

Decision on Opposition

Opposition No. 2019-700459

Patentee TAKENAKA CORPORATION

Patent Attorney NAKAJIMA, Jun

Patent Attorney KATO, Kazuyoshi

Patent Attorney FUKUDA, Koji

Opponent NAKAGAWA, Kenji

The case of opposition to the invention "roof structure" in Japanese Patent No. 6433803 has resulted in the following decision.

Conclusion

The patent according to Claims 1 and 2 of Japanese Patent No. 6433803 is maintained.

Reason

1 History of the procedures

The application of the patent relating to Claims 1 and 2 of Japanese Patent No. 6433803 of the case was filed on February 5, 2015 and the establishment of patent right was registered on November 16, 2018, and then, the Gazette containing the patent was issued on December 5, 2018. Thereafter, an opposition to the granted patent was filed on June 5, 2019 by the opponent, NAKAGAWA Kenji (hereinafter, referred to as "the Opponent").

2 The Invention

The inventions of the patent regarding Claims 1 and 2 of Japanese Patent No. 6433803 (hereinafter, referred to as "Invention 1" and the like, and collectively as "the Invention") are specified by matters described in Claims 1 and 2 of the scope of claims as follows.

"[Claim 1]

A roof structure comprising:

auditoriums arranged around a field;

a pair of support frames that have a support beam crossing a corner portion on a back surface side in the auditoriums diagonally in a plane view and a pair of supporting columns for supporting the support beam, and are arranged on both sides in a width direction of the auditoriums;

a square column arranged outside the corner portion;

a coupling beam that respectively couples the square column and the pair of supporting columns to form a built-up column; and

a roof beam that is laid between the support beams of the pair of support frames to support a roof.

[Claim 2]

The roof structure according to Claim 1, wherein the roof beam is arranged on the roof, and is laid between center portions in a longitudinal direction of the support beam."

3 Outline of grounds for opposition

(1) Reason 1 for rescission (violation of requirements for novelty)

Inventions 1 and 2 are the inventions described in Evidence A No. 1, and the patent relating to Claims 1 and 2 has been granted in violation of the provision of Article 29(1)(iii) of the Patent Act and should be invalidated.

(2) Reason 2 for rescission (violation of requirements for inventive step)

Inventions 1 and 2 could be easily made by a person skilled in the art based on the invention described in Evidence A No. 1, thus, the patentee should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act, and the patent relating to Claims 1 and 2 should be invalidated.

(3) Reason 3 for rescission (violation of requirements for clarity)

Inventions 1 and 2 violate the provisions of Article 36(6)(ii) of the Patent Act due to deficiencies in the description of the scope of claims for patent, and the patent relating to Claims 1 and 2 should be invalidated.

(4) Reason 4 for rescission (violation of requirements for support)

Inventions 1 and 2 are claimed beyond the scope described in the detailed description of the Invention, which violates the provisions of Article 36(6)(i) of the Patent Act, and thus the patent relating to Claims 1 and 2 should be invalidated.

[Evidence]

Evidence A No. 1: OKUDE Hisato, etc., "Structural Design of Seismically Isolated Spatial Roof Consisting of Three-dimensional Mega-trusses (Part 1)" to "Structural Design of Seismically Isolated Spatial Roof Consisting of Three-dimensional Mega-trusses (Part 5)," Summaries (DVD) of technical papers of annual meeting in 2014 (Kinki), Architectural Institute of Japan, published on July 20, 2014, Pages 899 to 908

Evidence A No. 2 : "Suita Football Stadium," SHINKENCHIKU, Shinkenchiku-sha Co., Ltd., December 1, 2015, Vol. 90 No. 15, Pages 68 to 79

4 Described matters in Evidences

(1) Evidence A No. 1

A Descriptions in Evidence A No. 1

(A) "1. Introduction

In this volume, we report on the structural design of a large-scale stadium with a spatial roof using a three-dimensional mega-truss structure (hereinafter, referred to as "the 3D truss structure") supported by seismic isolation supports. The Suita Stadium adopting the truss structure is ... a football stadium

2. Building outline and structural plan

The planar shape of the building has a major axis of about 210 m and a minor axis of about 160 m. (FIG. 2) "The 3D truss structure roof" is set on the seismic isolation supports installed on an RC frame column head of six-story height on the ground. (FIG. 3)

A roof frame is composed of four trapezoid T1 trusses (blue) of 9m of the maximum truss height applied in a 45°direction with respect to a long side (X) and a short side (Y) direction, a total four of two T2 trusses (red) and two T3 trusses (yellow) of parallel strings laid in the X direction and the Y direction between T1 trusses, and eight triangular T4 trusses (green) laid from the T1 trusses to corner portions." (Page 899, left column, Lines 1 to 18)

(B) Page 899, FIG. 2, 3rd Floor top view

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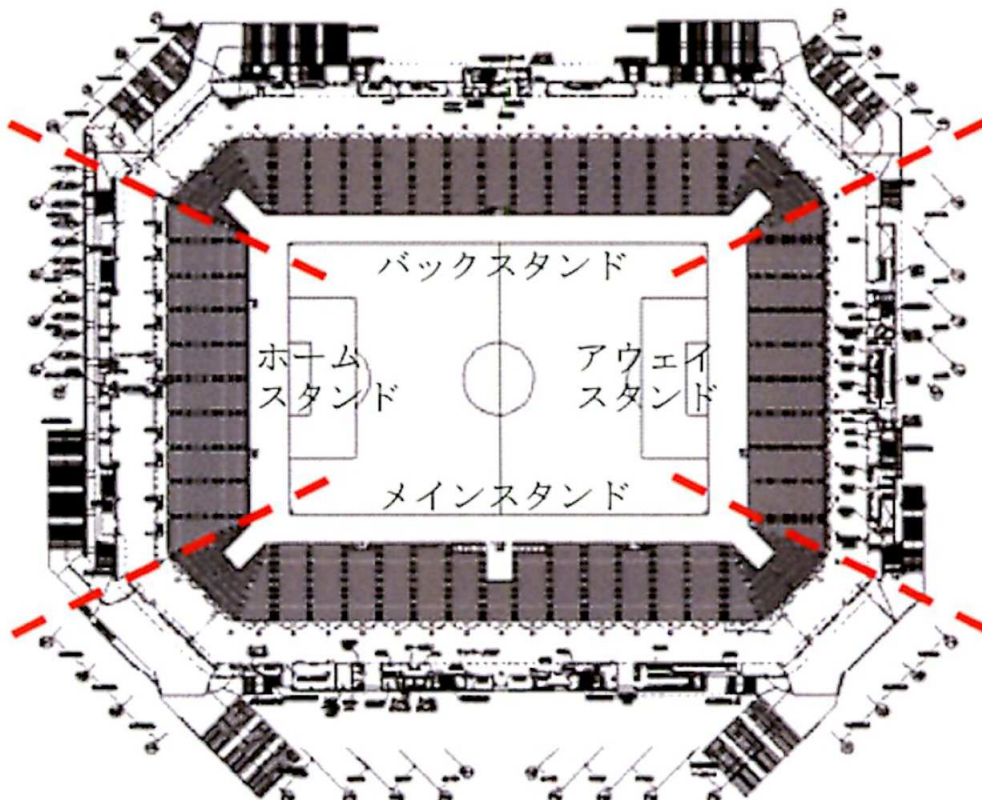


図 2 3 階平面図

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バックスタンド Back Stand
 ホームスタンド Home Stand
 アウェイスタンド Away Stand
 メインスタンド Main Stand

図 2 3 階平面図 FIG. 2 3rd Floor Top View

The following matter can be seen from FIG. 2 on Page 899.

"Around the field, four trapezoid stands (a home stand, a back stand, an away stand, and a main stand) are arranged."

(C) Page 899, FIG. 4, Roof Model

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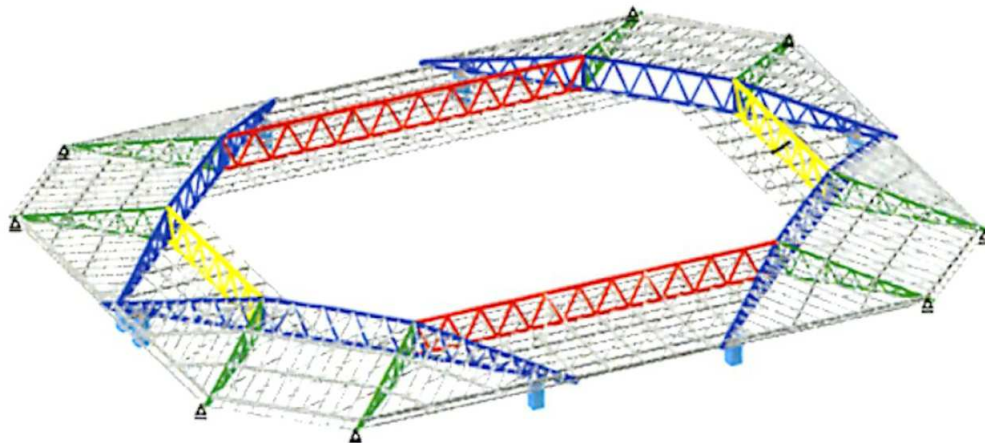


図 4 屋根モデル

図 4 屋根モデル

FIG. 4 Roof Model

"

Considering also the description in (A) above, the following matter can be seen from FIG. 4 on Page 899.

"A pair of T1 trusses is arranged on both sides in the long side (X) direction or the short side (Y) direction of the stadium."

(D) Page 905, FIG. 2, Analysis Model

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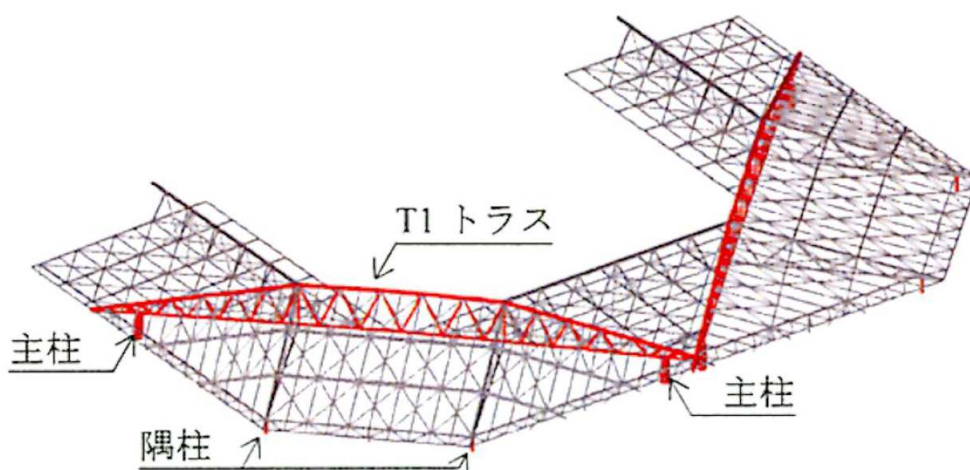


図 2 解析モデル

T 1 トラス T1 Truss

主柱 Main Column

隅柱 Corner Column

図2 解析モデル

FIG. 2 Analysis Model

"

Although Page 905, FIG. 2 is an "analysis model," it is understood that it models a real roof frame.

Considering also the description (A) above, the following matter can be seen.

"The roof frame is supported by corner columns provided at corner portions, and a pair of main columns for supporting the T1 truss."

B Invention described in Evidence A No. 1

According to A above, it is recognized that Evidence A No. 1 describes the following invention (hereinafter, referred to as "Invention A-1").

"A stadium arranged with four trapezoid stands around a field, wherein

a roof frame has a pair of T1 trusses arranged on both sides in a long side (X) direction or a short side (Y) direction of the stadium and laid in a 45° direction with respect to an X-direction and a Y-direction, and a T2 truss and a T3 truss laid in the X-direction and the Y-direction between the T1 trusses, and is supported by a pair of main columns for supporting the T1 trusses and corner columns provided at corner portions of the roof frame."

5 Judgment by the body

(1) Regarding Article 29(1)(iii) of the Patent Act

A Regarding Invention 1

(A) Comparison

a "Stands" in Invention A-1 correspond to "auditoriums" in Invention 1.

b In Invention A-1, it is obvious that the "trapezoid" stands have corner portions. Then, in Invention A-1, although a positional relationship between the stands and the roof frame is not specified, considering the fact that both of the corner portions of the "trapezoid" stands and "T1 trusses laid in a 45° direction with respect to an X-direction and a Y-direction" are located at four corner portions of the stadium, it is highly probable that the "T1 trusses cross a corner portion on a back surface side in the auditoriums diagonally in a plane view" as in Invention 1.

Therefore, "T1 trusses laid in a 45° direction with respect to an X-direction and a

Y-direction" of Invention A-1 correspond to "a support beam crossing a corner portion on a back surface side in the auditoriums diagonally in a plane view" of Invention 1.

c "A pair of main column for supporting the T1 trusses" in Invention A-1 corresponds to "a pair of supporting columns for supporting the support beam," and similarly, hereinafter, the combination of the "T1 trusses" and the "main columns" corresponds to the "support frame."

Then, in Invention A-1, "a long side (X) direction or a short side (Y) direction of the stadium" are "a width direction of the auditoriums," and a pair of "T1 trusses" is arranged on "both sides in a long side (X) direction or a short side (Y) direction of the stadium," and thus it is understood that "a pair of support frames" is "arranged on both sides in a width direction of the auditoriums," as in Invention 1.

d In Invention A-1, although a positional relationship between stands and a roof frame is not specified, corner columns are usually arranged on the rear outside of the stand in consideration of the view from the stand, so that it is natural to think that "corner columns provided at corner portions of the roof frame" are "arranged outside the corner portion" as in Invention 1.

e It is obvious that "a T2 truss and a T3 truss laid in the X-direction and the Y-direction between the T1 trusses" in Invention A-1 support a roof, and thus correspond to "a roof beam that is laid between the support beams of the pair of support frames to support a roof" of Invention 1.

f The combination of "stands", "roof frame", "corner columns" and "main columns" in Invention A-1 corresponds to "a roof structure" of Invention 1.

Therefore, Invention 1 and Invention A-1 have the following corresponding feature and different feature.

(Corresponding Feature)

"A roof structure comprising:

auditoriums arranged around a field;

a pair of support frames that have a support beam crossing a corner portion on a back surface side in the auditoriums diagonally in a plane view and a pair of supporting columns for supporting the support beam, and are arranged on both sides in a width direction of the auditoriums;

a square column arranged outside the corner portion; and

a roof beam that is laid between the support beams of the pair of support frames to support a roof."

(Different Feature)

Invention 1 has "a coupling beam that respectively couples the square column and the pair of supporting columns to form a built-up column," whereas in Invention A-1, such a structure is not specified.

(B) Judgment

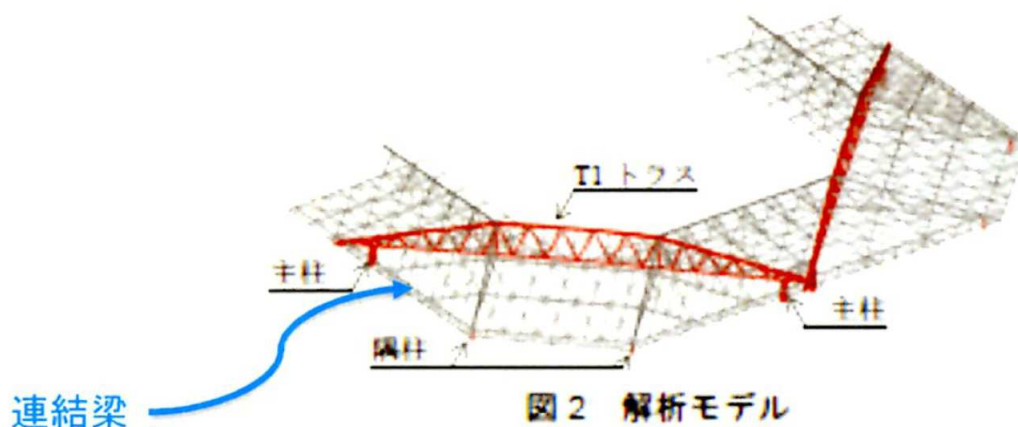
In Evidence A No. 1, even if seeing 4 (1) A (D) above that indicates positions of corner columns and supporting columns, "a coupling beam that respectively couples the square column and the pair of supporting columns to form a built-up column" is not described, and the structure relating to Difference Feature is not a matter of common general technical knowledge.

Further, in Evidence A No. 1, there is no description about the fact that "corner columns" and "supporting columns" are coupled through other members (a roof small beam or an outer peripheral beam) configuring the roof frame, and even if "corner columns" and "supporting columns" are coupled through other members, the strengths of the members have been not analyzed, and it cannot be said that it has the structural strength and function of "forming a built-up column".

Consequently, the configuration relating to Different Feature is not the one described in Evidence A No. 1.

(C) Regarding the opponent's allegation

The opponents illustrates the configuration relating to Different Feature as follows on Page 16 in the written opposition, and alleges that the coupling beam is described in Evidence A No. 1.



Ｔ１トラス T1 truss

主柱 Main Column

隅柱 Corner Column

連結梁 Coupling Beam

図２ 解析モデル FIG. 2 Analysis Model

According to the above drawing, on a slightly field side of the outer peripheral beam of the roof frame coupled with the "corner columns," the "main columns" can be seen to be coupled with the T1 truss, so that as the opponent alleges, it is not recognized that the "main columns" are coupled to the outer peripheral beam of the roof frame.

If, as the opponent alleges, the "corner columns" and the "main columns" are coupled by the outer peripheral beam of the roof frame, as described above, the outer peripheral beam of the roof frame does not always have the structural strength or function of "forming a built-up column," and thus the opponent's allegation cannot be accepted.

B Summary of Invention 1

Invention 1 is not the invention described in Evidence A No. 1.

C Regarding Invention 2

Invention 2 includes all the specified matters of the invention of Invention 1, and limits the configuration. Therefore, with reasons similar to the reasons described in A above, it is not the invention described in Evidence A No. 1.

D Summary

As described above, it cannot be said that Inventions 1 and 2 violate the provisions of Article 29(1)(iii) of the Patent Act.

(2) Regarding Article 29(2) of the Patent Act

A Regarding Invention 1

(A) Comparison

Invention 1 and Invention A-1 have a Corresponding Feature and Different Feature similar to Different Feature in (1) above.

(B) Judgment

There is no proof of the configuration relating to Different Feature, and the

configuration is not recognized as a well-known technique such that it is needless to show proof.

Further, according to the configuration relating to Different Feature of Invention 1, as described in Paragraph [0035] of the detailed description of the Invention, a technical effect "The corner column 38 and the pair of supporting columns 34A and 34B are respectively coupled by the coupling beam 40, thereby further stabilizing the support frame 32. Therefore, the support frame 32 can be structurally separated from the auditoriums 14 to be independent." is exerted, and thus the configuration is not a design matter.

Consequently, it cannot be said that even a person skilled in the art would easily obtain the configuration relating to Different Feature in Invention A-1.

(C) Regarding the opponent's allegation

Although the opponent alleges that "even if there are other differences, they are very minor differences, and they are only differences that a person skilled in the art appropriately adopts for the convenience of design, and thus the person skilled in the art could easily conceive by applying well-known technique on the basis of Invention A-1," on Page 20, Lines 16 to 18 of the written opposition, the opponent's allegation cannot be accepted, since the configuration relating to Different Feature is not a design matter, as described in (B) above.

B Summary of Invention 1

Invention 1 could not be easily invented by a person skilled in the art on the basis of the invention described in Evidence A No. 1.

C Regarding Invention 2

Invention 2 includes all the specified matters of the invention of Invention 1, and limits the configuration. Therefore, with reasons similar to the reasons described in A above, it could not be easily invented by a person skilled in the art on the basis of the invention described in Evidence A No. 1.

D Summary

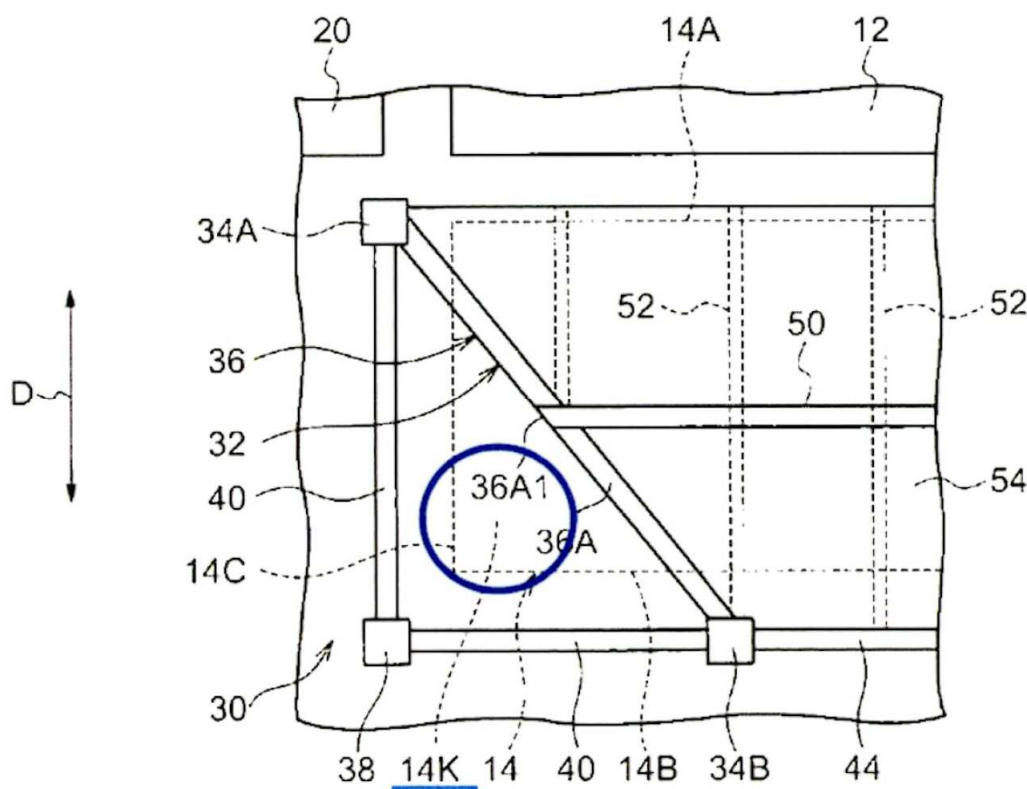
As described above, it cannot be said that Inventions 1 and 2 violate the provisions of Article 29(2) of the Patent Act.

(3) Regarding Article 36(6)(ii) of the Patent Act

A The opponent alleges as follows with respect to requirements for clarity.

(A) "Although Invention 1 describes 'a support beam crossing a corner portion on a back surface side in the auditoriums diagonally in a plane view,' it is unclear what part 'a corner portion on a back surface side' refers to" (Page 24, Lines 10 to 11 of the written opposition).

Further, regarding the above, the opponent, on Page 22 of the written opposition, explains with reference to the following drawing that "originally, the support beam 36 had to cross the portion indicated by the blue circle in FIG. 2, but this was not the case" (Page 22, Lines 15 to 16 of the written opposition).



(B) "Although Invention 1 is the invention according to 'roof structure,' it includes 'auditoriums' as an essential requirement thereof, and thus the meaning and contents of 'roof structure' become unclear (those equipped with auditoriums are not called roof structures)" (Page 24, Lines 21 to 22 of the written opposition).

(C) "Although Invention 2 uses the word 'center portion,' it is unclear whether this refers only to the 'center' or includes the 'center' neighborhood as well" (Page 25, Lines 2 to 3

of the written opposition).

B The allegation of A above will be examined.

(A) The opponent defines the portion indicated by the blue circle as "a corner portion 14K on a back surface portion in auditoriums" as shown in the drawing in A (A) above, on Page 22 of the written opposition.

However, even considering the detailed description of the Invention, it is not recognized the necessity that the intersection of the "back surface 14B" and the "side surface 14C" of the auditoriums and the "support beam 36" are close to each other, and even if the intersection is away from the "support beam 36", it is understood that the "support beam 36" has only to crosses diagonally both the "back surface 14B" and the "side surface 14C" configuring "a corner portion on a back surface portion in auditoriums."

Consequently, the opponent's allegation that "originally, the support beam 36 had to cross the portion indicated by the blue circle in FIG. 2, but this was not the case" cannot be accepted, and it cannot be said that it is unclear what part "a corner portion on a back surface portion in auditoriums " refers to.

Therefore, the opponent's allegation of A (A) above cannot be accepted.

(B) In the invention of "roof structure," what should be included in specified matters should be decided by the applicant depending on the invention for which a patent is sought. Then, the opponent's allegation that "those equipped with auditoriums are not called roof structures" is groundless, and no reason can be found for which the invention of "roof structure" should not include the specified matters of "auditoriums".

Therefore, the opponent's allegation of A (B) above cannot be accepted.

(C) In Paragraph [0034] of the detailed description of the Invention, it is described that "the span L_1 of the roof beam 50 can be shortened ($L_1 < L_0$) as compared with the case where the roof beam is bridged over the supporting columns 34A which are erected on both sides in the width direction of the auditoriums 14. Therefore, since the required cross-sectional area of the roof beam 50 and the reinforcement for the roof beam 50 are reduced, the construction cost of the roof beam 50 can be reduced," and in Paragraph [0043], it is described that "also, in the above embodiment, the example in which the roof beam 50 is installed between the center portions 36A1 in the longitudinal direction of the support beams 36 on both sides has been shown, but the above embodiment is not limited to this. The roof beam 50 may be installed between the pair of support beams 36 so that

its span (length in the longitudinal direction) is shorter than the width of the auditoriums 14".

According to the above description, since it is obvious that Invention 1 includes a configuration in which the roof beam 50 and the support beam 36 are connected to such an extent that the technical effect that can make the span of the roof beam 50 shorter than the width of the auditoriums 14 can be exerted, in Invention 2, it is recognized that it is an obvious matter for a person skilled in the art that a "center portion" includes not only the center but also the center neighborhood as well.

Therefore, the opponent's allegation of A (C) above cannot be accepted.

C Summary

It cannot be recognized that Inventions 1 and 2 violate the requirements for clarity.

D Summary

As described above, the descriptions of Claims 1 and 2 of the scope of claims of the Patent fall under the provisions of Article 36(6)(ii) of the Patent Act.

(4) Regarding Article 36(6)(i) of the Patent Act

A The opponent alleges in outline as follows with respect to the requirements for support.

"Although Invention 1 describes 'a support beam crossing a corner portion on a back surface side in the auditoriums diagonally in a plane view,' in the specification, the support beam does not 'cross a corner portion on a back surface side in the auditoriums.'" (Page 24, Lines 15 to 17 of the written opposition).

B The allegation of A above will be examined.

As described in (3) B (A) above, the portion indicated by the blue circle in the drawing in (3) A (A) that is defined as "a corner portion on a back surface side in the auditoriums" by the opponent is not based on the detailed description of the Invention, and thus it cannot be said to be appropriate.

Then, in FIG. 2, it is obvious that the "support beam 36" crosses diagonally both the "back surface 14B" and the "side surface 14C" configuring "a corner portion on a back surface portion in auditoriums".

Therefore, in the specification of the Invention, it is described that the "support beam" "crosses a corner portion on a back surface side in the auditoriums diagonally in a plane view" as described in Invention 1.

Therefore, the opponent's allegation cannot be accepted.

C Summary

It cannot be recognized that Inventions 1 and 2 violate the requirements for support.

D Summary

As described above, the descriptions of Claims 1 and 2 of the scope of claims of the Patent fall under the provisions of Article 36(6)(i) of the Patent Act.

6 Closing

As described above, according to the reasons and evidences of the opposition to the grant of the patent, the patent according to Claims 1 and 2 cannot be cancelled. Further, no other reason for cancelling the patent according to Claims 1 and 2 can be found.

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

July 31, 2019

Chief administrative judge: AKITA, Masayuki

Administrative judge: FUJI, Haruna

Administrative judge: SUMIDA, Hidehiro