Appeal decision

Appeal No. 2018-9515

Appellant TOSHIBA LIFESTYLE PRODUCTS & SERVICES CORPORATION

Patent Attorney MIYOSHI, Hidekazu

The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2014-121447, entitled "COLD STORAGE" (the application published on January 7, 2016, Japanese Unexamined Patent Application Publication No. 2016-1086) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The present application is Japanese Patent Application No. 2014-121447 filed on June 12, 2014. The history of the procedures is as outlined below.

dated January 19, 2018: Notice of reasons for refusal
March 26, 2018: Submission of Written opinion and Written amendment
dated April 5, 2018: Examiner's decision of refusal
July 10, 2018: Submission of Written appeal and Written amendment

No. 2 Decision to dismiss amendment on the written amendment submitted on July 10, 2018 (hereinafter referred to as "the Amendment")

[Conclusion of Decision to Dismiss Amendment]

The Amendment shall be dismissed.

[Reason]

1 Outline of details of Amendment

The Amendment, which is to amend the Scope of Claims, especially to amend Claim 1 of the Scope of Claims, is as follows, with the descriptions changed by the amendment indicated with underlines.

(Claim 1 before the amendment)
"[Claim 1]

A cold storage comprising a refrigerating cycle including a compressor, a condenser, and an evaporator, and including a storage part composed of an equipment room and an adiabatic wall adjacent to the equipment room, wherein

the compressor and the condenser are arranged in the equipment room,

the compressor is a rotary compressor, the size of the rotary compressor is smaller than that of the condenser,

an accumulator is arranged on the side of the compressor, the accumulator is arranged at a corner part of an end of a bottom plate of the equipment room,

the equipment room includes a fan for cooling the compressor and the condenser, and the accumulator is arranged on the leeward side of cooling air generated by the fan with respect to the compressor."

(Claim 1 after the amendment)
"[Claim 1]

A cold storage comprising a refrigerating cycle including a compressor, a condenser, and an evaporator, and including a storage part composed of an equipment room and an adiabatic wall adjacent to the equipment room, wherein

the compressor is a rotary compressor, the rotary compressor includes an accumulator,

the equipment room includes the compressor and the condenser arranged in a lateral direction, and a fan for cooling the condenser arranged in a depth direction of the condenser, and

the accumulator is arranged, in the equipment room, in a lateral position opposite the condenser and the fan, across the compressor."

2 Propriety of amendment
(1) Regarding Claim 1

The amendment on Claim 1 is, as described above, regarding the dimensional relationship between the rotary compressor and the condenser and arrangement of the accumulator, to delete the matters in Claim 1 before the amendment specifying that "the size of the rotary compressor is smaller than that of the condenser", specifying that "an accumulator is arranged on the side of the compressor, the accumulator is arranged at a corner part of an end of a bottom plate of the equipment room", and specifying that "the accumulator is arranged on the leeward side of cooling air generated by the fan with

respect to the compressor", and to include an amendment specifying that "the rotary compressor includes an accumulator", specifying that "the equipment room includes the compressor and the condenser arranged in a lateral direction", and specifying that "the accumulator is arranged, in the equipment room, in a lateral position opposite the condenser and the fan, across the compressor".

Accordingly, through the above amendment, a rotary compressor larger than the condenser is included by deleting the matter specifying before the amendment that "the size of the rotary compressor is smaller than that of the condenser", the accumulator may be arranged in other parts than the corner part of the end of the bottom plate of the equipment room by deleting the matter specifying that "the accumulator is arranged at a corner part of an end of a bottom plate of the equipment room", and the accumulator may be arranged on the windward side with respect to the compressor by deleting the matter specifying that "the accumulator is arranged on the leeward side of cooling air generated by the fan with respect to the compressor". Thus, the amendment substantially enlarges or alters Claim 1 before the amendment. The Amendment including the above amendment does not fall under any items of Article 17-2(5) of the Patent Act.

The appellant alleges, as grounds for the amendment, that "(New) Claim 1 of the present application after the amendment was prepared by further amending the current (Old) Claim 1 amended by the written amendment submitted on March 26, 2018, on the basis of the descriptions in [0065]-[0069] of the Specification originally attached to the application and FIG. 12, which shows a difference from the inventions described in Cited Documents 1 to 10 more clearly.

For showing a difference from the inventions described in Cited Documents 1 to 10 more clearly, the amendment was made so as to clearly specify positional relationship between devices." (See Written appeal dated July 30, 2018 "3. Description of the Invention (b) Grounds for the amendment")

However, even if the amendment was made so as to "show a difference from the inventions described in Cited Documents 1 to 10", the Amendment includes, as described above, substantial enlargement or alteration of Claim 1 before the amendment. Thus, the appellant's allegation cannot be accepted.

Therefore, the Amendment, which violates the provisions of Article 17-2(5) of the Patent Act, shall be dismissed under the provisions of Article 53(1) of the Patent Act which is applied mutatis mutandis in the provisions of Article 159(1) of the Patent Act.

No. 3 Regarding the Invention

1 The Invention

The Amendment was dismissed as above. The invention according to Claim 1 of the present application (hereinafter referred to as "the Invention") is as specified by the matters described in Claim 1 of the Scope of Claims amended by the written amendment submitted on March 26, 2018 (see No. 2 [Reason] 1 Outline of details of Amendment (Claim 1 before the amendment)).

2 Reasons for refusal stated in the examiner's decision

The outline of the reasons for refusal in the examiner's decision of refusal ("Reason 3" dated April 5, 2018) is as follows.

The inventions according to the following claims of the application could have been easily made by a person ordinarily skilled in the art of the invention before the filing of the application, on the basis of inventions described in cited documents which are the following publications distributed or an invention made publicly available through an electric telecommunication line in Japan or a foreign country, prior to the filing of the application. Therefore, the appellant should not be granted a patent under the provisions of Article 29(2) of the Patent Act.

Details

. Claim 1 : Cited Documents 1-8
. Claim 2 : Cited Documents 1-8
. Claims 3-9 : Cited Documents 1-9
. Claim 10 : Cited Documents 1-10

<List of Cited Documents>

1. Japanese Unexamined Patent Application Publication No. H07-218094
2. National Publication of International Patent Application No. 2008-525720
3. Japanese Unexamined Patent Application Publication No. H11-325699
4. Japanese Unexamined Patent Application Publication No. 2005-164222
5. Japanese Unexamined Patent Application Publication No. 2006-105572
6. Japanese Unexamined Patent Application Publication No. 2011-85380
7. Japanese Unexamined Patent Application Publication No. 2003-222458
8. Microfilm of Japanese Utility Model Application No. S56-45986 (Japanese Unexamined Utility Model Application Publication No. S57-157883)
9. Japanese Unexamined Patent Application Publication No. 2001-248950
10. Japanese Unexamined Patent Application Publication No. 2010-43750

3 Described matters and described inventions of the Cited Documents

(1) Cited Document 1

Japanese Unexamined Patent Application Publication No. H07-218094 (hereinafter referred to as "Cited Document 1") cited in the notice of reasons for refusal dated January 19, 2018 in the examiner's decision includes the following matters with drawings. (The underlines were added by the body; the same applies hereinafter.)

"[Scope of Claims]

[Claim 1] A refrigerator comprising, in a machine room located at the bottom of a body of the refrigerator, a long-cylinder rotary compressor, a closely wound coiled condenser, and a fan for cooling the long-cylinder rotary compressor and the closely wound coiled condenser, wherein the closely wound coiled condenser is arranged between the long-cylinder rotary compressor and the fan so that the central axis of the condenser may be aligned with the central axis of the long-cylinder rotary compressor and the fan.

[Claim 2] The refrigerator of Claim 1, wherein the closely wound coiled condenser has an inner diameter which is larger than an outer diameter of the long-cylinder rotary compressor."

"[0006]

[Problem to be solved by the invention] However, in the above configuration, the outside air to be sucked by the fan is temporarily heat-exchanged with the condenser, and, especially at high outside temperature, hot air is supplied to the long-cylinder rotary compressor. Accordingly, the long-cylinder rotary compressor is cooled insufficiently, and fatal troubles to the refrigerator may occur, such as oil degradation in the long-cylinder rotary compressor, decomposition of refrigerant, and burnout of motor coil, or fan noise is increased due to the necessity of increasing the speed of the fan for securing cooling of the long-cylinder rotary compressor."

"[0011]

[Operation] This invention having the above configuration is configured to allow the outside air passing through the inside of the closely wound coiled condenser to be directly supplied by the fan to the long-cylinder rotary compressor, thereby preventing impairment of cooling of the long-cylinder rotary compressor."

"[0014] FIG. 1 is a perspective view of the machine room part in the refrigerator of the first embodiment of the invention. FIG. 2 is a horizontal sectional view of the machine room part in the refrigerator of the same embodiment. A closely wound coiled condenser 9 formed by a material of high heat conductivity, such as steel pipe, is arranged between a long-cylinder rotary compressor 1 and a fan 3 with the central axis of the condenser aligned with the central axis of the long-cylinder rotary compressor 1 and the fan 3.

[0015] In the above configuration, the outside air is sucked by the fan 3 though an intake port 7 and supplied to the closely wound coiled condenser 9 and the long-cylinder rotary compressor 1 through a partition wall 4. Here, part of the supplied outside air cools the closely wound coiled condenser 9 and part of the outside air flows into the long-cylinder rotary compressor 1 through the inside of the closely wound coiled condenser 9, thereby directly supplying low-temperature outside air not heat-exchanged with the closely wound coiled condenser 9 to the long-cylinder rotary compressor 1, resulting in secure cooling of the long-cylinder rotary compressor 1.

[0016] FIG. 3 illustrates a horizontal sectional view of the machine room part in the refrigerator of the second embodiment of the invention. As a difference from the first embodiment described above, the inner diameter (φD1) of the closely wound coiled condenser 10 is larger than the outer diameter (φD2) of the long-cylinder rotary compressor 1. In this configuration, since the inner diameter (φD1) of the closely wound coiled condenser 10 is larger than the outer diameter (φD2) of the long-cylinder rotary compressor 1, a larger amount of low-temperature outside air not heat-exchanged with the closely wound coiled condenser 10 is supplied to the long-cylinder rotary compressor 1, thereby facilitating cooling of the long-cylinder rotary compressor 1."

"[Brief description of drawings]

[FIG. 1] Perspective view of the machine room part in the refrigerator of the first embodiment of the invention

[FIG. 2] Horizontal sectional view of the machine room part in the refrigerator of the same embodiment

[FIG. 3] Horizontal sectional view of the machine room part in the refrigerator of the second embodiment of the invention

[FIG. 4] Horizontal sectional view of the machine room part in the refrigerator of the third embodiment of the invention

[FIG. 5] Horizontal sectional view of the machine room part in the refrigerator of the fourth embodiment of the invention

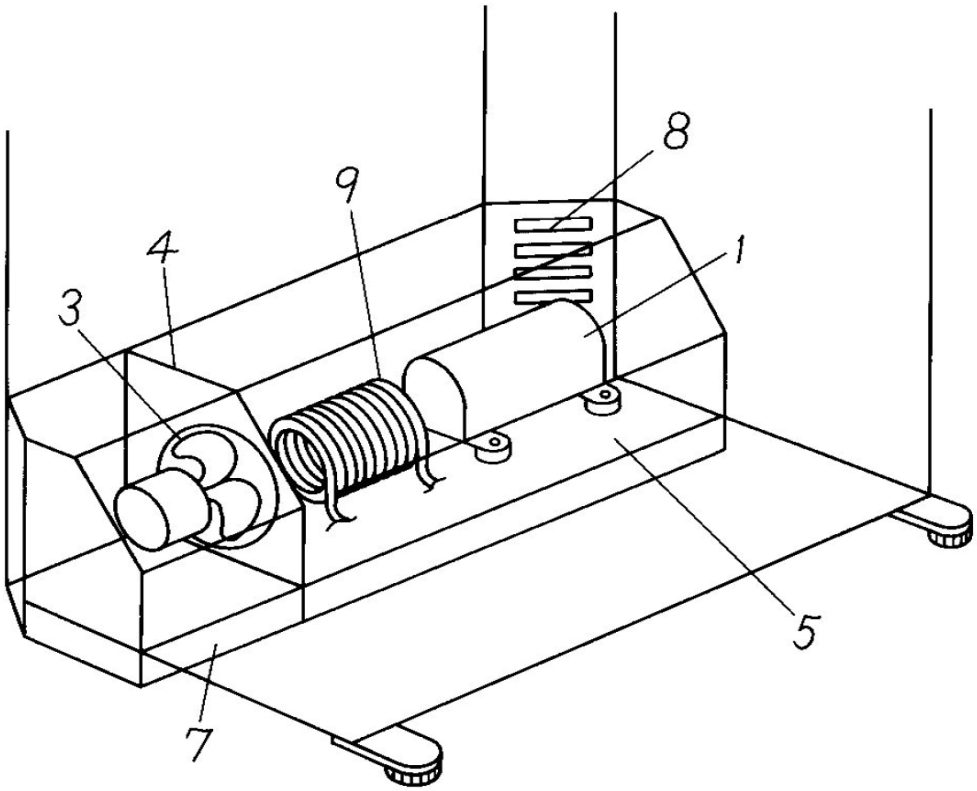
[FIG. 6] Perspective view of the machine room part in a prior art refrigerator

[FIG. 7] Vertical sectional view of the machine room part in a prior art refrigerator

[Description of symbols]"

"[FIG. 1]

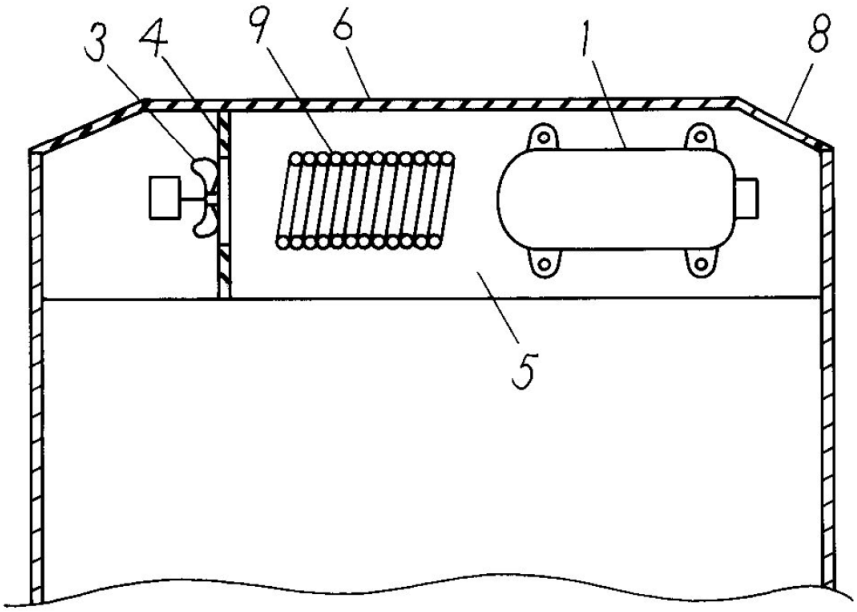
1　長筒型回転式
　コンプレッサー
3　ファン
9　密着巻きコイル状
　コンデンサー



長筒型回転式コンプレッサー　Long-cylinder rotary compressor
ファン　Fan
密着巻きコイル状コンデンサー　Closely wound coiled condenser

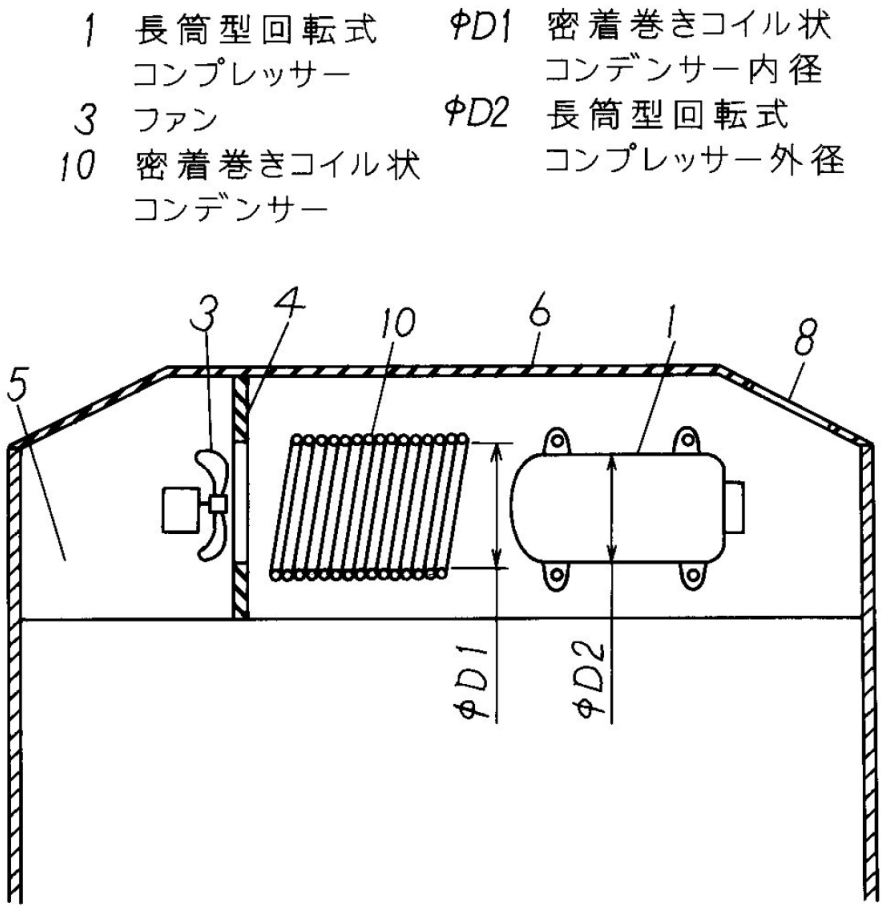
[FIG. 2]

1 長筒型回転式
コンプレッサー
3 ファン
9 密着巻きコイル状
コンデンサー



長筒型回転式コンプレッサー　Long-cylinder rotary compressor
ファン　Fan
密着巻きコイル状コンデンサー　Closely wound coiled condenser

[FIG. 3]



長筒型回転式コンプレッサー　Long-cylinder rotary compressor

ファン　Fan

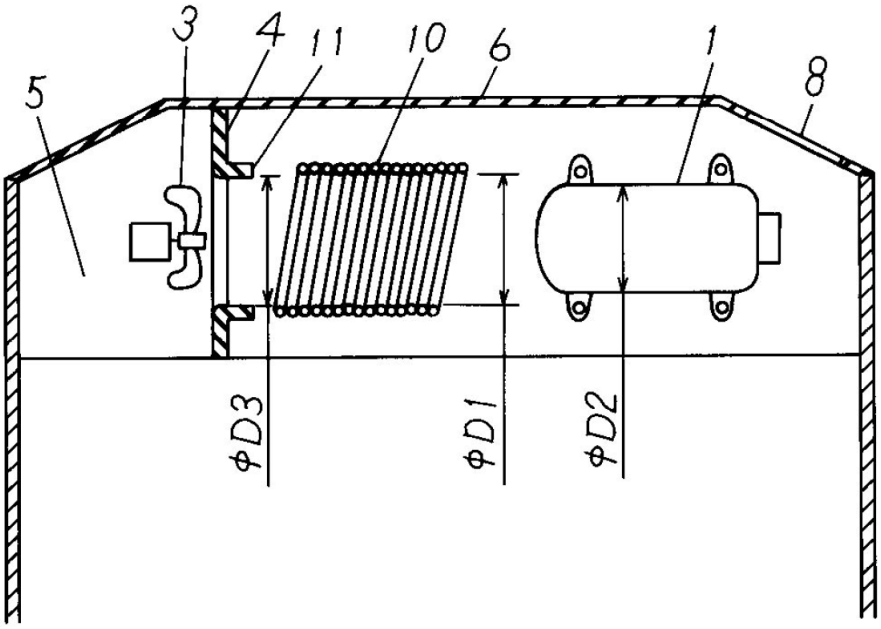
密着巻きコイル状コンデンサー　Closely wound coiled condenser

密着巻きコイル状コンデンサー内径　Inner diameter of Closely-wound coiled condenser

長筒型回転式コンプレッサー外径　Outer diameter of Long-cylinder rotary compressor

[FIG. 4]

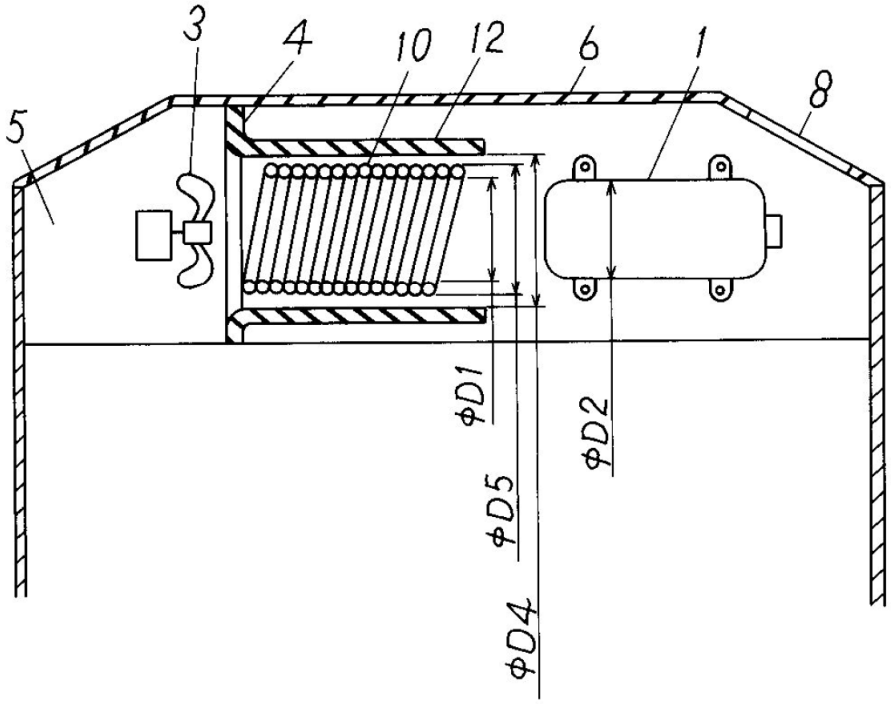
1 長筒型回転式コンプレッサー
3 ファン
10 密着巻きコイル状コンデンサー
11 エアーガイダー
φD1 密着巻きコイル状コンデンサー内径
φD2 長筒型回転式コンプレッサー外径
φD3 エアーガイダー内径



長筒型回転式コンプレッサー　Long-cylinder rotary compressor
ファン　Fan
密着巻きコイル状コンデンサー　Closely wound coiled condenser
エアーガイダー　Air guider
密着巻きコイル状コンデンサー内径　Inner diameter of Closely wound coiled condenser
長筒型回転式コンプレッサー外径　Outer diameter of Long-cylinder rotary compressor
エアーガイダー内径　Inner diameter of Air guider

[FIG. 5]

1　長筒型回転式コンプレッサー
3　ファン
10　密着巻きコイル状コンデンサー
12　エアーガイダー
φD1　密着巻きコイル状コンデンサー内径
φD2　長筒型回転式コンプレッサー外径
φD4　エアーガイダー内径
φD5　密着巻きコイル状コンデンサー外径



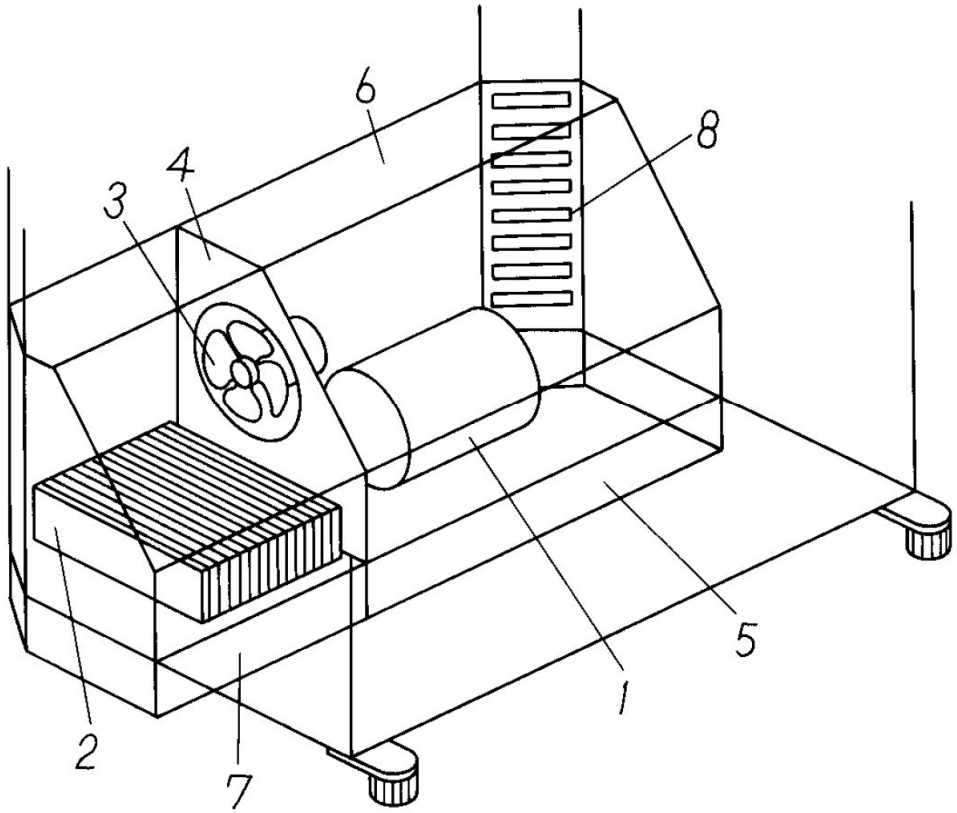
長筒型回転式コンプレッサー　Long-cylinder rotary compressor
ファン　Fan
密着巻きコイル状コンデンサー　Closely wound coiled condenser
エアーガイダー　Air guider
密着巻きコイル状コンデンサー内径　Inner diameter of Closely wound coiled condenser
長筒型回転式コンプレッサー外径　Outer diameter of Long-cylinder rotary

compressor

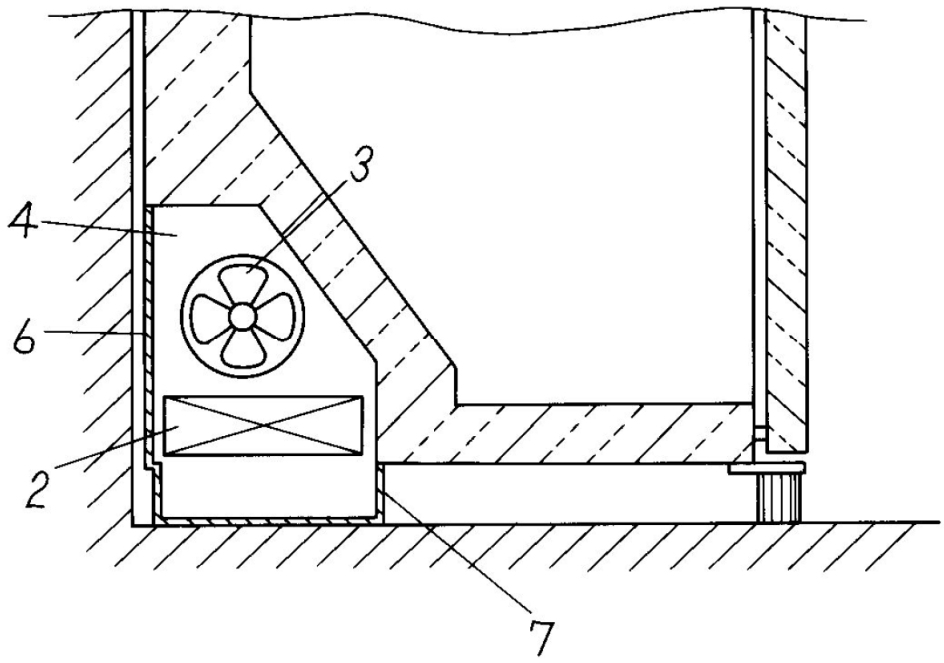
エアーガイダー内径　　Inner diameter of Air guider

密着巻きコイル状コンデンサー外径　　Outer diameter of Closely wound coiled condenser

[FIG. 6]



[FIG. 7]



"

According to the above described matters and matters described in each of the figures, it is acknowledged that Cited Document 1 describes the following invention (hereinafter referred to as "Cited Invention").

"A refrigerator comprising, in a machine room located at the bottom of a body of the refrigerator, a long-cylinder rotary compressor, a closely wound coiled condenser, and a fan for cooling the long-cylinder rotary compressor and the closely wound coiled condenser, wherein the closely wound coiled condenser is arranged between the long-cylinder rotary compressor and the fan so that the central axis of the condenser may be aligned with the central axis of the long-cylinder rotary compressor and the fan, and the closely wound coiled condenser has an inner diameter which is larger than an outer diameter of the long-cylinder rotary compressor."

(2) Cited Document 2

National Publication of International Patent Application No. 2008-525720 (hereinafter referred to as "Cited Document 2") cited in the notice of reasons for refusal dated January 19, 2018 in the examiner's decision includes the following matters with drawings.

"[0004]

Several types of compressors are currently available for use in refrigeration

systems. For home refrigerators and air conditioners, rolling piston compressors are commonly used. Rolling piston compressors are also referred to as fixed (or stationary) vane rotary compressors. In such a compressor, the vane does not rotate along with the rotor, but instead reciprocates in a slot enclosed by the stationary part of the compressor. The cylindrical part of the compressor that is mounted on the eccentric shaft is called a rolling piston because it appears to roll on the cylindrical surface of the cylinder wall. During the suction part of the cycle, refrigerant gas is drawn through an inlet port into the compression chamber, thereby increasing the gas volume. During the suction process, the compression stroke takes place in a decreasing volume on the opposite side of the piston and vane. Therefore, gas is compressed due to the eccentric motion of the roller. Discharge flow is controlled via a discharge valve."

"[0034]

The miniature rolling piston rotary compressor of the present invention is significantly smaller and lighter than the state-of-the art rotary compressors, while providing comparable efficiency/performance. The miniature rolling piston rotary compressor of the present invention has a diameter of up to about 2.5 in., preferably in the range from about 1.5 in. to about 2.5 in., an axial length of up to about 3.5 in., preferably in the range of from about 1.5 in. to about 3.0 in., more preferably from about 2.0 in to about 2.8 in., displacement of up to about 3.0 cc/revolution, preferably in the range of from about 0.90 cc/rev to about 3.0 cc/rev, more preferably from about 1.2 cc/rev. to about 3.0 cc/rev., and a weight of up to about 1.7 pounds, preferably in the range of from about 0.8 lbs to about 1.5 lbs, more preferably from about 1.0 lbs to about 1.4 lbs. In one embodiment of the present invention, the miniature rolling piston rotary compressor has a diameter of about 2.2 in., an axial length of about 3.0 in., and a weight of about 1.2 pound."

(3) Cited Document 7

Japanese Unexamined Patent Application Publication No. 2003-222458 (hereinafter referred to as "Cited Document 7") cited in the notice of reasons for refusal dated January 19, 2018 in the examiner's decision includes the following matters with drawings.

"[0017] A capillary tube 35 is connected to the evaporator for freezer 19, on the side where refrigerant is supplied to the evaporator for freezer 19, and the accumulator 36 is connected on the side where the refrigerant in the evaporator for freezer 19 is discharged. The capillary tube 35 and the accumulator 36 are connected to the compressor 26A in the machine room.

[0018] In the evaporator for freezer 19, a plurality of heat-exchanging fins 28 are arranged

in the refrigerant pipe 27 at a predetermined interval in a longitudinal direction of the pipe. The heat-exchanging fins 28 on the side of the refrigerant pipe 27A (refrigerant inflow-side refrigerant pipe) connected to the capillary tube 35 include a first heat-exchanging fin 28A having large fin pitch attached thereto, so that the diameter of the pipe is made large. The heat-exchanging fins 28 on the side of the refrigerant pipe 27G (refrigerant outflow-side refrigerant pipe) connected to the accumulator 36 include first and second heat-exchanging fins 28A and 28B having small fin pitch, so that the diameter of the pipe is made small. Thus, the diameter of the refrigerant outflow-side refrigerant pipe is smaller than the diameter of the refrigerant inflow-side refrigerant pipe.

[0019] As is well known, generally, small pipe diameter can increase heat exchange efficiency as compared with large pipe diameter. (It is also well known that extremely small pipe diameter increases pressure drop, resulting in no effect.)

[0020] The refrigerant compressed in the compressor 26A is cooled in a condenser (not shown), and flows into the refrigerant pipe 27 in the evaporator 19 through the capillary tube 35. As shown in FIG. 4, the refrigerant pipe 27 is, on the foreside, extended in the horizontal direction, curved from top to bottom (curve 27A), extended in the horizontal direction, curved from top to bottom (curve 27B) again, and extended in the horizontal direction. The refrigerant pipe 27 at the bottom is, as shown in FIG. 5, curved from the foreside to the rear side (curve 27C), extended in the horizontal direction, curved from bottom to top, extended in the horizontal direction, curved from bottom to top again (curve 27D), and extended in the horizontal direction.

[0021] In the same way, the refrigerant pipe 27 is, on the rear side, curved from the foreside to the rear side, extended in the horizontal direction, curved from top to bottom (curve 27E), extended in the horizontal direction, curved from top to bottom, again, and extended in the horizontal direction. Thereafter, the refrigerant pipe 27 at the bottom is curved backward (curve 27F), extended in the horizontal direction, curved from bottom to top, extended in the horizontal direction, curved from bottom to top again (curve 27G), extended in the horizontal direction, and connected to the accumulator 36.

[0022] In the evaporator for freezer 19, the first heat-exchanging fins 28A having a large pitch are attached to the refrigerant pipe 27. In the refrigerant pipe 27 (rear side) having the curves 27E, 27F, 27G, the pitch is made small by the first heat-exchanging fin 28A and the second heat-exchanging fin 28B (indicated by a dashed line in the figure). The pitch of the heat-exchanging fins 28 in the refrigerant pipe 27 on the rear side is about 1/2 of the pitch of the heat-exchanging fins 28 in the refrigerant pipe 27 on the foreside.

[0023] When the compressor 26A constituting the refrigerant circuit of the refrigerating cycle in the machine room is operated, the blowers 20, 25 are started, and the refrigerant

discharged from the compressor 26A flows into the refrigerant pipe 27 in the evaporator 19 through the capillary tube 35.

[0024] In the refrigerant pipe 27, the cold air flowing through the freezer suction port 7B is cooled by the refrigerant pipe 27 and the heat-exchanging fins 28. The refrigerant in the refrigerant pipe 27 is returned to the compressor 26A through the accumulator 36. The cold air obtained in the evaporator 24 flows from the opening 15 via the blower 25 toward the vegetable compartment 4 as indicated by an arrow X, and is introduced to the cooling chamber 23 to be cooled."

(4) Cited Document 8

Microfilm of Japanese Utility Model Application No. S56-45986 (Japanese Unexamined Utility Model Application Publication No. S57-157883) (hereinafter referred to as "Cited Document 8") cited in the notice of reasons for refusal dated January 19, 2018 in the examiner's decision includes the following matters with drawings.

"This device relates to a beverage cooler for storing and cooling alcoholic beverages, such as wine.

This kind of beverage cooler includes a plurality of independent cooling containers for storing and cooling two or more kinds of beverages simultaneously, and each of the cooling containers uses different cooling coils arranged in the middle of a refrigerant passage or in branch passages so as to control temperature individually. When the branch passages are arranged to control temperature of each of a plurality of cooling containers, it is necessary to arrange a fluid storage pipe in a return refrigerant passage between a merging part of the branch passages and the compressor. There is a problem that the fluid storage pipe is likely to cause condensation due to low surface temperature of about -1 to -7°C." (Specification p. 1 the 4th line from the bottom to p. 2 l. 9)

"(11) denotes an air inlet arranged at the bottom of a sidewall of the machine room (A), (12) denotes an air outlet arranged on a top face (1a) of an outer body (1) which is an upper wall of the machine room (A), (13) denotes a compressor mounted on a base frame (5) of the machine room (A) close to the air inlet (11), (14) denotes a condenser attached horizontally close to the air outlet (12), and (15) denotes a blower equipped above the condenser (12) (Note by the body: "the condenser (12)" is an error for "the condenser (14)") to forcibly discharge indoor air sucked from the air inlet (11) into the machine room (A) through the air outlet (12). (16) denotes a fluid storage pipe arranged in the machine room (A) and located immediately above the compressor (13) and below the condenser (14), and includes, as shown in FIG. 2, an inlet (16') and an outlet (16") formed by squeezing both ends of a copper pipe. The pipe is inclined so that the inlet (16') is lower and the outlet (16") is higher, and the pipe has an outer circumferential surface

covered by a member (17) having thermal transmissivity of 30-60%. The member (17) employs foamed polyethylene having a thickness of 5-7 mm." (Specification p. 2 the last line to p. 3 the 6th line from the bottom)

"FIG. 3 is refrigerant circuit diagram. (18) and (18') denote refrigerant passages, (19) denotes a dryer, and (20) and (21) denote first and second refrigerant branch passages branched at the exit of the dryer (19). In the first branch passage (20), a first solenoid valve (22), a first capillary tube (23), and a first cooling coil wound on a first cooling container (2) are sequentially arranged. In the second branch passage (21), a second solenoid valve (25), a second capillary tube (26), and a second cooling coil (27) wound on a second cooling container (3) are arranged sequentially. The fluid storage pipe (16) is arranged in the refrigerant passage (18) between the merging part (P) of the branch passages (20) (21) and the compressor (13)." (Specification p. 3 the 5th line from the bottom to p. 4 l. 6)

"If the thermostat (7) is operated due to a small amount of beverage in the cooling container (3) and the second solenoid valve (25) is closed, all liquefied refrigerant from the dryer (19) enters the first branch passage (20) and evaporates in the first cooling coil (24), and cooling of the first cooling container (2) continues. However, surplus enclosed refrigerant is generated in the first cooling coil (24). Thus, gas-liquid mixed refrigerant is separated in the fluid storage pipe (16), to return only gas refrigerant to the compressor (13). Therefore, in the fluid storage pipe (16), liquefied refrigerant is stored and the refrigerant evaporates, resulting in a low surface temperature of about -1 to -7°C.

In the machine room (A), the air flowing through the inlet (11) by rotation of the blower (15) comes into contact with the compressor (13) having a surface temperature of about 60-70°C, relative humidity of the air is reduced by temperature increase due to the contact with the compressor (13), and the air coming into contact with the condenser (14) to cool the condenser (14) is discharged to the outside through the outlet (12). Since the air having reduced relative humidity rises around the fluid storage pipe (16) located between the compressor (13) and the condenser (14), condensation on the surface of the fluid storage pipe (16) can be reduced, and condensation can be reliably prevented by covering the fluid storage pipe (16) with the member (17). However, in order to facilitate gas-liquid separation in the fluid storage pipe (16), thermal transmission ratio (Note by the body: the "thermal transmission ratio" is an error for "thermal transmissivity") of the member (17) is preferably about 30-60%." (Specification p. 4 l. 13 to p. 5 the 5th line from the bottom)

"Since the compressor is arranged near the air inlet and the condenser is arranged near the air outlet, the compressor can be brought into contact with low-temperature airflow,

thereby achieving appropriate cooling for protecting the compressor. Since the fluid storage pipe is arranged in the machine room and located between the compressor and the condenser, the air having reduced relative humidity by heat exchange with the compressor rises around the fluid storage pipe, thereby producing various effects, such as reducing condensation in the fluid storage pipe and facilitating evaporation of refrigerant in the fluid storage pipe with the heat of the compressor." (Specification p. 6 l. 2 to l. 12)

In light of the above described matters and drawings, it is acknowledged that Cited Document 8 describes the following matter (hereinafter referred to as "Described matter of Cited Document 8").

"Regarding a fluid storage pipe arranged for returning only gas refrigerant to a compressor, a temperature is increased around the fluid storage pipe due to heat exchange with the compressor, condensation in the fluid storage pipe can be reduced by the air having reduced relative humidity, and evaporation of refrigerant in the fluid storage pipe can be facilitated with the heat of the compressor."

4 Comparison / Judgment

(1) Comparison

Comparing the Invention with the Cited Invention, according to the meanings, functions, or operations of the words, the "machine room", "refrigerator", "long-cylinder rotary compressor", "fan", and "closely wound coiled condenser" in the Cited Invention correspond to the "equipment room", "cold storage", "compressor", "fan", and "condenser" in the Invention, respectively.

The "refrigerator" of the Cited Invention, which obviously includes a refrigerating cycle including an evaporator in addition to the "long-cylinder rotary compressor" and the "closely wound coiled condenser", corresponds to a device "comprising a refrigerating cycle including a compressor, a condenser, and an evaporator" in the Invention.

It is acknowledged that the "refrigerator" of the Cited Invention includes a storage part composed of an equipment room and an adiabatic wall adjacent to the equipment room, from the arrangement of devices in the perspective view of the machine room part shown in Fig. 1 of Cited Document 1 and a matter of common general technical knowledge that a storage part in a refrigerator includes an adiabatic wall. Thus, the "refrigerator" corresponds to the "cold storage including a storage part composed of an equipment room and an adiabatic wall adjacent to the equipment room" in the Invention.

The configuration of the Cited Invention, "comprising, in a machine room located at the bottom of the body, a long-cylinder rotary compressor, a closely wound coiled condenser, and a fan for cooling the long-cylinder rotary compressor and the closely

wound coiled condenser", corresponds to the configurations of the Invention, "the compressor and the condenser are arranged in the equipment room" and "the equipment room includes a fan for cooling the compressor and the condenser", from the fact that devices are arranged in the machine room.

Thus, the Invention and the Cited Invention have the following corresponding feature and different features.

<Corresponding Feature>

"A cold storage comprising a refrigerating cycle including a compressor, a condenser, and an evaporator, and including a storage part composed of an equipment room and an adiabatic wall adjacent to the equipment room, wherein

the compressor and the condenser are arranged in the equipment room, and

the equipment room includes a fan for cooling the compressor and the condenser".

<Different Feature 1>

The compressor in the Invention is specified as "a rotary compressor, the size of the rotary compressor is smaller than that of the condenser". The compressor in the Cited Invention is specified as "a long-cylinder rotary compressor" and configured so that "the closely wound coiled condenser has an inner diameter which is larger than an outer diameter of the long-cylinder rotary compressor".

<Different Feature 2>

The accumulator in the Invention is specified as follows: "an accumulator is arranged on the side of the compressor, the accumulator is arranged at a corner part of an end of a bottom plate of the equipment room"; and "the accumulator is arranged on the leeward side of cooling air generated by the fan with respect to the compressor". The Cited Invention does not specify the presence or absence of accumulator and arrangement thereof.

(2) Judgment

A Regarding Different Feature 1

The type of a compressor to be employed in a cold storage can be appropriately selected by a person skilled in the art in accordance with the footprint required for installing the compressor in the cold storage, an environment in which the cold storage is used, or cost. A rotary compressor was a well-known art before the filing of the application (e.g., see the described matter of Cited Document 2). Thus, a person skilled in the art could have easily conceived of employing a rotary compressor, which is the matter specifying the invention according to Different Feature 1.

Examining a relation between the dimension of the "long-cylinder rotary compressor" and the dimension of the "closely wound coiled condenser" in the Cited

Invention, the following matter is described in the detailed description of the invention in the Specification, regarding the description, "the size of the rotary compressor is smaller than that of the condenser".

"[0033]

In the example shown in FIG. 5, the size of the compressor 40 is smaller than that of the condenser 42. For example, the sizes L4 and L6 of the sizes L4, L5, and L6 of the compressor 40 are smaller than the sizes L1, L2, and L3 of the condenser.

[0034]

The description that the size of the compressor 40 is smaller than that of the condenser 42 includes a case where at least one of the sizes L4, L5, and L6 of three sides of the compressor 40 is smaller than the sizes L1, L2, and L3 of the condenser."

According to the description in the Cited Invention, "the closely wound coiled condenser has an inner diameter which is larger than an outer diameter of the long-cylinder rotary compressor", and FIGS. 3 and 4 of Cited Document 1 show ϕD2 (outer diameter of the long-cylinder rotary compressor) and ϕD1 (inner diameter of the closely wound coiled condenser), the "outer diameter of the long-cylinder rotary compressor" is smaller than the size (outer diameter) at both ends of the "closely wound coiled condenser" and the length of the "closely wound coiled condenser". Thus, it can be said that the "long-cylinder rotary compressor" is made smaller than the size of the "closely wound coiled condenser". Even if this isn't the case, a person skilled in the art can appropriately select employing a device smaller than the "closely wound coiled condenser" in accordance with the footprint required for installing the compressor in the cold storage, an environment in which the cold storage is used, or cost.

Thus, a person skilled in the art could have easily conceived of employing the matter specifying the invention according to Different Feature 1, in the Cited Invention.

B Regarding Different Feature 2

Generally, the configuration that a refrigerating cycle including a compressor includes an accumulator arranged for preventing liquid-back to the compressor was a well-known art before the filing of the application (e.g., see Cited Documents 7 and 8). The Cited Invention also includes a long-cylinder rotary compressor (compressor). Thus, an accumulator is arranged naturally, or a person skilled in the art could have easily conceived of arranging an accumulator in the Cited Invention.

Regarding a specific location of an accumulator, the Cited Invention indicates that "the outside air passing through the inside of the closely wound coiled condenser is directly supplied by the fan to the long-cylinder rotary compressor" ([0011]). A person skilled in the art could have appropriately conceived of a configuration that other devices

are not arranged at the upstream which is windward of the long-cylinder rotary compressor as much as possible and a configuration that an accumulator is located at a corner part of the machine room in consideration of footprint, which is leeward of the long-cylinder rotary compressor (compressor), in the Cited Invention, in light of the arrangement (FIG. 3 and FIG. 4 of Cited Document 1) of the fan (3), the closely wound coiled condenser (10), the long-cylinder rotary compressor (1), and the exhaust outlet (8) and the Described matter of Cited Document 8 regarding the function of the fluid storage pipe in Cited Document 8.

Therefore, a person skilled in the art could have easily conceived of implementing the matter specifying the invention according to Different Feature 2, in the Cited Invention, in view of the Described matter of Cited Document 8 and well-known arts before the filing of the application.

C Regarding Effect

The effect of the invention falls within the scope which could be predicted by a person skilled in the art, even in light of Different Features 1 and 2.

No. 4 Closing

As described above, the Invention could have been easily made by a person skilled in the art based on the Cited Invention, the Described matter of Cited Document 8, and well-known arts before the filing of the application. Thus, the appellant should not be granted a patent for the invention under the provisions of Article 29(2) of the Patent Act.

The present application should be rejected without examining other claims.

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

March 25, 2019

Chief administrative judge: TAMURA, Yoshiaki
Administrative judge: YAMAZAKI, Katsushi
Administrative judge: SHOJI, Hidefumi