is provided in the partial intermediate pipe line part 12 in the downstream side of the ballast water treatment unit 100, respectively, and the bypass pipe line 19 having the on-off valve VB is provided between the pipe line in the upstream side of the upstream supply valve VBU and the pipe line in the downstream side of the downstream supply valve VBD (refer to the aforementioned No. 5 14 (14d) and (14f)).

When the constitution relating to the different feature 2 of the patent invention 1 and the above-mentioned pipework structure described in Evidence A No. 30 are compared, it can be said that "the ballast water treatment unit 100" of the latter corresponds to "the ballast water treatment apparatus" of the former, and, in a similar fashion, "the partial intermediate pipe line part 12" to "the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework", "the on-off valves VBU and VBD" to "on-off valves" each provided in the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, "the bypass pipe line 19" to "the ballast water plumbing" seen from its structure, and "the on-off valve VB" to "the on-off valve" provided in the ballast water plumbing, respectively.

As a consequence, it can be said that there is described, in Evidence A No. 30, the constitution of the patent invention 1 of "the ballast water treatment apparatus is coupled to the ballast water plumbing configured to supply ballast water taken in from the water intake port to the ballast tank via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework; an on-off valve is disposed in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework", and, the constitution of "an on-off valve is also disposed in the ballast water plumbing between a connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and a connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing,".

However, in the patent invention 1, at the time of water discharge, the on-off valves (V6, V7) provided in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and, the on-off valve (V2) provided in the ballast water plumbing between the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and the connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing become the closed state all together, whereas, in the pipework structure described in Evidence A No. 30, when ballast water is discharged from a ballast tank, any of the intermediate pipe line part 12 to which the ballast water treatment unit 100 is provided or the bypass pipe line 19 must be made to be a flow path of ballast water, and, as a consequence, it can be said that, at the time of water discharge, there is no case where all the on-off valve VBU (this corresponds to V6) and VBD (this corresponds to V7) of the intermediate pipe line part 12, and the on-off valve VB (this corresponds to V2) of the bypass pipe line 19 are closed.

Consequently, even if the matters described in Evidence A No. 30 are applied to the Demandant's-Exhibit-1 invention, the constitution of the patent invention 1 relating to the different feature 2 that the on-off valves provided in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework are made to be "closed at the time of water discharge", and the constitution that the on-off valve provided in the ballast water plumbing between the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and the connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing is made to be "closed at the time of water discharge" cannot be made.

B Regarding Evidence A No. 31

In Evidence A No. 31, there is described that the treatment unit II is provided downstream the ballast pump 4, and the constitution is made such that the treatment unit II is located in mid-course of a branching pipe line branching from the existing water intake and discharge system I, and ballast water flows through the treatment unit II by switching of valves (refer to the aforementioned No. 5 15 (15a), (15b), and (15d)).

Then, based on this statement, the Demandant has presented in the written refutation (refer to page 23) dated May 20, 2015 a pipework structure in which the on-off valve i is provided in the pipework e upstream the treatment unit II, the on-off valve j is provided downstream the pipework f, and the on-off valve m is provided in the bypass pipe line k between the connecting point g between the pipework e and the existing water intake and discharge system I and the connecting point h between the pipework f and the existing water intake and discharge system I.

When the constitution of the patent invention 1 relating to the different feature 2 and the pipework structure presented by the Demandant based on the statement of Evidence A No. 31 are compared, it can be said that the "on-off valves i and j" of the latter correspond to the "on-off valves" provided in the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework of the former, respectively, and, in a similar fashion, the "on-off valve m" corresponds to the "on-off valve" provided in the ballast water plumbing. However, in the pipework structure described in Evidence A No. 31, when ballast water is discharged from a ballast tank, any one of the existing water intake and discharge system I or the branching pipe line in which the treatment unit II is provided must be made to be a flow path of ballast water, and, as a consequence, even if the on-off valve m is provided in the bypass pipe line k that is the existing water intake and discharge system I, and the on-off valves i and j are provided in the pipework e and the pipework f that are the branching pipe lines, the on-off valve m must be made to be opened or the on-off valves i and j must be made to be opened at the time of water discharge, and, therefore, it can be said that there is no case where the all valves are closed.

Consequently, even if the matters described in Evidence A No. 31 are applied to the Demandant's-Exhibit-1 invention, the constitution of the patent invention 1 relating to the different feature 2 that the on-off valves provided in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework are made to be "closed at the time of water discharge", and the constitution that the on-off valve provided in the ballast water plumbing between the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and the connecting point between the treatment-apparatus-outlet-side

pipework and the ballast water plumbing is made to be "closed at the time of water discharge" cannot be made.

C Regarding Evidence A No. 32

In Evidence A No. 32, there is described that a system including the branch sending-in system 14, the ultrasonic wave treatment unit 3, and the branch sending-out system 24, and the pump bypass system 3a bypassing the former system is provided, and valves and the like are provided to make each of the systems be usable corresponding to their objectives (refer to the aforementioned No. 5 16 (16a)-(16c).

In the pipework structure described in Evidence A No. 32, when ballast water is discharged from a ballast tank, any one of the system in which the ultrasonic wave treatment unit 3 is provided or the pump bypass system 3a is needed to be a flow path of ballast water, and, as a consequence, even valves corresponding to the "on-off valve" provided in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and the "on-off valve" provided in the ballast water plumbing in the patent invention 1 are provided in any of the systems, it can be said that there is no case that all the valves are closed at the time of water discharge.

Consequently, even if the matters described in Evidence A No. 32 are applied to the Demandant's-Exhibit-1 invention, the constitution of the patent invention 1 relating to the different feature 2 that the on-off valves provided in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework are made to be "closed at the time of water discharge", and the constitution that the on-off valve provided in the ballast water plumbing between the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and the connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing is made to be "closed at the time of water discharge" cannot be made.

D Regarding Evidence A No. 33

In Evidence A No. 33, there is described a pipework structure that the marine water introduction pipework 54 branching from the outward pipework 51 is coupled to the filtration apparatus 10 via the valve 709, the filtration marine water taking-out pipework 55 is connected to the outward pipework 51 from the filtration apparatus 10 via the valve 7010, and the valve 707 is placed between the portion of the outward pipework 51 where the marine water introduction pipework 54 is branched and the portion where the filtration marine water taking-out pipework 55 is coupled to (refer to

the aforementioned No. 5 17 (17b) and (17c)).

When the constitution of the patent invention 1 relating to the different feature 2 and the constitution described in Evidence A No. 33 are compared, it can be said that the "valves 709 and 7010" of the latter correspond to "on-off valves" provided in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework of the former, and, in a similar way, the "valve 707" corresponds to the "on-off valve" provided in the ballast water plumbing.

However, in Evidence A No. 33, although there is described that the valve 707 is made to be closed on the occasion of ballast water supply operation, there is no statement regarding opening and closing of the valves 707, 709, and 7010 at the time of ballast water discharge operation (refer to the aforementioned No. 5 17 (17d) and (17e)).

In addition, because, at the time of water discharge, the valves 706 and 708 that are upstream and downstream the valve 707 are made to be closed together, there is no need to bother to make all of the valves 707, 709, and 7010 be opened and closed.

Meanwhile, although it could be seen as a state at the time of ballast water supply is being kept, even in that case, even if the valve 707 is closed, the valves 709 and 7010 are in an opened state, and, therefore, even if such assumption holds, it cannot be recognized that the all valves are in a closed state.

E Regarding application of Evidence A No. 30 to Evidence A No. 33

As mentioned above, in Evidence A No. 30 to Evidence A No. 33, it can be said that there is described or suggested a pipework structure that two flow paths of a flow path of a ballast water treatment apparatus and a flow path bypassing the former flow path are provided, and a valve is provided in each of the flow paths.

However, when paying attention to an aspect to discharge ballast water from a ballast tank in the pipework structures described in each of the pieces of Evidence A, in the aspects of Evidence A No. 30 to Evidence A No. 32, the two flow paths cannot be closed at the same time, and, in the aspect of Evidence A No. 33, operations of the valves (valve 707, 709, and 7010) of the bypass flow path (the outward pipework 51) is not clear.

Consequently, even if it can be judged that, from the matters described in Evidence A No. 30 to Evidence A No. 33, the constitution of the patent invention 1 relating to the different feature 2 that "the ballast water treatment apparatus is coupled to the ballast water plumbing configured to supply ballast water taken in from the water intake port to the ballast tank, via a treatment-apparatus-inlet-side pipework and a

treatment-apparatus-outlet-side pipework; an on-off valve is disposed in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework" and "an on-off valve is also disposed in the ballast water plumbing between a connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and a connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing," is well-known before the application of the Patent of the case, it cannot be judged that it is a well-known and commonly used matter when the constitution that all the on-off valves "are made to be closed at the time of water discharge," is included.

Accordingly, it cannot be said that, even if the described matters of Evidence A No. 30 to Evidence A No. 33 are applied to the Demandant's-Exhibit-1 invention, a person skilled in the art would have been easily arrived at the constitution of the patent invention 1 relating to the different feature 2.

[Regarding different feature 3]

That a check valve is provided in the ejection side of a ballast pump is described in Evidence A No. 34 (refer to the described matters of Evidence A No. 34 in the aforementioned No. 5 18), and it can be said that it is a well-known matter before the application of the Patent of the case.

Consequently, it can be said that it would have been easily arrived at by a person skilled in the art to, by providing a check valve in the ejection side of a ballast pump of the Demandant's-Exhibit-1 invention, make it be the constitution of the patent invention 1 relating to the different feature 3.

Meanwhile, although the Demandee disputes the feasibility of Evidence A No. 35 as mentioned in the proviso of No. 4 1, without needing to take the content of the statements of Evidence A No. 35 into consideration, it can be judged that it is a well-known matter before the application the Patent of the case to provide a check valve in the ejection side of a ballast pump as mentioned above, from the statement of Evidence A No. 34.

[Regarding the different feature 4]

In Demandant's Exhibit No. 1, there is described that "1. 0 Introduction

In chart 1, the standards from International Maritime Organization (IMO) relating to ballast water is shown. The standards indicate the maximum number of predetermined microorganisms allowed in ballast water to be dumped. There are two ways to comply with the standards." (refer to the aforementioned No. 5 1 (1b)).

In addition, in paragraph [0011] of Evidence A No. 9, there is described that "In particular, according to a consensus document made by IMO (International Maritime Organization), it is necessary to control the number of microorganisms such as zooplankton and phytoplankton included in ballast water to $10/m^3$ or less, and the number of bacilli such as bacteria to 10/cc or less by year 2009." (refer to aforementioned No. 5 9 (9a)).

From the above, it can be said that it was a well-known matter before the application of the patent of the case for a person skilled in the art that there is obligation to install a ballast water treatment apparatus also in an existing marine vessel.

It is a well-known matter before the application of the patent of the case that a steering room is located in the rear of a marine vessel, and, in addition, above the waterline (refer to the described matters of Evidence A No. 2 to Evidence A No. 5 in the aforementioned No. 5 2-5, and, the described matters of Evidence A No. 19 to Evidence A No. 27 of the aforementioned No. 5 13).

Then, in Demandant's Exhibit No. 1, there is described that "1.3 Installation Outline Figure 6 shows the ship installation concept. The system is to be installed in a non-hazardous area such as the engine room or the steering room." (refer to No. 5 1 (1d)), and, thus, it can be said that the steering room is cited as one recommended compartment (candidate) of an installation compartment.

Consequently, in a marine vessel in which a steering room is arranged in the rear of the marine vessel and the steering room is located above the waterline, which is well-known before the application of the patent of the case, it would have been easily arrived at by a person skilled in the art to select the steering room as an installation compartment of a ballast water treatment apparatus.

Accordingly, it can be said that it would have been easily arrived at by a person skilled in the art to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 1 relating to the different feature 4 based on the well-known matter.

[Regarding the different feature 5]

As examined in the different feature 4, it would have been easily arrived at by a person skilled in the art to arrange a ballast water treatment apparatus of the Demandant's-Exhibit-1 invention in the steering room located above the waterline, and, it can be said that it is obvious that, when such arrangement is made, the water in the ballast water treatment apparatus is in a state that it tries to drop to the waterline by the gravity naturally. However, it cannot be said that it is also obvious that, by the reason of such arrangement, water discharge is performed in case of emergency outboard, and,

in addition, constituting so that water discharge may be made from a ballast water treatment apparatus outboard in case of emergency is not shown in any of the Exhibit As.

Although the Demandant also alleges that the different feature 5 is just a morphological different feature (pp. 33-35 of the written refutation), ballast water cannot be discharged outboard only by "allocating a steering room above the waterline". Therefore, it is obvious that it is essential for the patent invention 1 to include specific constitution for that, and, thus, it cannot be said that the different feature 5 is just a morphological different feature.

Consequently, it cannot be said that it would have been easily arrived at by a person skilled in the art to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 1 relating to the different feature 5.

(3) Summary

As mentioned above, it cannot be judged that the patent invention 1 would be easily invented by a person skilled in the art based on the Demandant's-Exhibit-1 invention, and the inventions or the well-known art or the well-known and commonly used matters described in one of Evidence A No. 2 to Evidence A No. 12.

2 Regarding the patent invention 2

(1) Comparison

When the patent invention 2 and the Demandant's-Exhibit-1 invention are compared, the both are identical in a point similar to the above-mentioned 1 (1) [Corresponding feature], and different not only in points similar to the aforementioned 1 (1) [The different feature 1] to [The different feature 5], but also in the following point.

[The different feature 6]

A point that the patent invention 2 is specified as "a ballast water treatment apparatus has a block construction including a first processing unit and a second processing unit, the first processing unit is arranged in a steering room or on a deck provided in an open space of the steering room, and the second processing unit is installed on a floor surface of the steering room", whereas the Demandant's-Exhibit-1 invention is not specified in that manner.

(2) Judgment

Since [the different feature 1] to [the different feature 5] have been already

examined, [the different feature 6] will be examined.

[Regarding the different feature 6]

In Demandant's Exhibit No. 1, there is described that "1.1 Ballast water treatment system Figure 1 is a diagram of our system. There are three units in our system." (Refer to aforementioned No. 5 1 (1c)).

It can be said that, in the Demandant's-Exhibit-1 invention, it would be done by a person skilled in the art accordingly to divide a ballast water treatment apparatus into a plurality of units.

Then, as examined in the above 1 (2) [Regarding the different feature 4], it can be said that it would have been easily arrived at by a person skilled in the art, in the Demandant's-Exhibit-1 invention, to arrange a ballast water treatment apparatus in a steering room, and alignment of each unit constituting the ballast water treatment apparatus in the steering room is a design matter that a person skilled in the art can perform accordingly.

Therefore, it can be said that it would have been easily arrived at by a person skilled in the art to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 2 relating to the different feature 6.

(3) Summary

Thus, in view of the different features 1 to 6 comprehensively, it cannot be judged that the patent invention 2 would be easily invented by a person skilled in the art based on the Demandant's-Exhibit-1 invention, and on the inventions or the well-known art and the well-known commonly used matters described in one of Evidence A No. 2 to Evidence A No. 12.

3 Regarding the patent invention 3

(1) Comparison

When the patent invention 3 and the Demandant's-Exhibit-1 invention are compared, they are identical in a point similar to the aforementioned 1 (1) [Corresponding feature], and different in points similar to the above 1 (1) [The different feature 1]-[The different feature 5] and the above-mentioned 2 (1) [The different feature 6], and, further, different in the following point.

[The different feature 7]

A point that the patent invention 3 is specified as "a stern void space such as an aft peak tank is used as a buffer tank of a ballast water treatment apparatus", whereas

the Demandant's-Exhibit-1 invention is not specified that way.

(2) Judgment

Because [the different feature 1] to [the different feature 6] have been examined already, [the different feature 7] will be examined.

[Regarding the different feature 7]

A marine vessel in which an aft peak tank is arranged below a steering room is well-known and commonly used one before the application of the patent of the case (refer to No. 5 4 (4b), 5, and 6 (6c) above, for example). Then, when considering which compartment should be utilized as a buffer tank of a ballast water treatment apparatus, it is easily presumed that a void space that is an open space in a vessel and there exist no obstacles to take water into it is nominated as candidate, and, if a ballast water treatment apparatus is one installed in a steering room in the stern part, selecting, on that occasion, a void space such as an aft peak tank in the stern part would have been easily arrived at by a person skilled in the art.

Furthermore, the effects according to the patent invention 3 is within a range that a person skilled in the art can predict from the Demandant's-Exhibit-1 invention and the well-known commonly used matters, and, thus, it cannot be said that it is particular.

Accordingly, it can be said that it would have been easily arrived at by a person skilled in the art to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 3 relating to the different feature 7 based on the well-known commonly used matters.

(3) Summary

Thus, in view of the different features 1 to 7 comprehensively, it cannot be judged that the patent invention 3 would be easily invented by a person skilled in the art based on the Demandant's-Exhibit-1 invention, and on the invention or the well-known art and well-known commonly used matters described in one of Evidence A No. 2 to Evidence A No. 12.

4 Regarding the patent invention 4

(1) Comparison

Because, in the Demandant's-Exhibit-1 invention, "a ballast water treatment system is installed in a non-hazardous area such as an engine room and a steering room", it has the matter that "a steering room is a non-hazardous area" that is specified in the patent invention 4.

When the patent invention 4 and the Demandant's-Exhibit-1 invention are compared, the both are identical in a point similar to the aforementioned 1 (1) [Corresponding feature], and different in a point similar to the above-mentioned 1 (1) [The different feature 1] to [The different feature 5].

(2) Judgment

[The different feature 1] to [The different feature 5] have been already examined.

(3) Summary

In view of the different features 1 to 5 comprehensively, it cannot be judged that the patent invention 4 would be easily invented by a person skilled in the art based on the Demandant's-Exhibit-1 invention and on the invention or the well-known art and well-known commonly used matters described in one of Evidence A No. 2 to Evidence A No. 12.

5 Regarding the patent invention 5

(1) Comparison

When the patent invention 5 and the Demandant's-Exhibit-1 invention are compared, the both are identical in a point similar to the above 1 (1) [Corresponding feature], and different in points similar to the above 1 (1) [The different feature 1] to [The different feature 5], and, further, different in the following point.

[The different feature 8]

A point that, in the patent invention 5, it is specified that "the steering room is adjacent to an engine room in which a ballast pump is installed", whereas, in the Demandant's-Exhibit-1 invention, it is not specified in that manner.

(2) Judgment

Because [the different feature 1] to [the different feature 5] have been already examined, [the different feature 8] will be examined.

[Regarding the different feature 8]

A steering room is provided adjacent to an engine room generally, and it is a well-known commonly used matter before the application of the patent of the case (refer to No. 5 2, 3, 4 (4a), 5, and 6 (6b) above).

In addition, a marine vessel provided with an engine room in which a ballast pump is installed is well known before the application of the patent of the case (refer to

No. 5 9 (9d), and 10 (10b)).

As examined in the above-mentioned 1 (2) [Regarding the different feature 4], it would have been easily arrived at by a person skilled in the art to arrange a ballast water treatment apparatus of the Demandant's-Exhibit-1 invention in a steering room based on the well-known matters, and, it would also have been easily arrived at by a person skilled in the art to make, on that occasion, the steering room be adjacent to the engine room, as is the case with the patent invention 5 relating to the different feature 8, based on the well-known commonly used matters.

(3) Summary

In view of the different features 1-5 and 8 comprehensively, it cannot be judged that the patent invention 5 would be easily invented by a person skilled in the art based on the Demandant's-Exhibit-1 invention and on the invention or the well-known art and the well-known commonly used matters described in one of Evidence A No. 2 to Evidence A No. 12.

6 Regarding the patent invention 6

(1) Comparison

When the patent invention 6 and the Demandant's-Exhibit-1 invention are compared, a "ballast tank" of the latter corresponds to a "ballast tank for posture control and for securement of stability of a vessel's body" of the former seen from its function.

A "ballast water treatment system configured to treat microorganisms in ballast water at a time of water intake of ballast water to remove the microorganisms, to said ballast water treatment apparatus ballast water being supplied" of the latter corresponds to a "ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy the microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied" of the former.

A "flow path for sucking in ballast water at the time of water intake of ballast water and a flow path for discharging ballast water in the ballast tank from a water discharge port at the time of water discharge of ballast water" of the latter corresponds to "ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in the ballast tank from a water discharge port at a time of water discharge of ballast water" of the former.

A "pump" of the latter corresponds to a "ballast pump" of the former.

As a consequence, a corresponding feature and different features of the both

are as follows.

[Corresponding feature]

"A marine vessel including: a ballast tank for posture control and for securement of stability of a vessel's body; a ballast water treatment apparatus configured to treat microorganisms and the like in ballast water at a time of water intake of ballast water to remove or destroy the microorganisms and the like, to said ballast water treatment apparatus ballast water being supplied; a ballast pump provided in ballast water plumbing configured to suck in ballast water from a water intake port at a time of water intake of ballast water and discharge ballast water in said ballast tank from a water discharge port at a time of water discharge of ballast water."

[The different feature 9]

A point that, in the patent invention 6, a ballast pump is specified as "installed in an engine room", whereas, in the Demandant's-Exhibit-1 invention, arrangement of a pump is not specified in that manner.

[The different feature 10]

A point that, in the patent invention 6, it is specified as "the ballast water treatment apparatus is coupled to the ballast water plumbing configured to supply ballast water taken in from the water intake port to the ballast tank via a treatment-apparatus-inlet-side pipework and a treatment-apparatus-outlet-side pipework; an on-off valve is disposed in each of the treatment-apparatus-inlet-side pipework and the treatment-apparatus-outlet-side pipework, and the on-off valves are made to be opened at a time of water intake and to be closed at a time of water discharge; and an on-off valve is also disposed in the ballast water plumbing between a connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing and a connecting point between the treatment-apparatus-outlet-side pipework and the ballast water plumbing, and the on-off valve is made to be closed at a time of water intake and at a time of water discharge,", whereas, in the Demandant's-Exhibit-1 invention, it is not specified about the structure of pipework and the on-off valves.

[The different feature 11]

A point that, in the patent invention 6, it is specified as "in the ballast water plumbing, a check valve is disposed in a lower reach of the ballast pump and in an upper reach of the connecting point between the treatment-apparatus-inlet-side pipework and the ballast water plumbing, the check valve only allowing a flow in a

direction toward the ballast water treatment apparatus from the ballast pump,", whereas, in the Demandant's-Exhibit-1 invention, it is not specified in that manner.

[The different feature 12]

A point that, in the patent invention 6, it is specified as "a ballast water treatment apparatus to which ballast water is supplied is arranged in a non-hazardous area in the rear side of a marine vessel, and above the waterline of the marine vessel and, at the same time, below the top part of a ballast tank,", whereas, in the Demandant's-Exhibit-1 invention, arranging a ballast water treatment system in a steering room is illustrated just selectively, and, in addition, it is not specified that the steering room is located in the rear of the marine vessel.

[The different feature 13]

A point that, in the patent invention 6, it is specified as "by a ballast water treatment apparatus being located above the waterline, it is constituted so that, in case of emergency, ballast water from the ballast water treatment apparatus can be discharge outboard", whereas, in the Demandant's-Exhibit-1 invention, it is not specified in that manner.

(2) Judgment

Because [The different feature 9] to [The different feature 11] are the same as the above-mentioned 1 (1) [The different feature 1] to [The different feature 3], examination about these is as has been described in the above-mentioned 1 (2) [Regarding the different feature 1] to [Regarding the different feature 3].

Then, [The different feature 12] and [The different feature 13] will be examined below.

[Regarding the different feature 12]

In Demandant's Exhibit No. 1, there is described that "The system is to be installed in a non-hazardous area such as the engine room or the steering room." (refer to No. 5 1 (1d) above), and, in Demandant's Exhibit No. 1, a steering room is illustrated as a non-hazardous area to install a "ballast water treatment apparatus". Then, it is a well-known commonly used matter before the application of the patent of the case that, generally, a steering room is arranged above the waterline of a marine vessel and below the top part of a ballast tank (refer to No. 5 2, 3, 4 (4a), and 5 above).

In Demandant's Exhibit No. 1, there is described that "1. 0 Introduction

In chart 1, the standards from International Maritime Organization (IMO) relating to ballast water is shown. The standards indicate the maximum number of predetermined microorganisms allowed in ballast water to be dumped. There are two

ways to comply with the standards." (Refer to No. 5, 1 (1b) above).

In addition, in Evidence A No. 9, there is described that "in particular, according to a consensus document made by IMO (International Maritime Organization), it is necessary to control the number of microorganisms such as zooplankton and phytoplankton included in ballast water to 10/m3 or less, and the number of bacilli such as bacteria to 10/cc or less by year 2009." (Refer to No. 5, 9 (9a), paragraph [0011]).

From the above, it can be said that it was a well-known matter for a person skilled in the art before the application of the patent of the case that obligation to install a ballast water treatment apparatus also in an existing marine vessel occurs.

In such background, it is assumed that matters to be taken into consideration by a person skilled in the art when considering an installation compartment of a ballast water treatment apparatus in a non-hazardous area within a marine vessel is that there exists an open space capable of installation, and that, regarding pipework and a pump and the like to a ballast tank, existing ones are utilized as much as possible and so on. Therefore, it would be easily arrived at by a person skilled in the art that a person skilled in the art coming into contact with the Demandant's-Exhibit-1 invention selects a steering room that is one of the options of a steering room and an engine room illustrated as an installation compartment of a ballast water treatment apparatus.

In addition, the matter that such steering room is located above the waterline and below the top part of a ballast tank is not special, but rather a well-known commonly used matter, and, by applying the Demandant's-Exhibit-1 invention to such well-known commonly used matter, a ballast water treatment apparatus is arranged in a steering room, and, as a result, the ballast water treatment apparatus comes to be arranged above the waterline and below the top part of a ballast tank.

Then, looking into the description of the Patent of the case (Evidence A No. 29, 3), there is the following statements relating to a positional relationship in the upper and lower direction among a ballast water treatment apparatus, a waterline, and a ballast top part.

A "When specifically described, because of the above-mentioned vibration problem, the open space of the steering room 9 is remained as a place (open space) not suitable for installation of equipment and the like usually. However, because the ballast water treatment apparatus 20 is used mainly at the time of stoppage of the LNG carrier 1, usage in a state where the above-mentioned vibration does not exist will be possible. Focusing attention on the above-mentioned marine vessel structure, the inventors have

discovered that the steering room 9 is the optimum as an installation location of the ballast water treatment apparatus 20." (Paragraph [0027])

B "From the viewpoint of whether being adjacent to the ballast pump 13, it is also thinkable that the ballast water treatment apparatus 20 is installed in the engine room 8. However, a space within the engine room 8 in usual marine vessel design is deemed to be a place where various kinds of equipment and the like are arranged considering maintenance work and operability except for a case where there are special requirements. Furthermore, the actual condition inside the engine room 8 is that, considering need for easiness of walking and workability, just the bare essentials of open spaces to enable installation and maintenance of equipment are secured, and, thus there is no extra open spaces existing, substantially. Therefore, if the ballast water treatment apparatus 20 is tried to be installed in the engine room 8, significant change of the vessel's body structure and the hull form is needed such as changing hull design so that the engine room 8 can be made large.

In particular, when applying it to an existing vessel, remodeling the engine room 8 to install the ballast water treatment apparatus 20 requires large-scaled remodeling work of the vessel's body structure. Because such remodeling work is accompanied by increase of cost and increase of a construction period, there are a lot of problems in making the engine room 8 be the installation location of the ballast water treatment apparatus 20, and, thus, it is extremely difficult." (Paragraph [0028])

C "In addition, in the case of the ballast water treatment apparatus 20 of an open-atmospheric-system type, for the purpose of battening down the hatches, it should be avoided to install it below the waterline 40 of the marine vessel from its constitutional reason. On the other hand, when the ballast water treatment apparatus 20 is installed above the top part of the ballast tank 6 and the existing ballast pump 13 is utilized, extra remodeling such as increasing ejection pressure of the ballast pump 13 is needed and waste is generated. Therefore, in the case of the ballast water treatment apparatus 20 of the open atmospheric system type, it can be said that it is extremely reasonable to install it in the steering room 9 located above the waterline 40 of a marine vessel and below the top part of the ballast tank 6." (Paragraph [0031])

D "In this way, according to the above-mentioned marine vessel structure of the present invention, about the ballast water treatment apparatus 20 installation of which will be obligation in the future, a significant change of design of a vessel's body and a hull form is not needed, and, furthermore, even in a case of installing it by remodeling a new-built ship or an existing marine vessel, a ballast water treatment apparatus of a wide variety of schemes can be installed easily in a wide variety of marine vessels. In other words,

the present invention is an invention that effectively utilizes an open space of the steering room 9 necessary as a marine vessel structure, and is an invention in which it has found out that the steering room 9 having a small constraint on arrangement and a small influence on other marine vessel structures is the optimum installation location of the ballast water treatment apparatus 20 in a marine vessel structure." (Paragraph [0032])

E "In addition, because the steering room 9 is adjacent to and close to the engine room 8 where the ballast pump 13 is installed, a pipework length and a pipework installation space needed for the treatment-apparatus-inlet-side pipework 15 and the treatment-apparatus-outlet-side pipework 16 may be small, and a pressure loss that comes with ballast water treatment can be also suppressed to the minimum.

In addition, because the steering room 9 is a non-hazardous area, there is also an advantage that the restriction against various kinds of control equipment and electric equipment and the like may be small.

Furthermore, the steering room 9 is located at above the waterline of a marine vessel, and, therefore, there is also an advantage that ballast water can be discharged outboard easily in case of emergency." (Paragraph [0033])

When putting together the contents of these statements and the contents of the drawings of the Patent of the case (refer to Evidence A No. 28), in the description and the drawings of the Patent of the case, compartments other than a steering room is not indicated in particular as an arrangement compartment of a ballast water treatment apparatus, and only the steering room is shown. In addition, regarding a non-hazardous area, there is described only that, since the steering room in question is a non-hazardous area, it has an advantage. From the above, it can be said that, in the patent invention 6, non-hazardous areas that can solve the problem shown in the description of the Patent of the case other than a steering room were not supposed at the time of its application.

From the above, it would have been easily arrived at by a person skilled in the art to arrange, based on the Demandant's-Exhibit-1 invention, a ballast water treatment apparatus in a well-known commonly used marine vessel in which a steering room that is a non-hazardous area as mentioned above is located above the waterline and, in addition, below the top part of a ballast tank, and make it be of the constitution of the patent invention 6 relating to the different feature 12.

[Regarding the different feature 13]

It would have been easily arrived at by a person skilled in the art to make a ballast water treatment apparatus of the Demandant's-Exhibit-1 invention be positioned above the waterline.

However, as examined in the above-mentioned 1 (2) [Regarding the different feature 5], it cannot be said that "configuring so as to be able to discharge ballast water outboard in case of emergency" would have been easily arrived at by a person skilled in the art.

Consequently, it cannot be said that it would have been easily arrived at by a person skilled in the art to make the Demandant's-Exhibit-1 invention be of the constitution of the patent invention 6 relating to the different feature 13.

(3) Summary

As mentioned above, it cannot be judged that the patent invention 6 would be easily invented by a person skilled in the art based on the Demandant's-Exhibit-1 invention and on the invention or the well-known art and the well-known commonly used matters described in one of Evidence A No. 2 to Evidence A No. 12-1.

7 Summary

As mentioned in the above 1 to 6, it cannot be said that granting the patents relating to the patent inventions 1-6 violates the provisions of Article 29(2) of the Patent Act, and, thus, it cannot be said that the reasons for invalidation alleged by the Demandant have reasons.

No. 7 Conclusion

As described above, the patents relating to the patent inventions 1-6 cannot be made invalidated by the reasons alleged by the Demandant and by the furnished means of proof.

The costs in connection with the trial shall be borne by the Demandant under the provisions of Article 61 of the Code of Civil Procedure which is applied mutatis mutandis pursuant to the provisions of Article 169(2) of the Patent Act.

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

October 19, 2015

Chief administrative judge:	TORII, Minoru
Administrative judge:	HIRATA, Nobukatsu
Administrative judge:	WADA, Yuji