

Advisory Opinion

Advisory Opinion No. 2014-600038

Fukuoka, Japan

Demandant

MARINE HYDROTEC CO. LTD.

Fukuoka, Japan

Patent Attorney

NAKAMAE, Fujio

Fukuoka, Japan

Demandee

OS SYSTEM COMPANY

Fukuoka, Japan

Patent Attorney

MATSUO, Kenichiro

Fukuoka, Japan

Patent Attorney

ICHIKAWA, Yasuo

Regarding the case of requesting an advisory opinion on the technical scope of Japanese Patent No. 5543258 between the above parties, the advisory opinion is rendered as described in the following conclusion.

Conclusion

The "tugboat winch" shown in the drawings and explanatory document of Article A does not belong to the technical scope of the invention disclosed in Patent No. 5543258.

Reason

No. 1 Object of the demand

The object of the subject demand for an advisory opinion is to seek a determination that the combined windlass and towing winch (= a tugboat winch hereinafter referred to as "the device of Article A") shown in the drawings and explanatory document of Article A does not belong to the technical scope of the

invention disclosed in Patent No. 5543258 (hereinafter referred to as "the patent invention").

No. 2 Patent invention

1. Constituent components of the patent invention

As seen from the description (hereinafter referred to as "patent description"), the scope of claims, and the drawings attached to the application as of the establishment and registration of the patent right filed in relation to this application, the patent invention is exactly as specified by the matters described in claim 1 in the scope of claims. The constituent components of the patent invention are separately described as follows:

"A) A tugboat winch (A) configured to be mounted on a deck of a hull, and to be able to unwind and wind towing ropes (10, 10) and anchor chains (20, 20), wherein

B) a shaft body (3) is interlockingly connected to a transmission shaft (21) serving as an output shaft of a hydraulic motor (M) through various types of gear,

C) a proximal end portion and a distal end portion of the shaft body (3) are supported by a gear case (7) of various types of gear and support frames (6, 6) through a bearing (4) as a bearing including a self-aligning roller,

D) a support portion by the bearing (4) has a sealed bearing structure by a seal member (40),

E) the shaft body (3) has a first drum (1) for winding a rope (10) loosely fitted in a position distant from the transmission shaft (21) and a second drum (2) for winding an anchor chain (20) loosely fitted in a position near the transmission shaft (21) respectively,

F) further, a first clutch (11) is interposed between the first drum (1) and the shaft body (3), and a second clutch (22) is interposed between the second drum (2) and the shaft body (3) respectively,

G) the first clutch (11) and the second clutch (22) are dog clutches including fixed tooth portions (11a, 22a) disposed on the first and second drums (1, 2) and sliding tooth portions (11b, 22b) axially slidably and integrally rotatably attached to the shaft body (3) through first and second keys (31, 32) respectively.

H) a grease reservoir (12) of an annular groove is disposed on an inner peripheral surface of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22), grease is filled beforehand in the grease reservoir (12), and the grease reservoir (12) is sealed by seal members (14, 14) disposed at axially front and rear ends of

sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12),

I) two grease nipples (13) communicating with the grease reservoir (12) are configured to be disposed on an outer peripheral surface of the sliding tooth portions (11b, 22b) so that at grease filling, one grease nipple (13) can be removed to fill in grease from the other grease nipple (13),

J) further, a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is configured to be subject to anti-rust treatment of grinding after SUS-overlay welding to prevent rust from forming due to sea spray or the like, and

K) the tugboat winch" (the separately described constituent component is hereinafter referred to as "constituent component A" or the like).

2. Object and function and effect of the patent invention

(1) The object of the patent invention is recognized as described in the following paragraphs of the patent description.

"[0007]

... Omitted ... A sliding portion between a shaft body 300 and a member such as a first drum 100, a second drum 200, a first clutch 110, and a second clutch 220 of the conventional winch needs to be regularly greased to prevent seizing and rusting.

[0008]

Therefore, even if grease is appropriately applied at an appropriate timing, grease falls on the floor or is scattered around, resulting in severe contamination by grease around the winch. This requires cleaning work for removing unwanted grease, and hence a crew member has to bear the burden of unnecessary service. In addition, there may be cases where the removed grease is accidentally dumped into the sea, which are not preferable from the viewpoint of environmental protection.

[0009]

Further, when a crew member actuates the clutch during cleaning work of the winch, his or her finger may be pinched, leading to a possibility of injury which is dangerous. Thus, there is a request from the field to preferably eliminate the need of maintenance such as cleaning of the winch.

[0010]

The present invention has been made in view of such circumstances and has an object to provide a maintenance-free tugboat winch including at least the clutch having a sealed structure with grease encapsulated therein."

According to the description (the paragraphs [0007] to [0010]), there is a circumstance where a sliding portion between a shaft body 300 and a member such as a first drum 100, a second drum 200, a first clutch 110, and a second clutch 220 of the conventional winch needs to be regularly greased to prevent seizing and rusting. Therefore, even if grease is appropriately applied at an appropriate timing, grease falls on the floor or is scattered around, resulting in severe contamination by grease around the winch. This requires cleaning work for removing unwanted grease, and hence a crew member has to bear the burden of unnecessary service.

In addition, there is a circumstance where there may be cases where the removed grease is accidentally dumped into the sea, which are not preferable from the viewpoint of environmental protection.

Further, there is a circumstance where when a crew member actuates the clutch during cleaning work of the winch, his or her finger may be pinched, leading to a possibility of injury which is dangerous. Thus, there is a request from the field to preferably eliminate the need of maintenance such as cleaning of the winch.

The present invention has been made in view of such circumstances and an object thereof is to provide a maintenance-free tugboat winch including at least the clutch having a sealed structure with grease encapsulated therein.

(2) The effects of the patent invention are recognized as follows.

A. The effects of the patent invention are described in the following paragraphs of the patent description. "According to the present invention, the shaft body rotating interlocked with a drive source slidably includes a first drum for winding a towing rope, a second drum for winding an anchor chain, further a first clutch for switching the power transmission on and off to and from the first drum, and a second clutch for switching the power transmission on and off to and from the second drum, while the shaft body can prevent grease or the like from leaking from the sliding portion between each of the clutches and the shaft body. Therefore, there is no fear of grease contamination around the winch. In addition, the need of grease cleaning work itself can be eliminated and wasteful work can be eliminated." (paragraph [0014]) "As described above, the winch A can be prevented from seizing and rusting, no grease leaks from any place of the shaft body 3, and there no contamination around the winch due to scattering or dropping of grease. Thus, the need of grease cleaning work itself can be eliminated and the burden of the crew can be reduced. In addition, there is no grease falling into the sea, and hence the winch A can be said to be a preferable winch structure from the viewpoint of environmental

protection." (paragraph [0034]) "(1) The tugboat winch A mounted on a deck of a hull (tugboat) and capable of unwinding and winding a towing rope 10 and an anchor chain 20, the tugboat winch A comprising a shaft body 3 interlockingly connected to a drive source (for example, a hydraulic motor M), the shaft body 3 including a first drum 1 for winding the towing rope 10 and a second drum 2 for winding the anchor chain 20 mounted thereon respectively; a bearing 4 with an alignment function of supporting the shaft body 3; and a first clutch 11 disposed on the shaft body 3 to switch the power transmission on and off from the drive source to the first drum 1 and a second clutch 22 disposed thereon to switch the power transmission on and off from the drive source to the second drum 2, wherein each of the clutches (the first clutch 11 and the second clutch 22) has a sealed structure with grease encapsulated therein.

Thus configured tugboat winch A can prevent grease or the like from leaking from the sliding portion between each of the clutches (the first clutch 11 and the second clutch 22) and the shaft body 3. Therefore, there is no fear of grease contamination around the winch. In addition, the need of grease cleaning work itself can be eliminated and wasteful work of the crew can be eliminated." According to the description of the paragraphs ([0040] and [0041]), the winch can prevent grease or the like from leaking from the sliding portion between each of the clutches (the first clutch 11 and the second clutch 22) and the shaft body 3. Therefore, there is no fear of grease contamination around the winch. In addition, the need of grease cleaning work itself can be eliminated and wasteful work can be eliminated. In addition, there is no grease falling into the sea, and hence the winch is preferable from the viewpoint of environmental protection.

B. The effects of the patent invention are described in the following paragraphs of the patent description. "In addition, a plurality of bearings 4 for supporting the shaft body 3 includes self-aligning roller bearings and seal members 40. As described above, the bearings 4 have an alignment function, and hence for example, even if a belt is wound around the first drum 1 or the like and the brake is applied, the shaft body 3 can be smoothly rotated. There is no fear of seizing or the like, and hence durability is also significantly improved compared to the conventional bearing structure by metal or the like."(paragraph [0033]) "In addition, the bearings 4 including self-aligning roller bearings are used, and hence durability is also significantly improved."(paragraph [0034]). According to the description of the paragraphs ([0033] and [0034]), the bearings 4 including self-aligning roller bearings are used, and hence durability is also significantly improved.

C. The effects of the patent invention are described in the following paragraphs of the patent description. "(2) The tugboat winch A, wherein the bearings 4 have a sealed structure, thereby to prevent grease from leaking from within the bearings 4 and the clutches (the first clutch 11 and the second clutch 22) in the configuration of the above (1). According to the thus configured tugboat winch A, the effects of the above (1) can be further improved to provide a maintenance-free winch. In addition, the tugboat winch A can be prevented from seizing and rusting, and hence durability is also significantly improved." According to the description of the paragraphs ([0042] and [0043]), the bearings 4 are further made to have a sealed structure, grease can be prevented from leaking from within the bearings 4 and the clutches (the first clutch 11 and the second clutch 22), thereby to provide a maintenance-free winch. In addition, the tugboat winch A can be prevented from seizing and rusting, and hence durability is also significantly improved.

(3) Argument concerning the effects filed before registration of establishment of the patent right of the patent invention

A. The effects of the patent invention are described on the last line of page 6 to the sixth line of page 7 of the written demand for appeal against the examiner's decision of refusal filed on January 6, 2014. "First, the configuration A has a feature where the proximal end portion and the distal end portion of the shaft body 3 interlockingly connected to the transmission shaft 21 of the hydraulic motor M are supported through the bearings 4 including the self-aligning roller bearings, and the support portion has a sealed bearing structure by the seal members 40. Thus, according to the configuration A, both ends of the shaft body 3 include bearings 4 including the self-aligning roller bearings. Thus, even if a load such as rope winding is applied to the drum, the shaft body 3 can be smoothly rotated, and is free from seizing or the like, and hence can contribute to improvement in durability."

B. The effects of the patent invention are described on the 27th line of page 7 to the ninth line of page 8 of the written demand for appeal against the examiner's decision of refusal filed on January 6, 2014. "In addition, the configuration D has a feature where the grease reservoir 12 of an annular groove is disposed on an inner peripheral surface of the sliding tooth portions 11b and 22b of the clutches 11 and 22, and is sealed by the seal members 14 and 14 disposed at the axially front and rear ends of the sliding tooth portions 11b and 22b to prevent grease from leaking from

within the grease reservoir 12. Thus, the configuration D can prevent grease leakage as much as possible and can smoothly maintain the sliding movement of the sliding tooth portions 11b and 22b at all times. Thus, the configuration D exhibits an effect of reliably performing clutch operation without load. In particular, the seal members 14 and 14 disposed at the axially front and rear ends of the sliding tooth portions 11b and 22b provide a structure for sealing the grease reservoir 12 to prevent grease from leaking from within the grease reservoir 12, and hence can prevent grease from naturally leaking from within the grease reservoir 12 of an annular groove. In other words, it is possible to prevent the risk as much as possible that grease accidentally drips on the deck from the grease reservoir 12 and contaminates the deck."

C. The effects of the patent invention are described on the 10th line to the 17th line of page 8 of the written demand for appeal against the examiner's decision of refusal filed on January 6, 2014. "In addition, the configuration E has a feature where two grease nipples 13 communicating with the grease reservoir 12 are disposed on the outer peripheral surface of the sliding tooth portions 11b and 22b. Thus, according to the configuration E, at grease filling, one grease nipple 13 can be removed to easily fill in grease from the other grease nipple 13. In other words, grease can be freely injected into the grease reservoir 12 originally sealed to prevent leakage. Thus, the configuration E can generate an effect of preventing circumstances as much as possible where compulsory, unreasonable, accidental injection of grease into the grease reservoir causes wasteful grease leakage, causing contamination of the deck."

D. The effects of the patent invention are described on the 18th line to the 23rd line of page 8 of the written demand for appeal against the examiner's decision of refusal filed on January 6, 2014. "In addition, the configuration F has a feature where a sliding surface S of the sliding tooth portions 11b and 22b of the clutches 11 and 22 is subject to anti-rust treatment of grinding after SUS-overlay welding. Thus, the configuration F can prevent rust from forming due to sea spray or the like. In particular, the configuration F eliminates the need to apply oil or rust inhibitors and can prevent the contamination of the deck caused by dropping these oils or the like."

No. 3 Device of Article A

1. The explanatory document of the drawings of Article A

The explanatory document of the drawings of Article A attached to the written demand for trial submitted on August 26, 2014 (sent on August 25, 2014) includes the following description.

"A) A tugboat winch (A') configured to be mounted on a deck of a hull, and to be able to unwind and wind towing ropes and anchor chains (20, 20), wherein

B) a shaft body (3) is interlockingly connected to a transmission shaft (21) serving as an output shaft of a hydraulic motor (M) through a first gear (71) and a second gear (72),

C) the proximal end portion and the distal end portion (as well as the intermediate portion) of the shaft body (3) are supported by a gear case (7) of the first gear (71) and the second gear (72) and support frames (6, 6) respectively through a metal bush (4a) as a slide bearing,

D) no seal member is disposed on a support portion by the metal bush (4a), and both end portions are opened,

E) the shaft body (3) has a first drum (1) for winding a rope loosely fitted in a position distant from the transmission shaft (21) and a second drum (2) for winding an anchor chain (20) loosely fitted in a position near the transmission shaft (21) respectively,

F) further, a first clutch (11) is interposed between the first drum (1) and the shaft body (3), and a second clutch (22) is interposed between the second drum (2) and the shaft body (3) respectively,

G) the first clutch (11) and the second clutch (22) are dog clutches including fixed tooth portions (11a, 22a) disposed on the first, second, and third drums (1, 2, 2a) and sliding tooth portions (11b, 22b) axially slidably and integrally rotatably mounted through first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3) respectively,

H) a grease reservoir (12) of an annular groove is disposed on an inner peripheral surface of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22), grease is filled beforehand in the grease reservoir (12), and the grease reservoir (12) is sealed by a seal member (14) disposed at an axially one end of the sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12) to the axially one end and to allow excessively applied grease to leak from the other axial end,

I) two grease nipples (13) communicating with the grease reservoir (12) and not removed at grease filling are disposed facing each other on an outer peripheral

surface of the sliding tooth portions (11b, 22b) to eliminate unfilled portions of grease, and

J) further, a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is not subject to anti-rust treatment of grinding after SUS-overlay welding and the shaft body (3) is exposed. Note that SUS tubes (3a, 3b) are shrink-fitted to the shaft body (3) having the seal member (14) mounted on one side of the sliding tooth portions (11b, 22b) for protection of the seal member (14).

<Brief Description of the Drawings>

(1) FIG. 1 is a front cross-sectional view of the tugboat winch according to the device of Article A.

(2) FIGS. 2(A) and (B) are an operation explanatory view illustrating an enlarged right-hand portion of FIG. 1 respectively.

(3) FIGS. 3(A) and (B) are an operation explanatory view illustrating an enlarged left-hand portion of FIG. 1 respectively.

(4) FIG. 4 is an operation explanatory view illustrating an enlarged center portion of FIG. 1."

2. Drawings of Article A

The following matters can be found from the Drawings of Article A.

(1) A winch (A') configured to be able to unwind and wind strands such as ropes and chains, that is, a part of the configuration of A described in the explanatory document of the drawings of Article A can be found from FIGS. 1 and 4 of the Drawings of Article A.

(2) The shaft body (3) is interlockingly connected to a transmission shaft (21) serving as an output shaft of a hydraulic motor (M) through a first gear (71) and a second gear (72), that is, the configuration of B described in the explanatory document of the drawings of Article A can be found from FIGS. 1 and 2 of the Drawings of Article A.

(3) A proximal end portion and a distal end portion (as well as an intermediate portion) of the shaft body (3) are supported by a gear case (7) of the first gear (71) and the second gear (72) and support frames (6, 6) through a slide bearing (4a), that is, the configuration of C approximately described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(4) No seal member is disposed on a support portion by the slide bearing (4a), and both end portions are opened, that is, the configuration of D approximately described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(5) The shaft body (3) includes a first drum (1) for winding a strand loosely fitted in a position distant from the transmission shaft (21), a second drum (2) for winding a strand (20) loosely fitted in a position near the transmission shaft (21), and third drum (2a) for winding a strand (20a) loosely fitted in a position farther than the first drum (1) from the transmission shaft (21) respectively, that is, the configuration of E approximately described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(6) A first clutch (11) is interposed between the first drum (1) and the shaft body (3), and a second clutch (22) is interposed between the second drum (2) and the shaft body (3), and further the second clutch (22) is interposed between the third drum (2a) and the shaft body (3) respectively, that is, the configuration of F approximately described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(7) The first clutch (11) and the second clutch (22) are dog clutches including fixed tooth portions (11a, 22a) disposed on the first, second, and third drums (1, 2, 2a) and sliding tooth portions (11b, 22b) axially slidably and integrally rotatably mounted through first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3) respectively, that is, the configuration of G approximately described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(8) A grease reservoir (12) of an annular groove is disposed on an inner peripheral surface of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22), and a member (14) is disposed at an axially one end of the sliding tooth portions (11b, 22b), that is, a part of the configuration of H described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(9) Two grease nipples (13) communicating with the grease reservoir (12) are disposed facing each other on an outer peripheral surface of the sliding tooth portions (11b, 22b), that is, a part of the configuration of I described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

(10) The shaft body (3) is exposed in a part of the sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) (for example, a portion located on an inner side of a place recognized as gear by a cross mark (x) in a square box located on a right end of the sliding tooth portion (11b) in FIG. 4 of the Drawings of Article A), and the shaft body (3) having the seal member (14) mounted on one end side of the sliding tooth portions (11b, 22b) includes a member (3b) on a surface side thereof, that is, a part of the configuration of J described in the explanatory document of the drawings of Article A can be found from FIGS. 1 to 4 of the Drawings of Article A.

3. Regarding the configuration G and configuration J described in the explanatory document of the drawings of Article A

The configuration G described in the explanatory document of the drawings of Article A of 1 above is described such that "sliding tooth portions (11b, 22b)" are "axially slidable through the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3)." As apparent from FIGS. 1 to 4 of the Drawings of Article A, considering that a seal member (14) as a different member is disposed in the sliding tooth portions (11b, 22b) and the seal member (14) contacts SUS tubes (3a, 3b) shrink-fitted to the shaft body (3); and power is transmitted from the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3) to the sliding tooth portions (11b, 22b), it cannot be said that the sliding tooth portions (11b, 22b) are axially slidable also through a portion having the SUS tubes (3a, 3b) shrink-fitted to the shaft body (3), the portion being other than the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3).

Then, it is understood that the sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is such that the shaft body (3) is exposed not on the surface of the SUS tubes (3a, 3b) shrink-fitted to the shaft body (3), but on the surface of "the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3)" and a part thereof, as in the configuration J described in the explanatory document of the drawings of Article A of 1 above.

Note that these can also be found from the description of the portion of proposal 1 (note: 1 is a circled number) of the drawings submitted as Evidence B No. 1 by the demandee.

4. Configuration of the device of Article A

When the configuration of the device of Article A is described by summing up all of 1 to 3 above so as to correspond to the separate description of the constituent components of the patent invention, the configuration of the device of Article A is recognized as separately as follows.

- "a) A tugboat winch (A') configured to be mounted on a deck of a hull, and to be able to unwind and wind towing ropes and anchor chains (20, 20), wherein
- b) a shaft body (3) is interlockingly connected to a transmission shaft (21) serving as an output shaft of a hydraulic motor (M) through a first gear (71) and a second gear (72),
- c) the proximal end portion and the distal end portion (as well as the intermediate portion) of the shaft body (3) are supported by a gear case (7) of the first gear (71) and the second gear (72) and support frames (6, 6) respectively through a metal bush (4a) as a slide bearing,
- d) no seal member is disposed on a support portion by the metal bush (4a), and both end portions are opened,
- e) the shaft body (3) has a first drum (1) for winding a rope loosely fitted in a position distant from the transmission shaft (21) and a second drum (2) for winding an anchor chain (20) loosely fitted in a position near the transmission shaft (21) respectively,
- f) further, a first clutch (11) is interposed between the first drum (1) and the shaft body (3), and a second clutch (22) is interposed between the second drum (2) and the shaft body (3) respectively,
- g) the first clutch (11) and the second clutch (22) are dog clutches including fixed tooth portions (11a, 22a) disposed on the first and second drums (1, 2) and sliding tooth portions (11b, 22b) axially slidably and integrally rotatably mounted through first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3) respectively,
- h) a grease reservoir (12) of an annular groove is disposed on an inner peripheral surface of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22), grease is filled beforehand in the grease reservoir (12), and the grease reservoir (12) is sealed by a seal member (14) disposed at an axially one end of the sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12) to the axially one end and to allow excessively applied grease to leak from the other axial end,

- i) two grease nipples (13) communicating with the grease reservoir (12) and not removed at grease filling are disposed facing each other on an outer peripheral surface of the sliding tooth portions (11b, 22b) to eliminate unfilled portions of grease, and
 - j) further, a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is not subject to anti-rust treatment of grinding after SUS-overlay welding, the shaft body (3) is exposed, and SUS tubes (3a, 3b) are shrink-fitted to the shaft body (3) having the seal member (14) mounted on one side of the sliding tooth portions (11b, 22b).
 - k) a tugboat winch (A')."
- (The separately described constituent component is hereinafter referred to as "configuration a)" or the like).

No. 4. Arguments of the parties

Regarding the request for the advisory opinion of the subject case as to whether or not the device of Article A belongs to the technical scope of the patent invention, the demandant, Marine Hydrotec Co., Ltd. and the demandee, OS System Co.,Ltd. (patentee) roughly argue as follows.

1. Argument of the demandant (argument in the written demand for trial filed on August 26, 2014 (sent on August 25, 2014))

1-1. Comparison between the constituent components of the patent invention and the configuration of the device of Article A

(1) The constituent component A) of the patent invention corresponds to the configuration a) of the device of Article A.

(2) The constituent component B) of the patent invention is equivalent to the configuration b) of the device of Article A.

(3) The device of Article A does not have the constituent component C) of the patent invention. The device of Article A uses a metal bush as a slide bearing instead of a bearing including a self-aligning roller as shown in c). Regarding the slide bearing, the patent invention includes the description of the prior art in paragraph [0004] of the publication of the subject patent, which emphasizes "is supported through metals 610 and 700." Regarding 2-1: Recognition of different features in the written opinion submitted on July 16, 2013, (3) (B) includes the description "Different feature 2: the Invention includes a bearing with an aligning function for supporting the shaft body, while ..."From the above, it can be observed

that the patent invention excludes "a slide bearing (metal bush)" but includes "a bearing with an aligning function" as an essential requirement thereof.

(4) The device of Article A does not have the constituent component D) of the patent invention. As shown in d), in the device of Article A, no seal member is disposed in the support portion by the metal bush (4a), and both end portions are opened.

(5) The constituent component E) of the patent invention corresponds to the configuration e) of the device of Article A.

(6) The constituent component F) of the patent invention corresponds to the configuration f) of the device of Article A.

(7) The device of Article A does not have the constituent component G) of the patent invention. More specifically, the patent invention uses the first and second keys (31, 32) to integrally rotate the sliding tooth portions (11b, 22b) with respect to the shaft body (3), but the device of Article A does not have "a key." Instead, as shown in g), the first and second substantially square cross-sectional prism portions (31a, 32a) are formed in the shaft body (3), and the sliding tooth portions (11b, 22b) are axially slidably and integrally rotatably mounted on the prism portions (31a, 32a). Here, the first and second keys (31, 32) are not equivalent to the prism portions (31a, 32a). In other words, "the keys" are arranged separately from the shaft body (3), and hence a predetermined groove needs to be formed in the shaft body (3) to embed and fix "the keys," while "the prism portions" need not. In addition, in the case of "the keys," all the torque is applied to "the keys," while in the case of the prism portions, all the torque is applied to the surface of the shaft body (3), and hence the prism portions have a longer life.

(8) The device of Article A does not have the constituent component H) of the patent invention. The reason for this is that in the patent invention, the seal members (14, 14) are disposed on the axially front and rear ends (both ends in the axial direction) of the sliding tooth portions (11b, 22b), while in the device of Article A, as shown in h), the seal members (14, 14) are disposed only on one end of the sliding tooth portions (11b, 22b). Therefore, in the case of the device of Article A, grease is not sealed and may leak from one end of the sliding tooth portions (11b, 22b). Unlike oil, grease has poor fluidity, and hence this difference is not considered to be particularly an important problem.

(9) The device of Article A has a configuration equivalent to the constituent component I) of the patent invention except the use method. More specifically, in the patent invention, the sliding tooth portions (11b, 22b) have a sealed structure, and

hence grease cannot be injected by only one grease nipple (13) since air remains inside. For this reason, when grease is filled in, one grease nipple (13) needs to be removed to allow grease to be injected from the other grease nipple (13). In the case of the device of Article A, one end of the sliding tooth portions (11b, 22b) is opened, and hence there is no resistance at the time of grease injection, but there remain grease unfilled portions when injected from only one side.

Therefore, as shown in i), two grease nipples (13) are disposed, one on the front surface one on the rear surface, and then grease is injected from both nipples. Accordingly, a grease nipple (13) is not removed once it has been installed.

(10) The device of Article A does not have the constituent component J) of the patent invention. This is also clear from the description of the configuration g) of the device of Article A. In the case of the device of Article A, the sliding tooth portions (11b, 22b) are made from the same material as the shaft body (3), and hence rust unless covered with grease. In the case of the device of Article A, as shown in j), the SUS tubes (3a, 3b) are shrink-fitted to the shaft body (3) having the seal member (14) mounted on one side of the sliding tooth portions (11b, 22b) for protection of the seal member (14). The demandee argues, on the first to eighth lines of page 5 in the written warning dated July 16, 2014, that the configuration of using the SUS sleeve surface as the sliding surface is substantially identical with the constituent component J) of the patent invention, which will be described later.

1-2. The difference in operational effect between the patent invention and the device of Article A

(1) The fourth to seventh lines of the paragraph [0014] in the description of the patent invention contain "can prevent grease or the like from leaking from the sliding portion between each of the clutches and the shaft body. Therefore, there is no fear of grease contamination around the winch. In addition, the need of grease cleaning work itself can be eliminated and wasteful work can be eliminated." In the case of the device of Article A, as described above, one side of the sliding tooth portion is not sealed. Therefore, excess supply of grease may cause grease to leak from the non-sealed side, and hence such an effect is not exhibited.

(2) The 29th line of page 6 to the sixth line of page 7 of the written demand for trial filed on January 6, 2014 contains "First, the configuration A has a feature where the proximal end portion and the distal end portion of the shaft body 3 interlockingly connected to the transmission shaft 21 of the hydraulic motor M are supported through the bearings 4 including the self-aligning roller bearings, and the support

portion has a sealed bearing structure by the seal members 40. Thus, according to the configuration A, both ends of the shaft body 3 include bearings 4 including the self-aligning roller bearings. Thus, even if a load such as rope winding is applied to the drum, the shaft body 3 can be smoothly rotated, and is free from seizing or the like, and hence can contribute to improvement in durability." Meanwhile, the device of Article A does not use the self-aligning roller, and hence does not have such an operation or effect.

(3) The 27th line of page 7 to the ninth line of page 8 of the written demand for trial contains "In addition, the configuration D has a feature where the grease reservoir 12 of an annular groove is disposed on an inner peripheral surface of the sliding tooth portions 11b and 22b of the clutches 11 and 22, and is sealed by the seal members 14 and 14 disposed at the axially front and rear ends of the sliding tooth portions 11b and 22b to prevent grease from leaking from within the grease reservoir 12. Thus, the configuration D can prevent grease leakage as much as possible and can smoothly maintain the sliding movement of the sliding tooth portions 11b and 22b at all times. Thus, the configuration D exhibits an effect of reliably performing clutch operation without load. In particular, the seal members 14 and 14 disposed at the axially front and rear ends of the sliding tooth portions 11b and 22b provide a structure for sealing the grease reservoir 12 to prevent grease from leaking from within the grease reservoir 12, and hence can prevent grease from naturally leaking from within the grease reservoir 12 of an annular groove. In other words, it is possible to prevent the risk as much as possible that grease accidentally drips on the deck from the grease reservoir 12 and contaminates the deck." As described above, in the case of the device of Article A, no seal member 14 is disposed on both the axially front and rear ends of the sliding tooth portions 11b and 22b, and hence such an operation or effect is not exhibited.

(4) The 18th to 23th lines of page 8 in the written demand for trial contain "In addition, the configuration F has a feature where a sliding surface S of the sliding tooth portions 11b and 22b of the clutches 11 and 22 is subject to anti-rust treatment of grinding after SUS-overlay welding. Thus, the configuration F can prevent rust from forming due to sea spray or the like. In particular, the configuration F eliminates the need to apply oil or rust inhibitors for preventing occurrence of rust and can prevent the contamination of the deck caused by dropping these oils or the like." Meanwhile, the device of Article A does not perform SUS-overlay welding on the sliding surface S of the sliding tooth portions, and hence does not exhibit such operational effects.

1-3. Detailed description that the device of Article A does not have the constituent component J) of the patent invention "a tugboat winch, wherein a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is configured to be subject to anti-rust treatment of grinding after SUS-overlay welding to prevent rust from forming due to sea spray or the like."

(1) Here, with reference to FIG. 4 of the patent invention, it is understood that the sliding surface (S) is formed on a surface of the shaft body (3) abutted by the sliding tooth portions (11b, 22b).

(2) In the case of the device of Article A, the sliding surface (S) that the sliding tooth portions (11b, 22b) abuts under load is the substantially square cross-sectional prism portions (31a, 32a) and no SUS material is used for this portion.

(3) In the case of the device of Article A, the SUS tubes (3a, 3b) are shrink-fitted to the sliding surface located on an end portion of the sliding tooth portions (11b, 22b) and abutted by the seal member (14). The SUS tubes (3a, 3b) are surely such that the seal member (14) prevents rust from forming due to sea spray or the like falling on the sliding portion.

(4) However, rust may occur in a gap between the SUS tubes (3a, 3b) and the shaft body (3), and hence rust prevention is not so perfect as the welding and the subsequent polishing processing adopted by the patent invention.

(5) Further, to perform the welding and polishing processing, the following steps are generally required. 1) processing a part of the shaft body (3) to ensure a welding portion, 2) welding, 3) correction processing of the shaft body (3) bent by welding, 4) stress relief annealing, 5) mechanical processing, 6) polishing processing. Some of the steps may be omitted, but then manufacturing will be extremely cumbersome. Meanwhile, shrink-fitting of the SUS tubes (3a, 3b) only needs very simple work such as 1) preparing SUS tubes (3a, 3b) of a predetermined size, 2) heating the SUS tubes (3a, 3b) to increase the inner diameter in a small range, and 3) shrink-fitting the SUS tubes (3a, 3b) into the shaft body (3).

(6) Further, the technique of the device of Article A for shrink-fitting the SUS tubes cannot be applied to the patent invention as is. The reason for this is that in the patent invention, a keyway is formed in a middle position of the sliding surface S. In addition, it is technically almost impossible to apply the SUS welding and polishing technique of the patent invention to the device of Article A since the portion of the shaft body (3) to which the sliding tooth portions are shrink-fitted is a prism. Therefore, the SUS tube shrink-fitting technique cannot be replaced with the welding

and polishing technique, and hence it is understood that the configuration of using the SUS tube (namely, the SUS surface) as the sliding surface is substantially different from the constituent component J) of the patent invention.

2. Argument of the demandee

2-1. Argument in the written reply to the advisory opinion request submitted on October 14, 2014 (sent on October 10, 2014)

2-1-1. Object of the reply

The object of the reply is deferred until the object of the reply is submitted at the time when the winch currently handled by the demandant and recognized as an infringement by the demandee is submitted as the Drawings of Article A and the explanatory document.

2-1-2. Reason for the reply

- Regarding the need for the advisory opinion request

Items (1) to (3) are approved as described by the demandant.

In (4), the demandant argues to the effect of seeking the advisory opinion for any future infringement lawsuit, but the full text of (4) is not valid, it should be deleted.

This is because the device of Article A submitted by the demandant is completely different in structure from the tugboat winch of the demandant so understood by the demandee in an important point.

More specifically, the demandant argues to the effect of seeking the advisory opinion for any future infringement lawsuit, but in fact, the device of Article A submitted by the demandant is clearly different from the tugboat winch that has been currently handled by the demandant, and worse, is an imaginary device of Article A modified not to belong to the technical scope of the subject patent right.

If the advisory opinion request is filed for confirmation assuming the case where the design is modified to a winch structure like the device of Article A in the future, the significance of the advisory opinion request may be recognized as such.

However, considering that the subject advisory opinion request involves the need for the advisory opinion request since an infringement lawsuit may be file based on the demandee's patent right in the future, the device of Article A described in the subject advisory opinion request must indicate "the tugboat winch" currently handled by the demandant.

In other words, the demandee has no intention to file an infringement lawsuit relating to Japanese Patent No. 5543258 (hereinafter referred to as "the subject patent") against the tugboat winch having a configuration where the clutch shaft as described in the Drawings of Article A has no sealed structure.

The copy of the written warning submitted as documents 2 and 3 attached to the written advisory opinion request are simply a warning of a patent right infringement based on the drawings and its simple explanatory document (hereinafter referred to as a demandant-handled winch drawing) that the demandant distributed to a person skilled in the art related to the tugboat winch, and hence what the demandee is concerned about the infringement is not the tugboat winch described in the Drawings of Article A attached to the written advisory opinion request. There can be no other conclusion than that the demandant did not use the customer distributed documents held by its own company as the device of Article A, but used the document intentionally modified not to belong to the technical scope of the subject patent as the device of Article A.

Therefore, the demandee requests the demandant to correct the Drawings of Article A to the demandant-handled winch drawing.

As described above, the reply to the subject advisory opinion request shall be made upon completion of submission of the correct explanatory document and drawings of the device of Article A based on the demandant-handled winch drawings recognized by the demandee.

It should be noted that if the trial for the subject advisory opinion request progresses without submission of the correct explanatory document and drawings of the device of Article A by the demandant, the demandee intends to file a new advisory opinion request of a tugboat winch (demandant-handled tugboat winch) recognized to be correct.

2-2. Argument in a document titled "written reply to the advisory opinion request" submitted on January 9, 2015 (sent on January 7, 2015)

2-2-1. Object of the reply

The object of the reply to the advisory opinion request is to seek a determination that the tugboat winch described in the explanatory document of the device of Article B assumed to be currently handled by the demandant belongs to the technical scope of Japanese Patent No. 5543258.

2-2-2. Reason for reply (see the 13th line to the last line of page 4)

The drawings of the Evidence B No. 1 were created for business purposes and circulated in the market, and the demandee obtained copies of them, which fact simply indicates the need for "request for prevention of an infringement" provided in Article 100(1) of the Patent Act.

In view of these circumstances, the demandee needs and desires to preliminarily seek an advisory opinion from the Patent Office regarding the tugboat winch mechanism described in the drawings of at least the Evidence B No. 1.

As may be known, another option may be such that the demandee should file an advisory opinion request regarding the winch mechanism of the Evidence B No. 1, but considering that the demandant has already filed the advisory opinion request regarding the subject patent right, the demandee desires that the judgment trial for the winch structure of the Evidence B No. 1 should proceed first, since there is a possibility for the demandant to manufacture and sale future infringing products, followed by the judgment trial for the unsealed clutch mechanism in the Drawings of Article A submitted by the demandant.

It should be noted that as of this moment the demandant has specified nothing to be brought to trial regarding the drawings created for business purposes of the Evidence B No. 1, and hence the demandee will newly submit the detailed drawings of the device of Article B to be brought to trial of the subject case.

No. 5 Judgment on the body

1. Regarding the device of Article A

On October 21, 2014, the body sent a letter to confirm whether or not the demandant has an intention to amend the written advisory opinion request (Drawings of Article A and explanatory document of the drawings of Article A), and on October 27, 2014, the body received a reply to the effect that the demandant has no intention to amend the written advisory opinion request.

In view of this, the body examines whether or not the device of Article A described in "No. 3" "3." above belongs to the technical scope of the patent invention.

It should be noted that the demandee has deferred the object of the reply as to whether or not the device of Article A belongs to the technical scope of the patent invention, has submitted a new tugboat winch based on the Evidence B No. 1 as the device of Article B, and has sought a determination that the device of Article B belongs to the technical scope of the patent invention. Meanwhile, the body considers that the object of the advisory opinion request of the subject case is to seek a determination that "the device of Article A" does not belong to the technical scope

of the patent invention, there is no special reason to consider "the device of Article B," and hence the body has decided to examine whether or not "the device of Article A" belongs to the technical scope of the patent invention.

2. Comparison/judgment

2-1. Regarding satisfaction of the constituent components of the patent invention

The following examines whether or not the configuration of the device of Article A satisfies the constituent component of the patent invention.

(1) Regarding the constituent components A) and K)

When the constituent component A) of the patent invention is compared with the configuration a) of the device of Article A, "towing rope" in the device of Article A corresponds to "towing ropes (10, 10)" in the patent invention, and subsequently likewise, "anchor chains (20, 20)" correspond to "anchor chains (20, 20)," and "tugboat winch (A)" corresponds to "tugboat winch (A)" respectively.

Thus, the configuration a) of the device of Article A satisfies the constituent component A) of the patent invention, and the configuration k) of the device of Article A also satisfies the constituent component K) of the patent invention.

(2) Regarding the constituent component B)

When the constituent component B) of the patent invention is compared with the configuration b) of the device of Article A, "hydraulic motor (M)" in the device of Article A corresponds to "hydraulic motor (M)" in the patent invention, and subsequently likewise, "transmission shaft (21)" corresponds to "transmission shaft (21)," "first gear (71) and second gear (72)" correspond to "various types of gear," and "shaft body (3)" corresponds to "shaft body (3)" respectively.

In addition, the description "a shaft body (3) is interlockingly connected through a first gear (71) and a second gear (72)" in the device of Article A corresponds to the description "a shaft body (3) is interlockingly connected through various types of gear" in the patent invention.

Thus, the configuration b) of the device of Article A satisfies the constituent component B) of the patent invention.

(3) Regarding the constituent component C)

When the constituent component C) of the patent invention is compared with the configuration c) of the device of Article A, "the proximal end portion and the distal end portion of the shaft body (3)" in the device of Article A corresponds to "the proximal end portion and the distal end portion of the shaft body (3)" in the patent invention, and subsequently likewise, "a gear case (7) of a first gear (71) and a second

gear (72)" corresponds to "a gear case (7) of various types of gear," and "support frame (6, 6)" corresponds to "support frame (6, 6)" respectively.

However, "a metal bush (4a) as a slide bearing" in the device of Article A and "a bearing (4) as a bearing including a self-aligning roller" in the patent invention are matched in terms of only "bearing," "the bearing (4) as a bearing including a self-aligning roller" in the patent invention includes a self-aligning roller by which the shaft body (3) is automatically aligned, while "the metal bush (4a) as a slide bearing" in the device of Article A does not have a self-aligning structure, and hence both differ in structure and function.

Further, according to the constituent component C), the patent invention exerts the effects described in No. 2. 2. (2) B and (3) A above, while the device of Article A cannot exert such effects.

Accordingly, the configuration c) of the device of Article A does not satisfy the constituent component C) of the patent invention.

(4) Regarding the constituent component D)

When the constituent component D) of the patent invention is compared with the configuration d) of the device of Article A, as described in (3) above, "metal bush (4a)" in the device of Article A and "bearing (4)" in the patent invention are matched in terms of only "bearing," and hence both differ in structure and function of the bearing.

In addition, in the case of the constituent component D) of the patent invention, "a support portion by the bearing (4) has a sealed bearing structure by a seal member (40)," and thus the support portion of the bearing includes a seal member, while in the case of the configuration d) of the device of Article A, "no seal member is disposed on a support portion by the metal bush (4a), and both end portions are opened," and thus no seal member is disposed on the support portion by the bearing. Thus, both differ in structure in terms of the presence or absence of the seal member (40), and hence both obviously differ also in terms of the presence or absence of a seal function by the seal member (40).

Further, according to the constituent component D), the patent invention exerts the effects described in No. 2. 2. (2) C and (3) A above, while the device of Article A cannot exert such effects.

Accordingly, the configuration d) of the device of Article A does not satisfy the constituent component D) of the patent invention.

(5) Regarding the constituent component E)

When the constituent component E) of the patent invention is compared with the configuration e) of the device of Article A, "rope" in the device of Article A corresponds to "rope (10)" in the patent invention, and subsequently likewise, "first drum (1)" corresponds to "first drum (1)," "anchor chain (20)" corresponds to "anchor chain (20)," and "second drum (2)" corresponds to "second drum (2)" respectively.

Accordingly, the configuration e) of the device of Article A satisfies the constituent component E) of the patent invention.

(6) Regarding the constituent component F)

When the constituent component F) of the patent invention is compared with the configuration f) of the device of Article A, "first clutch (11)" in the device of Article A corresponds to "first clutch (11)" in the patent invention, and likewise "second clutch (22)" corresponds to "second clutch (22)."

Accordingly, the configuration f) of the device of Article A satisfies the constituent component F) of the patent invention.

(7) Regarding the constituent component G)

When the constituent component G) of the patent invention is compared with the configuration g) of the device of Article A, "fixed tooth portions (11a, 22a)" in the device of Article A correspond to "fixed tooth portions (11a, 22a)" in the patent invention, and subsequently likewise, "sliding tooth portions (11b, 22b)" correspond to "sliding tooth portions (11b, 22b)," and "dog clutch" corresponds to "dog clutch" respectively.

However, "the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3)" in the device of Article A and "the first and second keys (31, 32)" in the patent invention are matched in terms of only "power transmission means of the shaft body (3)," but both differ in structure.

Further, in the case of "the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3)" in the device of Article A, power to be transmitted is transmitted so as to be distributed on each surface of the prism portions. Thus, it is clear that "the first and second substantially square cross-sectional prism portions (31a, 32a) of the shaft body (3)" in the device of Article A has less wear and more durability than "the first and second keys (31, 32)" in the patent invention.

Accordingly, the configuration g) of the device of Article A does not satisfy the constituent component G) of the patent invention.

(8) Regarding the constituent component H)

When the constituent component H) of the patent invention is compared with the configuration h) of the device of Article A, "an inner peripheral surface of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22)" in the device of Article A corresponds to "an inner peripheral surface of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22)" in the patent invention, and subsequently likewise, "grease reservoir (12) of an annular groove" corresponds to "grease reservoir (12) of an annular groove," "grease" corresponds to "grease," and "seal member (14)" corresponds to one of the "seal members (14, 14)" respectively.

However, "the grease reservoir (12) is sealed by a seal member (14) disposed at an axially one end of the sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12) to the axially one end and to allow excessively applied grease to leak from the other axial end" in the device of Article A and "the grease reservoir (12) is sealed by seal members (14, 14) disposed at axially front and rear ends of sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12)" in the patent invention are matched in terms of only "to prevent grease from leaking from within the grease reservoir by the seal member disposed at least at one of the axially front and rear ends of the sliding tooth portions," but both differ in structure for sealing grease in the grease reservoir by the seal member disposed in the sliding tooth portions. In addition, "the grease reservoir (12) is sealed by seal members (14, 14) disposed at axially front and rear ends of sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12)" in the patent invention, which means having a function of sealing at both ends of the axially front and rear ends of the sliding tooth portions, while "the grease reservoir (12) is sealed by a seal member (14) disposed at an axially one end of the sliding tooth portions (11b, 22b) to prevent grease from leaking from within the grease reservoir (12) to the axially one end and to allow excessively applied grease to leak from the other axial end" in the device of Article A, which means having a function of sealing only at one end of the axially front and rear ends of the sliding tooth portions, and hence both also differ in function.

Further, according to the constituent component H), the patent invention achieves the object described in No. 2. 2. (1) above, and exerts the effects described in No. 2. 2. (2) A above and the effects relating to the argument of (3) B, while the device of Article A cannot completely exert such effects.

Accordingly, the configuration h) of the device of Article A does not satisfy the constituent component H) of the patent invention.

(9) Regarding the constituent component I)

When the constituent component I) of the patent invention is compared with the configuration i) of the device of Article A, "outer peripheral surface of the sliding tooth portions (11b, 22b)" in the device of Article A corresponds to "outer peripheral surface of the sliding tooth portions (11b, 22b)" in the patent invention, and likewise, "grease nipple (13)" corresponds to "grease nipple (13)."

However, the configuration i) of the device of Article A and the constituent component I) of the patent invention are matched in terms of only "two grease nipples communicating with the grease reservoir are disposed on an outer peripheral surface of the sliding tooth portions," but differ in that the constituent component I) of the patent invention is "configured so that at grease filling, one grease nipple (13) can be removed to fill in grease from the other grease nipple (13)," while the configuration i) of the device of Article A is such that "grease nipple (13)" "is not removed at grease filling," and hence both differ in "eliminating unfilled portions of grease." In other words, both differ in handling the grease nipple at grease filling.

This difference is caused by the difference in structure between the constituent component H) of the patent invention and the configuration h) of the device of Article A. The demandant also provides the description of the same effect in No. 4 1-1 (8) and (9) above.

Thus, according to the constituent component I), the patent invention exerts the effects relating to the argument of No. 2. 2. (3) C above, while the device of Article A cannot exert such effects.

Accordingly, the configuration i) of the device of Article A does not satisfy the constituent component I) of the patent invention.

(10) Regarding the constituent component J)

When the constituent component J) of the patent invention is compared with the configuration j) of the device of Article A, in the constituent component J) of the patent invention, "a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is configured to be subject to anti-rust treatment of grinding after SUS-overlay welding to prevent rust from forming due to sea spray or the like," while in the configuration j) of the device of Article A, "a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is not subject to anti-rust treatment of grinding after SUS-overlay welding, the shaft body (3) is exposed, and SUS tubes (3a, 3b) are shrink-fitted to the shaft body (3) having the seal member (14) mounted on one side of the sliding tooth portions (11b, 22b)." Thus, the both differ in structure in terms of whether or not anti-rust treatment by SUS is performed on the sliding surface. In addition, the constituent component J)

of the patent invention provides a sliding surface having an anti-rust function in itself, while the configuration j) of the device of Article A provides a sliding surface which inevitably rusts in itself. Thus, both differ also in function.

Further, according to the constituent component J), the patent invention exerts the effects described in No. 2-2 (9) above, while the device of Article A cannot exert such effects.

Accordingly, the configuration j) of the device of Article A does not satisfy the constituent component J) of the patent invention.

As described above, the configurations c) ,d), g), h), i), and j) of the device of Article A do not satisfy the constituent components C), D), G), H), I), and J) of the patent invention respectively.

2-2. Judgment of equivalence

The argument of the demandant includes a description of substitution regarding the configuration c) of the device of Article A "As shown in c), the device of Article A uses a metal bush as a slide bearing instead of a bearing including a self-aligning roller" (see No. 4 1-1. (3) above), a description of equivalence regarding the configuration g) of the device of Article A "Here, the first and second keys (31, 32) are not equivalent to the prism portions (31a, 32a)" (see No. 4 1-1. (7)), and further a description of substitution regarding the configuration j) of the device of Article A "Therefore, the SUS tube shrink-fitting technique cannot be replaced with the welding and polishing technique, and hence it is understood that the configuration of using the SUS tube (namely, the SUS surface) as the sliding surface is a substantially different technique from the constituent component J) of the patent invention." (see No. 4 1-3. (6))

Thus, of the configurations c), d), g), h), i), and j) of the device of Article A, an examination is made as to whether or not the configurations c), g), and j) satisfy equivalent requirements with respect to the respective literally unsatisfied constituent components C), G), and J) of the patent invention, but in view of the cases described above, configurations c) and j) are examined first.

Here, Judgement of Supreme Court 1994 (O) No. 1083 decision (February 24, 1994) states to the effect that even if the configuration described in the scope of claims contains a part different from the product and the like in question, it is appropriate to determine that the product and the like in question are equivalent to the configuration described in the scope of claims and belong to the technical scope of the patented invention, provided that the following five requirements (hereinafter

referred to as "equivalent requirement (1)" to "equivalent requirement (5)" or the like) are satisfied.

"(Active requirements)

- (1) The different part is not an essential part of the patented invention,
- (2) even if the different part is replaced with a part of the product and the like in question, the product can achieve the object of the patented invention and can exert the same operational effect,
- (3) a person skilled in the art can easily conceive an idea of replacement as stated above at the time of manufacturing or the like of the product and the like in question,

(Passive requirements)

- (4) the product and the like in question are not same as the publicly known prior art at the time of patent application, or a person skilled in the art cannot easily infer the product and the like in question from the publicly known prior art at the time of patent application, and
- (5) there are no special circumstances such that the product and the like in question include an item or the like deliberately removed from the scope of claims in the application procedures of the patented invention."

- (1) Regarding the configuration c) of the device of Article A

When the patent invention is compared with the device of Article A, both differ in structure of "bearing" such that the constituent component C) of the patent invention is "a bearing (4) of a bearing including a self-aligning roller," while the configuration c) of the device of Article A is "a metal bush (4a) as a slide bearing."

Thus, the following examines whether or not "a metal bush (4a) as a slide bearing" in the configuration c) of the device of Article A and "a bearing (4) of a bearing including a self-aligning roller" in the constituent component C) of the patent invention satisfy the equivalent requirements (1) to (5).

"a bearing (4) of a bearing including a self-aligning roller" in the constituent component C) of the patent invention is such that "a bearing with an alignment function" described in claim 1 in the scope of claims first attached to the application filed relating to the patent invention has been limited by the written amendment of proceedings submitted at the same time as when the demand for appeal against the examiner's decision of refusal was filed on January 6, 2014.

More specifically, "a bearing (4) of a bearing including a self-aligning roller" in the constituent component C) of the patent invention is one automatically aligned and can exert an effect described in the patent description such that "the bearings 4

including self-aligning roller bearings are used, and hence durability is also significantly improved" (see No. 2-2. (2) B), and can exert an effect described in the demand for trial relating to the written demand for appeal against the examiner's decision of refusal filed on January 6, 2014 such that "even if a load such as rope winding is applied to the drum, the shaft body 3 can be smoothly rotated, and is free from seizing or the like, and hence can contribute to improvement in durability." (see No. 2. 2. (3) A) (hereinafter these effects are referred to as "effects relating to the constituent component C) of the patent invention).

In contrast to this, "a metal bush (4a) as a slide bearing" in the configuration c) of the device of Article A is recognized to have basic operational effects as the bearing in terms of structure as well as the effects of enabling a simple structure and low cost manufacturing, but have no other effects, and hence cannot exert the effect relating to the constituent component C) of the patent invention.

Thus, when "a bearing (4) of a bearing including a self-aligning roller" in the constituent component C) of the patent invention is replaced with "a metal bush (4a) as a slide bearing" in the configuration c) of the device of Article A, the configuration c) of the device of Article A cannot exert the effect relating to the constituent component C) of the patent invention, and hence does not satisfy the equivalent requirement (2).

Since the equivalent requirement (2) is not satisfied, the other equivalent requirements need not be considered.

(2) Regarding the configuration j) of the device of Article A

As described in No. 5-2-1. (10) above, when the constituent component J) of the patent invention is compared with the configuration j) of the device of Article A, both differ in that the patent invention describes that "a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is configured to be subject to anti-rust treatment of grinding after SUS-overlay welding to prevent rust from forming due to sea spray or the like," while the device of Article A describes that "a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is not subject to anti-rust treatment of grinding after SUS-overlay welding and the shaft body (3) is exposed, and SUS tubes (3a, 3b) are shrink-fitted to the shaft body (3) having the seal member (14) mounted on one side of the sliding tooth portions (11b, 22b) for protection of the seal member (14)."

Then, the following examines whether or not the configuration j) of the device of Article A and the constituent component J) of the patent invention satisfy the equivalent requirements (1) to (5).

In the case of the constituent component J) of the patent invention, SUS-overlay welding is performed on the sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) and a SUS member is disposed, while in the case of configuration j) of the device of Article A, "a sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) is not subject to anti-rust treatment of grinding after SUS-overlay welding and the shaft body (3) is exposed," and hence no SUS member is disposed on the sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22).

Thus, when the constituent component J) of the patent invention is replaced with the configuration j) of the device of Article A, the sliding surface (S) of the sliding tooth portions (11b, 22b) of the first and second clutches (11, 22) has no SUS member disposed thereon. Then, the configuration j) of the device of Article A cannot exert the effect such that the constituent component J) of the patent invention "can prevent rust from forming due to sea spray or the like, and particularly eliminates the need to apply oil or rust inhibitors for preventing occurrence of rust and can prevent the contamination of the deck caused by dropping these oils or the like." (see No. 2. 2. (3) D), and hence the configuration j) of the device of Article A cannot satisfy the equivalent requirement (2).

Since the equivalent requirement (2) is not satisfied, the other equivalent requirements need not be considered.

(3) Summary

As described above, the configurations c) and j) of the device of Article A do not satisfy the respective constituent components C) and J) of the patent invention, nor the equivalent requirements, and hence needless to consider other configurations, the device of Article A is determined not to be equivalent to the patent invention.

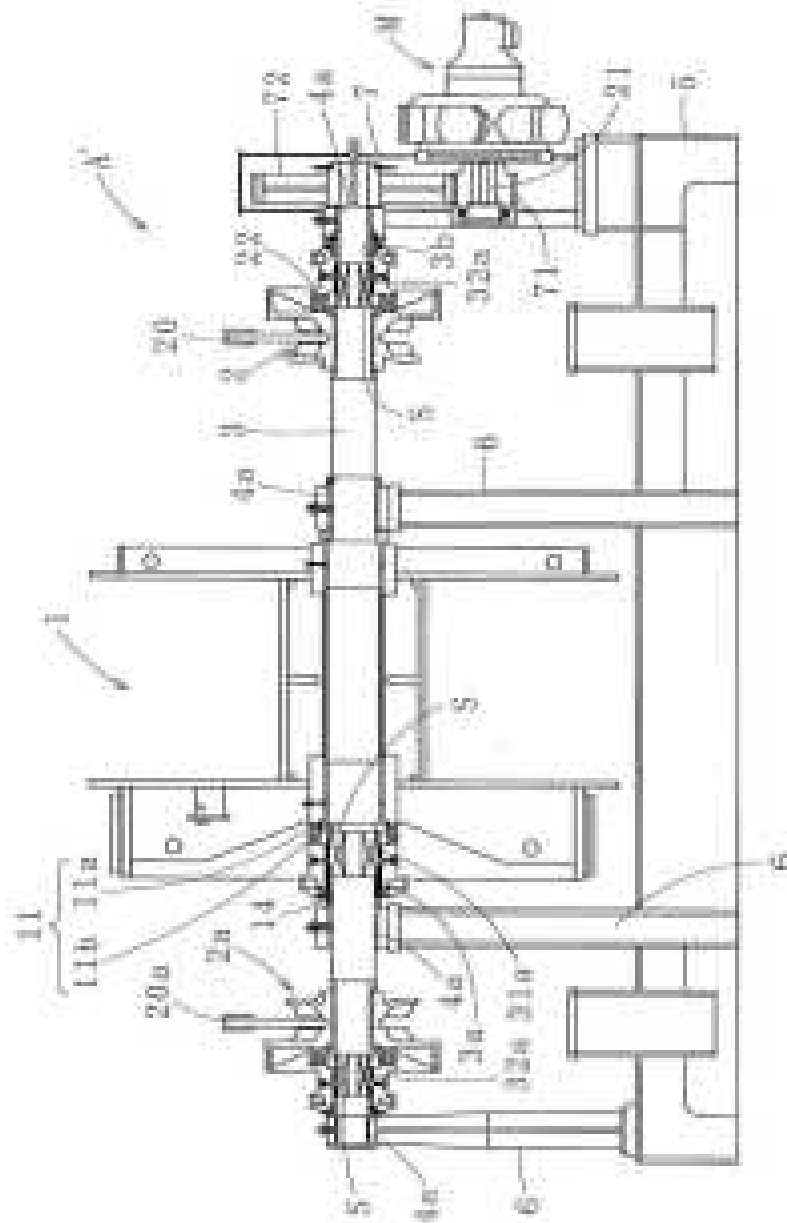
No. 6 Conclusion

As described above, the device of Article A does not satisfy the constituent components C), D), G), H), I), and J) of the patent invention, and is not equivalent in relation to the patent invention, and hence does not belong to the technical scope of the patent invention.

Therefore, the advisory opinion shall be made as described in the conclusion.

イ号圖面 図1

#1

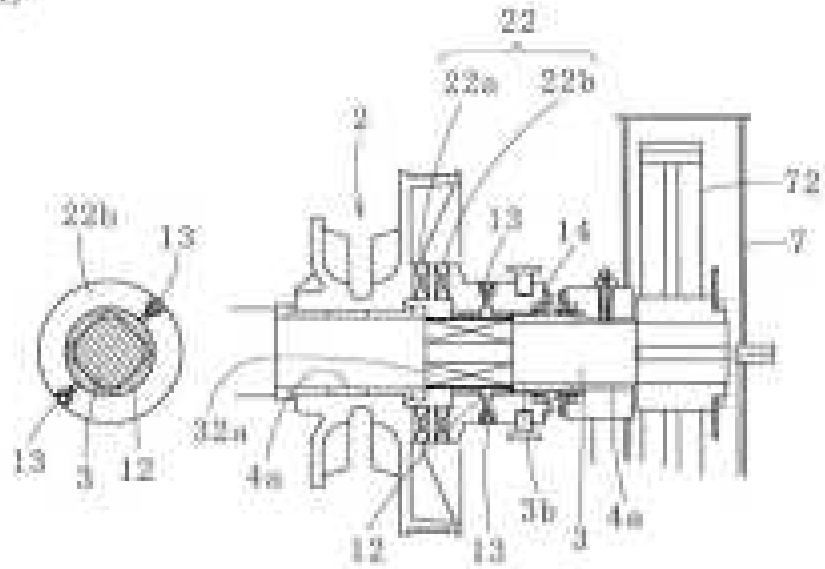


#1 Drawing of Article A FIG. 1

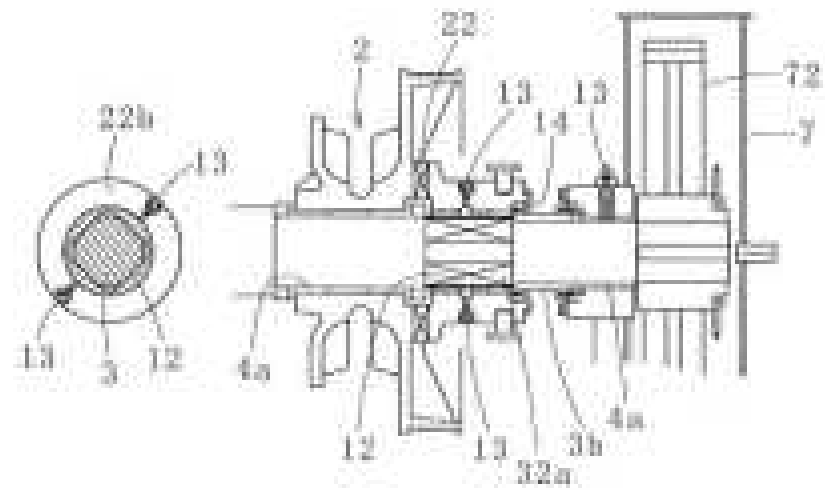
イ号図面 図 2

#1

(A)



(B)

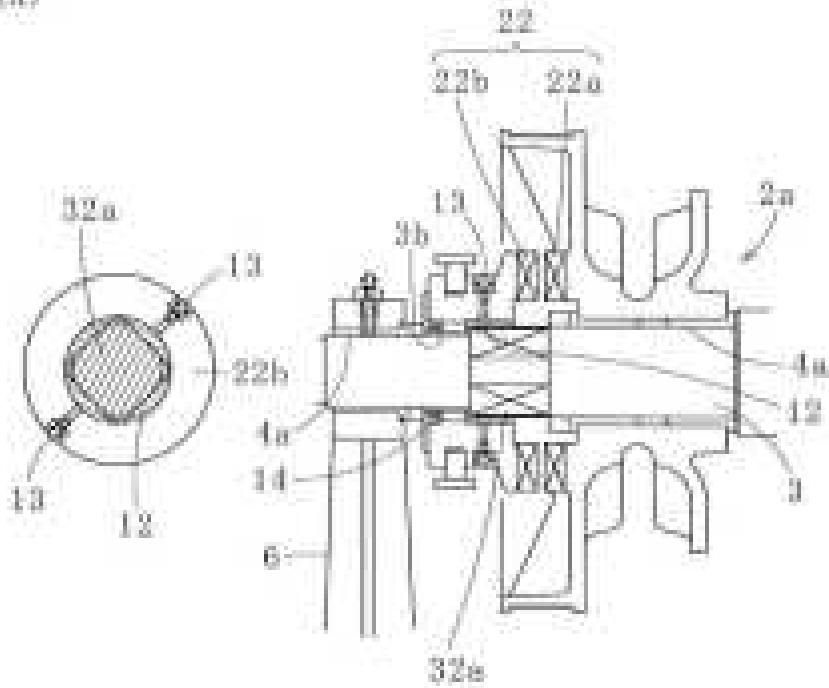


#1 Drawing of Article A FIG. 2

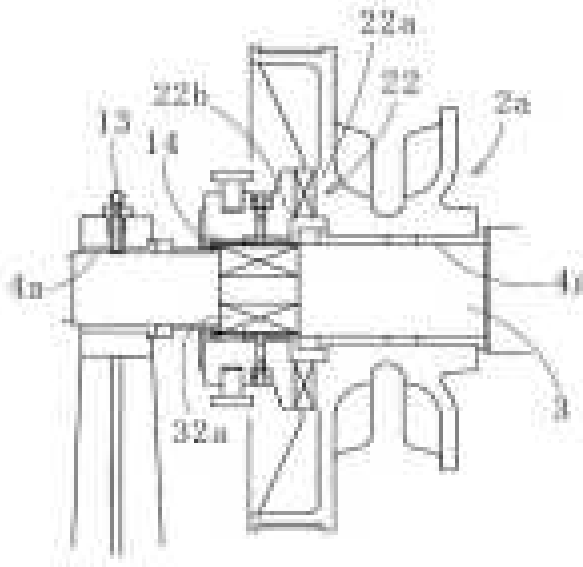
不号図面 図 3

#1

(A)



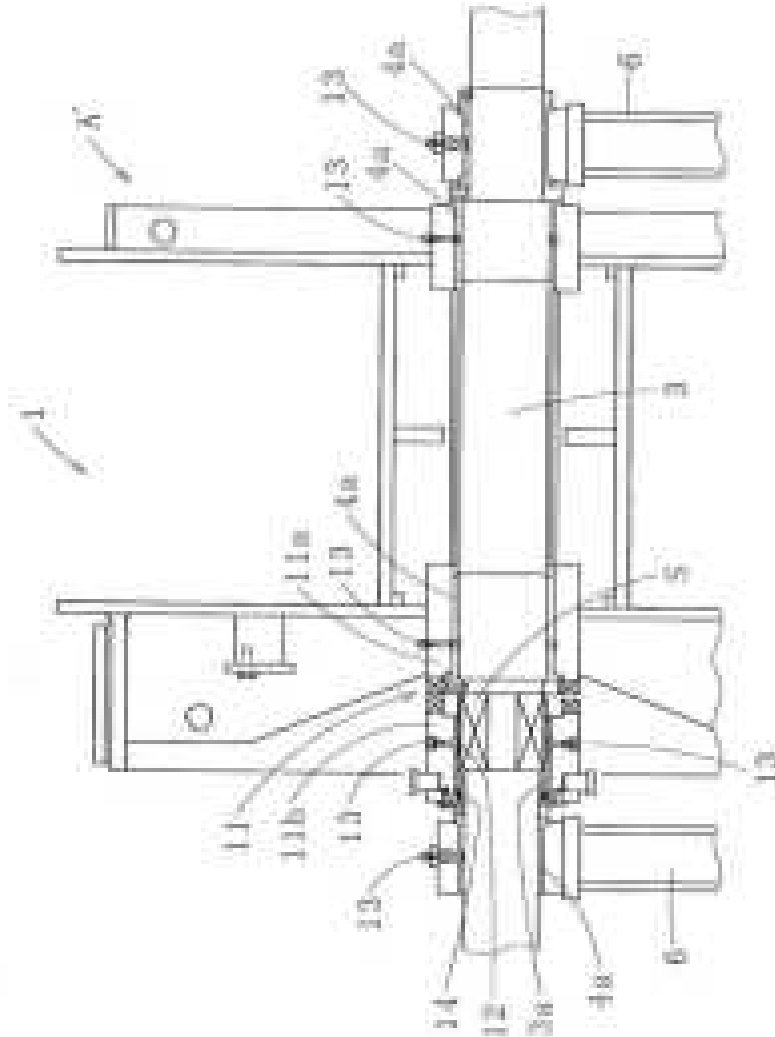
(B)



#1 Drawing of Article A FIG. 3

イ号図面 図4

#1



#1 Drawing of Article A FIG. 4

January 22, 2015

Chief administrative judge: NAKAMURA, Tatsuyuki

Administrative judge: MAKIHARA, Susumu

Administrative judge: ITO, Asahito