

Advisory opinion

Advisory opinion No. 2017-600009

Tokyo, Japan

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The advisory opinion on the technical scope of a patent invention for Patent No. 3899354 between the parties above is stated and concluded as follows.

[Conclusion]

The "BASE-ISOLATED BUILDING" indicated in the drawings and explanatory document of Article A does not fall within the technical scope of the invention of Japanese Patent No. 3899354.

Reason

No. 1 Object of the demand and History of the procedures

The object of the demand for the advisory opinion is to demand the advisory opinion that "BASE-ISOLATED BUILDING" (hereinafter, referred to as "Article A") shown in the drawings and explanatory document of Article A (Evidence A No. 2) attached to the written request for the advisory opinion which has been amended (hereinafter, referred to as the "written request for the advisory opinion") does not fall

within the technical scope of the invention related to Japanese Patent No. 3899354 (hereinafter, referred to as the "Patent").

Regarding the history of procedures relating to the patent, the application was submitted on October 08, 2004, registration of establishment of the patent right was made on January 05, 2007, and concerning the request for the advisory opinion of the case submitted on January 25, 2017, the written amendment was submitted from the demandant on February 15, 2017. Then, a duplicate of the written request for the advisory opinion and a duplicate of the written amendment were delivered on February 17, 2017, and although an opportunity was given for filing a written reply within a designated period, the demandee did not submit a written reply or the like.

No. 2 The patent invention

The patent invention, according to descriptions of the patent specification and drawings, is specified by the matters described in Claim 1 of the scope of claims for patent as follows (in the body, the invention is separately described in relation to each constituent component, and codes A to F are added; hereinafter, the constituent components are referred to as "the constituent component A" and the like).

"A F A base-isolated building comprising: a building body; a building footing which transmits a load of the building body to the ground and supports the same; and base-isolating devices which are fixed to the building footing and support the building body,

B wherein the building footing is configured to have a plurality of steel pipe piles penetrating into the ground, and coupling members for coupling pile head portions of the plurality of steel pipe piles, the base-isolating device being fixed on the pile head portion of the steel pipe pile, the base-isolating device being directly fixed with a girder on the lowest floor of the building body thereon,

C wherein the base-isolating device is fixed to the steel pipe pile through a fixing member installed on the pile head portion of the steel pipe pile,

D wherein the fixing member is configured to have a base plate on which the

base-isolating device is fixed, and anchor members fixed on a base plate bottom surface, and

E wherein, while the anchor members are inserted in the pile head portion of the steel pipe pile and the base plate is positioned, concrete is injected into the steel pipe pile to fill up to the base plate bottom surface, thereby integrating the steel pipe pile and the fixing member with hardened concrete."

No. 3 Article A

1 Descriptions of Article A in the written request for the advisory opinion

In the drawings and explanatory document of Article A (Evidence A No. 2) attached to the written request for the advisory opinion amended by the written amendment dated February 15, 2017, Article A was generally described as follows.

"a. g. A base-isolated building which drives a plurality of steel pipe piles which become a base of a lower structure into the ground at positions of a plurality of columns for supporting a vertical load on an upper structure of a building, and is mounted with a base-isolating device between a footing attached with each column and a lower base including the steel pipe pile,

b. wherein the lower base is raised and formed so as to enclose a head portion and a periphery of the steel pipe pile, and is mounted with a lower base plate at an upper surface center portion through anchor bolts,

c. wherein the base-isolating device is placed on the lower base plate and fixed by a fixing bolt to be mounted on the lower base,

d. wherein an upper footing mounted with an upper base plate on a bottom surface through the anchor bolts is placed and fixed by the fixing bolt, on the base-isolating device,

e. wherein the column of the upper structure and an end portion of a base beam are mounted on the upper footing, and

f. wherein furthermore, the columns are raised on the upper footing, and a girder is laid between the columns on each floor to construct a multi-story building." (Page 3, lines 3-17 of the explanatory document of drawings of Article A)

2 Specifications of Article A by the body

(1) The drawings and explanatory document of Article A (Evidence A No. 2)

A The drawings and explanatory document of Article A describe as follows.

(A) "a square shape is enclosed by a shuttering as shown by a virtual line a of Fig. 2(b), and in order to form joint slabs 5 between respective lower bases 4 to be formed, a space portion with required width is formed by enclosures from both sides" (Page 1, lines 20-22 of the explanatory document of drawings of Article A. The underlines are given by the body, and so on.)

(B) "At a center portion of the lower base plate 6, as shown in Fig. 2(a), a concrete placement hole 7 is provided, and on a bottom surface side, a plurality of anchor bolts 8 and bag nuts 9 are attached in a circular shape at required intervals. As shown in Fig. 2(b), while the lower anchor bolts 8 are suspended in the space portion 2b of the steel pipe pile 2, the bag nuts 9 are positioned on an upper surface of the lower base 4 formed by being raised from the head portion of the steel pipe pile 2." (Page 1, lines 25-29 of the explanatory document of drawings of Article A.)

(C) "Concrete for forming the lower base 4 is placed from the placement hole 7 at the center portion of the lower base plate 6 into the space portion 2b of the steel pipe pile 2 and from a space between a peripheral edge portion of the lower base plate 6 and the shuttering, and concrete for forming the joint slabs 5 is generally simultaneously placed to be integrated....as shown in Fig. 3, the lower base 4 raised around the head portion including a head portion inner space portion 2b of the pile 2, and in the upper part is integrally formed, and the lower base plate 6 is integrally mounted on the upper surface of the lower base 4 in a flush state, and the joint slabs 5 are also continuously formed." (Page 2, lines 1-9 of the same explanatory document)

B The following matters can be seen from the drawings of Article A.

(A) Based on the descriptions of A (A), (C) above, from Figs. 1-5 of the drawings of Article A, the lower base 4 and the joint slabs 5 are integrally formed by concrete, the

steel pipe piles 2 are coupled with each other by both members, and the base of the lower structure is configured by the lower base 4, the joint slabs 5, and the steel pipe piles 2.

(B) Based on the description of A (B) above, from Fig. 2-4 of the drawings of Article A, on the bottom surface of the lower base plate 6 on which the base-isolating device is fixed, the lower anchor bolts 8 are fixed.

(C) Based on the descriptions of A (B), (C) above, from Figs. 2-4 of the drawings of Article A, the lower anchor bolts 8 are inserted to the pipe head portion of the steel pipe pile 2, the lower base plate 6 is positioned before concrete placement, and concrete is placed to the head portions of the steel pipe pile 2 and the peripheral edge portion thereof and filled up to the bottom surface of the lower base plate 6, thereby integrating the steel pipe 2, the lower base 4, and the lower base plate 6.

(2) Specifications of Article A

Comprehensively considering 1 and (1) above, if Article A is organized in correspondence with the constituent components A-F of the patent invention, it can be acknowledged that Article A is equipped with components separately described as follows. (Codes a-f are assigned to each component. Hereinafter, the separately described components are referred to as "a component a" and the like.).

"a, g A base-isolated building which drives a plurality of steel pipe piles which become a base of a lower structure into the ground at positions of a plurality of columns for supporting a vertical load on an upper structure of the building, and is mounted with a base-isolating device between a footing attached with each column and a lower base including the steel pipe pile,

b wherein a base of the lower structure is formed by the plurality of steel pipe piles driven into the ground, a lower base is raised and formed so as to enclose a head portion and a periphery of the steel pipe pile, and joint slabs integrally formed with the lower base by concrete, the pile head portions of the steel pipe piles being coupled with each

other by the lower bases and the joint slabs, the base-isolating device being fixed at an upper surface center portion of the lower base, an upper footing being placed on the base-isolating device, the upper footing is mounted with a column of the upper structure and an end portion of a base beam thereon, the upper footing constructing a multi-story building thereon,

c wherein the base-isolating device is fixed on a lower base plate installed at the upper surface center portion of the lower base with a fixing bolt,

d wherein anchor bolts are fixed on a bottom surface of the lower base plate, and

e wherein, while the anchor bolts of the lower base plate are inserted to the pile head portion of the steel pipe pile and while the lower base plate is positioned, concrete is injected into the pile head portion and a peripheral edge portion thereof to fill up to the bottom surface of the lower bases plate, thereby integrating the steel pipe pile, the lower base, and the lower base plate with hardened concrete."

No. 4 Judgment of a belonging property

We will examine whether or not Article A satisfies the constituent components of the patent invention.

1 Regarding the constituent component A

It is obvious that "a building," "a base of a lower structure," and "a base-isolating device" of the component a of Article A respectively correspond to "a building body," "a building footing," and "a base-isolating device" of the patent invention.

Therefore, the component a of Article A satisfies the constituent component A of the patent invention.

2 Regarding the constituent component B

(1) "Steel pipe piles" and "a base beam" of the component b of Article A respectively correspond to "steel pipe piles" and "a girder on the lowest floor" of the patent invention.

(2) Concerning the component b of Article A, there is a description "is formed by...a lower base raised and formed so as to enclose a head portion and a periphery of the steel pipe pile, and joint slabs integrally formed with the lower base by concrete, the pile head portions of the steel pipe piles being coupled with each other by the lower bases and the joint slabs," so that "the lower bases and the joint slabs" of the component b of Article A correspond to "coupling members" of the patent invention.

(3) "The base-isolating device" of the component b of Article A is fixed at "an upper surface center portion" of "a lower base raised and formed so as to enclose a head portion and a periphery of the steel pipe pile"; namely, is fixed on the lower base.

On the other hand, the patent invention has a configuration in which "the base-isolating device" is fixed "on the pipe head portion of the steel pipe pile." In connection with the "on the pipe head portion of the steep pipe pile," in "the background" section of the specifications of the patent, as described as "[0002]...A base-isolated building described in the Patent document 1 comprises: a building footing which consists of a supporting pile driven into the ground, a base footing fixed to a supporting pile head portion, and a base beam connecting base footings with each other; a base-isolating device fixed on the basic footing; and a building body fixed on the base-isolating device...." (underlines are given by the body and so on.), a technology of constructing the base footing on the supporting pile head portion and fixing the base-isolating device on the base footing is cited, and "problem to be solved by the invention" is described as "[0004] However, in the base-isolated building described in the patent document 1, it is necessary to excavate the ground to a base footing bottom surface position and a base slab bottom surface position after constructing the supporting pile, and to construct the building footing by integrally forming the base footing with the supporting pile head portion and forming base slabs and the base beam, and then set the base-isolating device on the base footing. Therefore, there is a problem that the construction of the building footing takes time and effort to thereby require a long period for setting the base-isolating device, and consequently, the whole construction period relating to the construction of the building is also prolonged.," and the problem in the installation of the base-isolating device on the base footing is thereby

described. According to embodiments of Figs. 3, 4 and the like, there is no form provided with the base on the pile head portion of the steel pipe pile, so that "the base-isolating device being fixed on the pile head portion of the steel pipe pile" in the constituent component B of the patent invention means that the base-isolating device is directly fixed on the pile head portion of the steel pipe pile, and it is obvious that it is not included that the base footing and the like are installed on the pile head portion of the steel pipe pile and the base-isolating device is fixed through that.

Then, "the base-isolating device" of the component b of Article A is fixed on the lower base, so that it does not correspond to "the base-isolating device being fixed on the pile head portion of the steel pipe pile" in the constituent component B of the patent invention.

(4) Therefore, the component b of Article A does not satisfy the constituent component B of the patent invention.

3 Regarding the constituent component C

In the component c of Article A, "a lower base plate" is "installed at the upper surface center portion of the lower base."

Then, as explained in 2 (3) above, the patent invention assumes that the base-isolating device is directly fixed on the pile head portion of the steel pipe pile, so that it is obvious that "a fixing member installed on the pile head portion of the steel pipe pile" the component c of Article A is not installed on the base on the pile head portion.

Hence, the lower base plate of the component c of Article A is fixed on the lower base, so that it does not correspond to "the base-isolating device is fixed to the steel pipe pile through a fixing member installed on the pile head portion of the steel pipe pile" of the constituent component C of the patent invention.

Therefore, the component c of Article A does not satisfy the constituent component C of the patent invention.

4 Regarding the constituent component D

It is obvious that "a lower base plate" and "anchor bolts" of the component d of Article A respectively correspond to "a base plate" and "anchor members" of the patent invention.

Therefore, the component d of Article A satisfies the constituent component D of the patent invention.

5 Regarding the constituent component E

Also in the component e of Article A, "while the anchor bolts of the lower base plate are inserted to the pile head portion of the steel pipe pile and while the lower base plate is positioned," "concrete is injected into the pile head portion" "to fill up to the bottom surface of the lower bases plate, thereby integrating the steel pipe pile" "and the lower base plate with hardened concrete," so that the component e of Article A corresponds to the constituent component E of the patent invention.

Therefore, the component e of Article A satisfies the constituent component E of the patent invention.

6 Regarding the constituent component F

It is obvious that the component f of Article A corresponds to the constituent component F of the patent invention, so that the component f of Article A satisfies the constituent component F of the patent invention.

7 Summary of the patent invention

As described above, Article A does not satisfy the constituent components B and C of the patent invention, so that Article A does not fall within the technical scope of the patent invention.

No. 5 The inventions relating to Claims 2-5

Claims 2-5 of the case are inventions which further limit the invention relating to Claim 1 (the patent invention) by citing Claim 1 directly or indirectly. Therefore, as described above, so long as Article A does not fall within the technical scope of the patent invention, Article A does not fall within the technical scope of the inventions

relating to Claims 2-5 of the case.

No. 6 Closing

As described above, Article A does not satisfy the constituent components B and C of the patent invention, so that Article A does not fall within the technical scope of the invention relating to the Patent.

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

June 1, 2017

Chief administrative judge: MAEKAWA, Shinki

Administrative judge: INOUE, Hiroyuki

Administrative judge: ONO, Chuetsu

The explanatory document of drawings of Article A

The drawings of Article A are drawings showing a technology which is independently developed by KUROSAWA, and based on a technology of "MOUNTING METHOD AND MOUNTING STRUCTURE OF BASE-ISOLATING DEVICE" relating to a patent right obtained as Japanese Patent No. 5165139 in 2012, which was obtained by further pursuing reasonable workability and improved safety of a base-isolation structure, while ensuring accuracy, and Fig. 1 is a plane view schematically showing a position at which the base-isolating device is mounted, in a building applying the mounting method.

Figs. 2 to 4 are side cross-sectional views showing a process order relating to the mounting method, Fig. 5 is an enlarged cross sectional view showing the mounting structure, and Fig. 6 is a partial side cross sectional view showing a mounting state. Also, Fig. 7 shows an influence on the base-isolating device when there is a lower base formed by the mounting method, and Fig. 8 shows an influence when there is not the lower base.

1. In a plane view of the building to which the base-isolating device shown in Fig. 1 is mounted, at positions on which a plurality of columns 1 for supporting a vertical load on an upper structure of the building are provided, a plurality of steel pipe piles 2 which become a base of a lower structure are driven, thereby mounting the base-isolating device between an upper footing 3 provided between each column 1 and the steel pipe pile 2, and a lower base concrete (although it can be recognized as a base footing, hereinafter, referred to as a lower base) 4. In the design, the columns 1 and the steel pipe piles 2 are aligned at equal intervals 11 m (11000 mm).

2. Regarding the base-isolated building by the mounting method

In Figs. 2 to 6 relating to the mounting method, the head portion inside of the steel pipe pile (base pile) 2 driven into the ground is partitioned by a partition plate 2a to form a space portion 2b. In order to raise and form the lower base 4 to surround a head portion and a periphery of the steel pipe pile 2, a square shape is enclosed by a shuttering as shown by a virtual line a of Fig. 2 (b), and in order to form joint slabs 5

between respective lower bases 4 to be formed, a space portion with required width is formed by enclosures from both sides, and at an upper surface center portion of the shuttering forming the lower base 4, a lower base plate 6 which is a fixing member of the base-isolating device is leveled and positioned to be attached in a temporary attachment state.

At a center portion of the lower base plate 6, as shown in Fig. 2 (a), a concrete placement hole 7 is provided, and on a bottom surface side, a plurality of lower anchor bolts 8 and bag nuts 9 are attached in a circular shape at required intervals. As shown in Fig. 2(b), while the lower anchor bolts 8 are suspended in the space portion 2b of the steel pipe pile 2, the bag nuts 9 are positioned on an upper surface of the lower base 4 formed by being raised from the head portion of the steel pipe pile 2.

Then, concrete for forming the lower base 4 is placed from the placement hole 7 at the center portion of the lower base plate 6 into the space portion 2b of the steel pipe pile 2 and from a space between a peripheral edge portion of the lower base plate 6 and the shuttering, and concrete for forming the joint slabs 5 is generally simultaneously placed to be integrated. Furthermore, as a matter of course, at a part in which the concrete is placed, required reinforcement bars are arranged.

If the shuttering is removed after hardening the placed concrete, as shown in Fig. 3, the lower base 4 raised around the head portion including a head portion inner space portion 2b of the pile 2, and in the upper part is integrally formed, and the lower base plate 6 is integrally mounted on the upper surface of the lower base 4 in a flush state, and the joint slabs 5 are also continuously formed.

On the lower base 4 formed in this way, as shown in Fig. 4, the base-isolating device 10 is placed, and a lower flange plate 11 of the base-isolating device 10 and the lower base plate 6 mounted on the lower base 4 are adjusted (positioned). The fixing bolt 12 is screwed with the bag nut 9 to fix the base-isolating device 10 to the lower base 4. Furthermore, on the lower flange plate 11 and an upper flange plate 13 of the base-isolating device 10, bolt insertion holes are provided in advance at positions and intervals corresponding to the bag nuts provided on the base plates mounted on the upper and lower sides. According to the above structure, in short, the lower base 4 can be recognized as the base footing or the lower footing substantially formed at the head

portion of the steel pipe pile 2.

Then, after the base-isolating device 10 is mounted on the upper portions of the lower bases 4 formed at the head portions of the steel pipe piles 2, as shown in Fig. 5 and Fig. 6, the upper footing 3 is mounted on the base-isolating device 10 to construct the upper structure. On a bottom surface of the upper footing 3, the upper anchor bolts 15, the upper base plate 16, and the bag nuts 17 are mounted in advance. The upper flange plate 13 of the base-isolating device 10 and the upper base plate 16 of the upper footing 3 are fixed by screwing the fixing bolts 18 with the bag nuts 17, a base beam 19 is laid over the upper footing 3, and an end portion of the base beam 19 is coupled and fixed to the upper footing 3 to be integrally united. Furthermore, columns 20 are raised on the upper footing 3, and a girder 19a is laid between the columns on each floor to construct a multi-story building. Also, on upper surfaces of each base beam 19 and each girder 19a, floor slabs 21 are laid.

A main component of the base-isolated building obtained by the mounting method is separately described and each constituent component is listed as follows.

- a. g. A base-isolated building which drives a plurality of steel pipe piles which become a base of a lower structure into the ground at positions of a plurality of columns for supporting a vertical load on an upper structure of a building, and is mounted with a base-isolating device between a footing attached with each column and a lower base including the steel pipe pile,
- b. wherein the lower base is raised and formed so as to enclose a head portion and a periphery of the steel pipe pile, and is mounted with a lower base plate at an upper surface center portion through anchor bolts,
- c. wherein the base-isolating device is placed on the lower base plate and fixed by a fixing bolt to be mounted on the lower base,
- d. wherein an upper footing mounted with an upper base plate on a bottom surface through the anchor bolts is placed and fixed by the fixing bolt, on the base-isolating device,
- e. wherein the column of the upper structure and an end portion of a base beam are mounted on the upper footing, and
- f. wherein furthermore, the columns are raised on the upper footing, and a girder is laid

between the columns on each floor to construct a multi-story building.

Then, the function/effect which can be obtained by the base-isolated building having the above constituent components, is that

"during work for driving steel pipes pile into the ground, even if positions of the steel pipe pile are slightly deviated or slightly inclined, and even if there is slight difference in the height of head portions of the steel pipe piles, by forming a lower base (a base footing), a position and a level of a lower base plate on which the base-isolating device is fixed can be correctly set and mounted on an upper surface of the lower base, so that a base-isolated building on which all base-isolating devices are properly installed is provided."

3. Fig. 7 shows a state that the base-isolating device 10 is mounted on the lower base 4 raised and formed on the periphery and the upper portion of the steel pipe pile 2 by the mounting method, and Fig. 8 shows a state that the base-isolating device 10 is mounted on the steel pipe pile 2 without forming the lower base.

In a concrete structure such as a building, a vertical load of a building body that is an upper structure is applied on columns, so that it is the most general structural design that base piles are driven into the ground as a lower structure so as to support the vertical load. Also, although the steel pipe piles 2 are vertically driven at required intervals according to a design drawing at a construction site, it is work on the site, and positions in a horizontal direction are deviated, or slightly inclined. Then, for the time being, it should be that "concerning the precision of piles, a positional deviation in a horizontal direction is set to be 100 mm or less. Also, if the deviation exceeds 100 mm, supervisor staff will give instructions" (Public construction works standard specifications (building construction) 2010 edition: Ministry of Land, Infrastructure and Transport Minister Government Office Government Buildings Department)

Then, while axes of the steel pipe pile 2 and the column 20 are generally deviated within a range of 10 cm or less, axial force N due to the vertical load of the building body is applied on the steel pipe pile 2 as axial force R transmitted through the upper footing 3 and the base-isolating device 10.

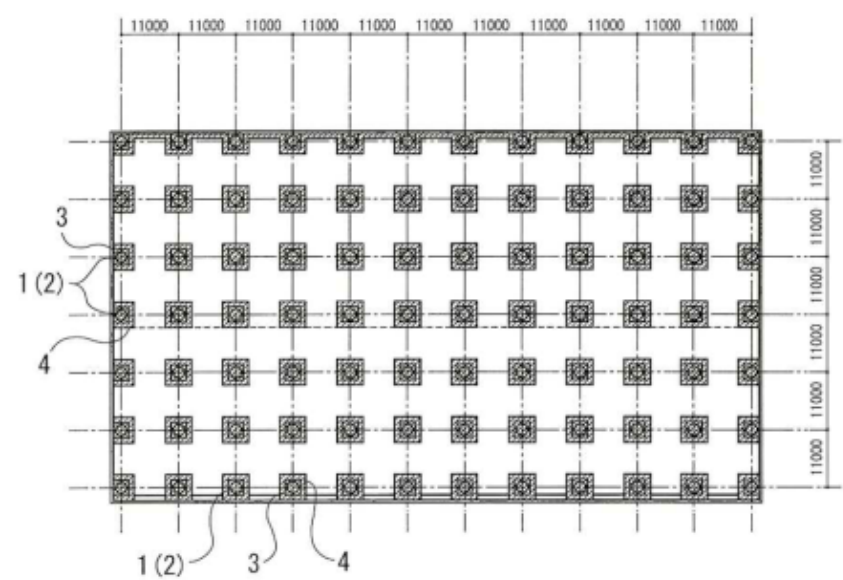
When the lower base 4 is formed as shown in Fig. 7, even if a horizontal deviation is generated between the column 20 and the steel pipe pile 2, secondary stress M (bending moment) due to the deviation is generated in the lower base 4 to correspond

to that, so that there is no effect at all on the base-isolating device 10.

Contrarily, when there is not the lower base 4 as shown in Fig. 8, if a horizontal deviation is generated between the column 20 and the steep pipe pile 2, the axial force N of the vertical load acted on the column 20 is directly applied on the base-isolating device 10 as the secondary stress M (bending moment), so that the base-isolating device 10 is adversely affected.

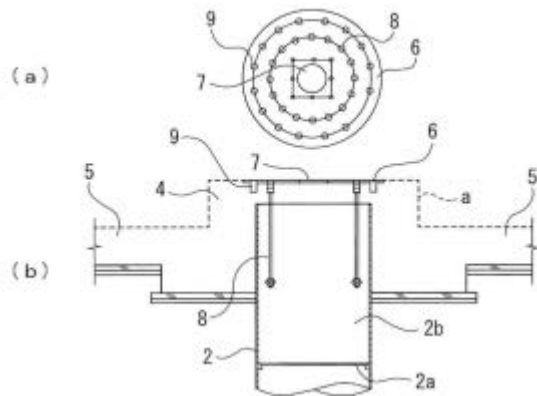
Drawings of Article A

[Fig. 1]

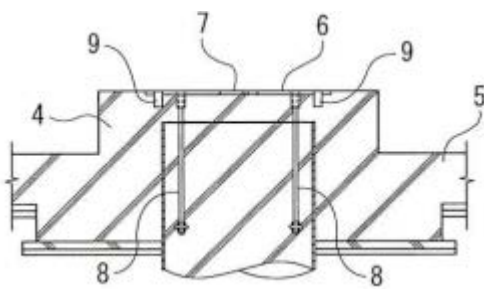


Drawings of Article A

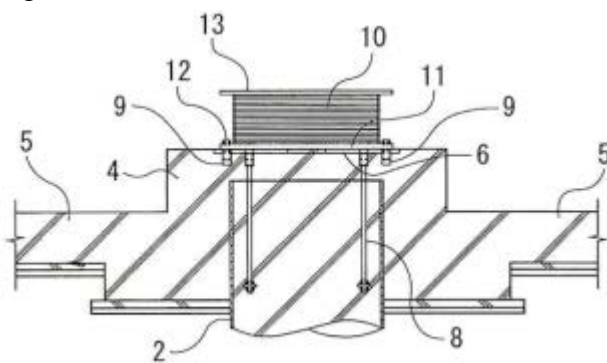
[Fig. 2]



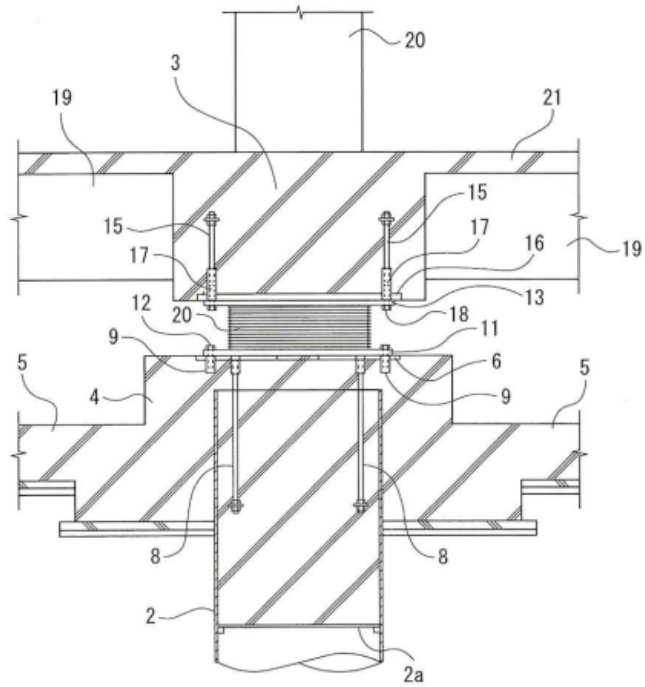
[Fig. 3]



[Fig. 4]

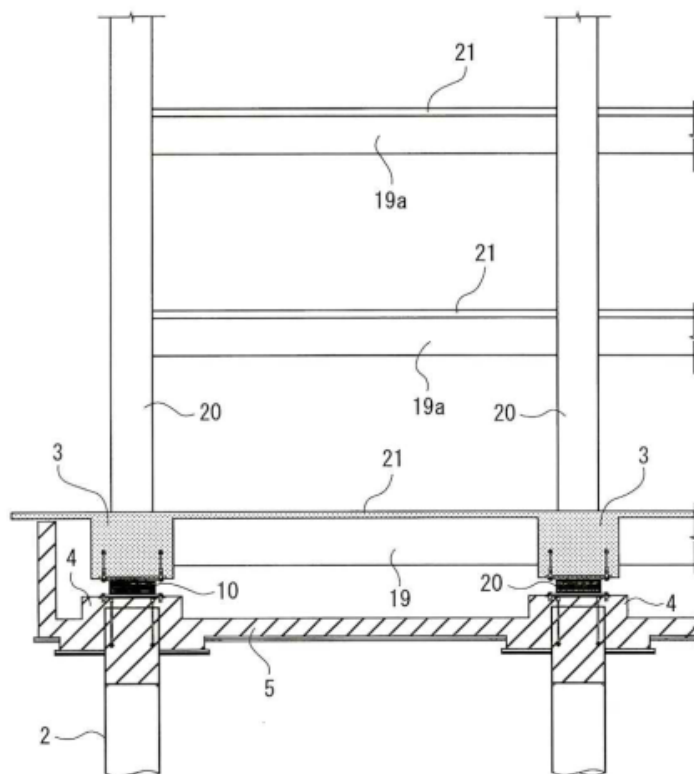


[Fig. 5]



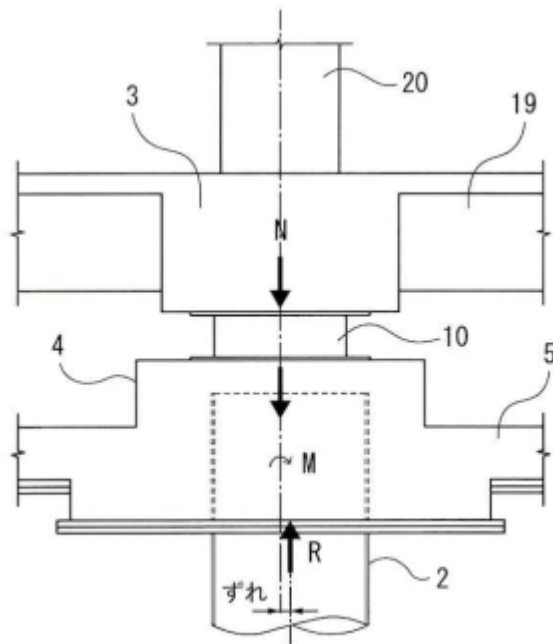
Drawings of Article A

[Fig. 6]

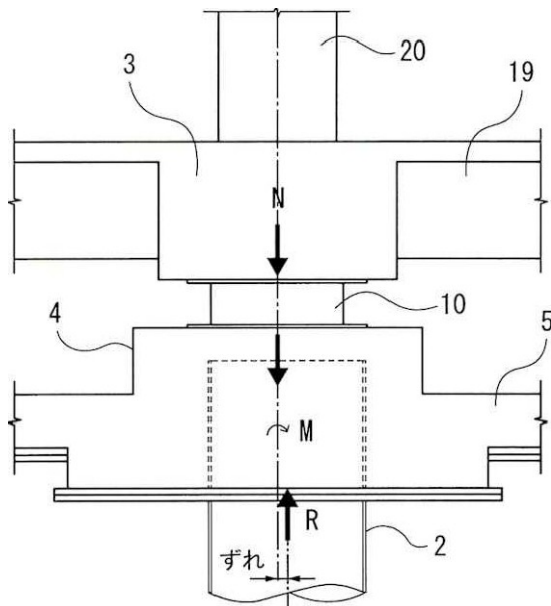


Drawings of Article A

[Fig. 7]



[Fig. 8]



N : Axial force due to a vertical load of a building body

R : Axial force transmitted to a pile

M : Secondary stress due to a horizontal deviation (bending moment)