

Patent Right	Date	September 20, 2023	Court	Intellectual Property High Court, First Division
	Case number	2021 (Gyo-Ke) 10152		
<p>- Each of the Inventions includes not only the invention including the conveyance tray on which the laminated rotor core is mounted, but also the invention that does not include the conveyance tray, and on the premise that the description of the Scope of Claims which does not include the conveyance tray, it cannot be considered that the Invention falls within a range that a person ordinarily skilled in the art could solve the problems of the Invention that the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die requires time either by a human hand or a machine, and the workability is extremely poor, and could provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively, on the basis of the Detailed Description of the Invention. Also, it cannot be considered that it falls within a range that a person ordinarily skilled in the art could solve the problem relating to the processes of fixing the laminated rotor core on the lower die and removing it from the lower die, by means of referring to the common general technical knowledge upon filing the application even in the absence of the specific statements in the Detailed Description of the Invention. The Invention includes the invention that is not described in the Detailed Description of the Invention of the Description, and thus does not satisfy the requirements stipulated in Article 36, paragraph (6), item (i) of the Patent Act.</p>				

Case type: Rescission of Trial Decision

Result: Granted

References: Article 36, paragraph (6), item (i) of the Patent Act

Related rights, etc.: Invalidation Trial No. 2020-800097, Patent No. 6180569

Summary of the Judgment

1 Y filed applications (the second generation application to the fifth generation application) which are sequentially divided from a patent application dated November 24, 2005 (the first generation application), which is a divisional application from a patent application filed on January 24, 2005 (Patent Application No. 2005-15860 (the first parent application)), and further filed a divisional application (Patent Application No. 2016-40066, the Application) on March 2, 2016 on the invention titled "Method of resin sealing permanent magnets," from a patent application dated January 16, 2015 (the original application). The establishment of patent right was registered on July 28, 2017 (Patent No. 6180569, Number of claims: 3, the Patent).

Although X made a request for a trial for invalidation of the Patent (Invalidation Trial No. 2020-800097) for the invention pertaining to Claims 1 to 3 in the Patent on October 8, 2020, the Japan Patent Office made a decision that "The request for the trial is not established." ("the JPO decision") on October 22, 2021, and the certified

copy thereof was delivered to X on November 5 of the same year.

2 In the case, as reasons for rescission, there were presented Reason for Rescission 1 (Determination error on novelty based on Exhibit Ko 1 on the premise of violations of requirements of division), Reason for Rescission 2 (Determination error on inventive step based on Exhibit Ko 1 on the premise of violations of requirements of division), Reason for Rescission 3 (Determination error on inventive step mainly citing Exhibit Ko 5), Reason for Rescission 4 (Determination error on correction requirements), Reason for Rescission 5 (Determination error on enabling requirements), Reason for Rescission 6 (Determination error on requirements for support), Reason for Rescission 7 (Determination error on requirements for clarity) were alleged, however, the judgment of this case, regarding Reason for Rescission 6 (Determination error on requirements for support), summarized and determined as follows, and rescinded the JPO decision.

(1) It should be determined whether or not the invention for which a patent is sought is stated in the Detailed Description of the Invention by comparing the description of the Scope of Claims and the Detailed Description of the Invention, and examining whether or not the invention described in the Scope of Claims is stated in the Detailed Description of the Invention and a person ordinarily skilled in the art could solve the problems of the invention on the basis of the Detailed Description of the Invention or suggestion thereof, and whether or not a person ordinarily skilled in the art could solve the problems of the invention by means of referring to the common general technical knowledge upon filing the application even in the absence of the descriptions or the suggestions.

The Scope of Claims of the Invention does not specify the shape and structure of the upper die and the lower die, and the layout, state, or the like of the laminated rotor core in a case other than "pressing the laminated rotor core with the lower die and the upper die," and, for example, does not have the conveyance tray on which the laminated rotor core placed on the lower die as a structure, so that it is recognized that the Scope of Claims of Invention includes not only the invention including the conveyance tray on which the laminated rotor core of Invention 1 is mounted, but also the invention that does not include the conveyance tray.

Regarding the problem to be solved by the invention described in the Detailed Description of the Invention and Means for Solving the Problem, on the assumption that there are the problem in the prior art 1 (it is difficult to uniformly fill each magnet insertion hole with the resin member, and reliability is deteriorated, and in addition, a pump for supplying the resin member requires a large supply pressure,

which makes the device expensive) and the problem in the prior art 2 (the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die requires time either by a human hand or a machine, and the workability is extremely poor), the problem to be solved by the invention (the problem of the Invention) is recognized to "provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively". Further, it can be recognized that the JPO decision made determination on requirements for support based on the matter that the problem of the Invention is to solve the problem in the prior art 2, so that it cannot be considered that there is an error in the recognition of the problem of this point.

(2) As means for solving the problem in the prior art 2, Invention 1 is acknowledged to specify the layout of the laminated rotor core with reference to the upper die and the lower die when pressing the laminated rotor core, and to specify a positional relationship or a state of the upper die and the lower die, whereas the invention described in the Detailed Description of the Invention of the Description is to "convey the laminated rotor core 12 set in the conveyance tray 16 including a rectangular plate-shaped tray portion 26 with which a lower surface 25 of the laminated rotor core 12 comes into contact, and a diameter-fixed and rod-shaped guide member 27 provided to stand at the central portion of the tray portion 26 and fitted into the shaft hole 11 of the laminated rotor core 12 onto the lower die 17," and is to "remove the conveyance tray 16 from the lower die 17 together with the laminated rotor core 12, the laminated rotor core 12 is removed from the conveyance tray 16," so that, according to the Detailed Description of the Invention of the Description, it is understood that the conveyance tray is an essential configuration. Then, Invention 1 includes not only the invention including the conveyance tray on which the laminated rotor core is mounted, but also the invention that does not include the conveyance tray, and if assuming the description of the Scope of Claims which does not include the conveyance tray, it cannot be considered that Invention 1 falls within a range that a person ordinarily skilled in the art could solve the problems of Invention 1 that the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die requires time either by a human hand or a machine, and the workability is extremely poor (the problem in the prior art 2), and could provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively, on

the basis of the Detailed Description of the Invention.

Further, according to the statement of the Detailed Description of the Invention of the Description, the conveyance tray is made to be an essential structure so as to solve the problem in the prior art 2, so that it is understood that an alternative structure to the conveyance tray is required to solve the problem of the Invention without using a conveyance tray. However, even in the statement of the Description, although there are descriptions ([0047] and [0048]) relating to the specific structure of the conveyance tray, there is no description that specifically suggests the alternative structure to the conveyance tray, and there is no evidence sufficient to find that the alternative structure would be obvious to a person ordinarily skilled in the art. Therefore, it cannot be considered that it falls within a range that a person ordinarily skilled in the art could solve the problem relating to the processes of fixing the laminated rotor core on the lower die and removing it from the lower die, by means of referring to the common general technical knowledge upon filing the application even in the absence of the specific statements in the Detailed Description of the Invention.

In view of the above, the Invention includes the invention that is not described in the Detailed Description of the Invention of the Description, and thus does not satisfy the requirements stipulated in Article 36, paragraph (6), item (i) of the Patent Act.

(3) The JPO decision merely means that it can be recognized that a person ordinarily skilled in the art could solve the problem regarding the embodiments of the Invention described in the Detailed Description of the Invention of the Description, and it cannot be considered that the JPO decision was determined, through comparing the description in the Scope of Claims with the description in the Detailed Description of the Invention, by examining whether or not the invention described in the Scope of Claims is the invention described in the Detailed Description of the Invention, and whether or not it can be acknowledged that a person ordinarily skilled in the art could solve the problems of the invention on the basis of the description, and whether or not a person ordinarily skilled in the art could solve the problems of the invention by means of referring to the common general technical knowledge upon filing the application even in the absence of the descriptions or the suggestions.

Accordingly, it cannot be considered that the JPO decision determined that "the invention for which a patent is sought is stated in the Detailed Description of the Invention" prescribed in Article 36, paragraph (6), item (i) of the Patent Act.

Judgment Rendered on September 20, 2023

2021 (Gyo-Ke) 10152, Case of Seeking Rescission of the JPO Decision

Date of Conclusion of Oral Argument: July 20, 2023

Judgment

Plaintiff: TOYOTA BOSHOKU CORPOTATION

Defendant: Mitsui High-tec, Inc.

Main Text

1 The JPO decision on the case of Invalidation Trial No. 2020-800097 rendered by the Japan Patent Office on October 22, 2021 shall be rescinded.

2 The Defendant shall bear the court costs.

Facts and Reasons

No. 1 Claim

The same gist as the Main Text

No. 2 Background

1. Outline of Procedures and the like at the JPO

(1) The Defendant filed a divisional application (Patent Application No. 2016-40066, hereinafter, referred to as "the Application," Exhibit Ko 33) on March 2, 2016 on the invention titled "Method of resin sealing permanent magnets," from a patent application dated September 14, 2009 (Patent Application No. 2009-212139, hereinafter, referred to as "the second generation application," Exhibit Ko 40), a patent application dated October 13, 2011 (Patent Application No. 2011-226055, hereinafter, referred to as "the third generation application," Exhibit Ko 19), a patent application dated April 2, 2013 (Patent Application No. 2013-76991, hereinafter, referred to as "the fourth generation application," Exhibit Ko 41), a patent application dated February 3, 2014 (Patent Application No. 2014-18680, hereinafter, referred to as "the fifth generation application," Exhibit Ko 42), and a patent application dated January 16, 2015 (Patent Application No. 2015-6922, hereinafter referred to as "the original application," Exhibit Ko 14), which are sequentially divided from a patent application dated November 24, 2005 (Patent Application No. 2005-339116, hereinafter referred to as "the first generation application," Exhibit Ko 39), which is a

divisional application from a patent application filed on January 24, 2005 (Patent Application No. 2005-15860, hereinafter, referred to as "the first parent application," Exhibit Ko 13).

The Defendant submitted a written amendment on the Scope of Claims and the Description dated February 9, 2017 (hereinafter, referred to as "the Amendment," Exhibit Ko 9), and the establishment of patent right was registered on July 28, 2017 (Patent No. 6180569, Number of claims: 3, hereinafter, this patent is referred to as "the Patent," and the description and the drawings of the Patent after the Amendment are collectively referred to as "the Description") (Exhibit Ko 50).

(2) The Plaintiff made a request for a trial for invalidation of the Patent (Invalidation Trial No. 2020-800097) for the inventions pertaining to Claims 1 to 3 in the Patent on October 8, 2020 (Exhibit Ko 51).

The Japan Patent Office made a decision that "The request for the trial is not established." (hereinafter, referred to as "the JPO decision") on October 22, 2021, and a certified copy thereof was delivered to the Plaintiff on November 5 of the same year.

2 The description of the Scope of Claims

(1) At the time of filing of the first parent application

The Scope of Claims originally attached to the application of the first parent application is composed of Claims 1 to 6, and the description of Claim 1 is as follows. (Exhibit Ko 13).

[Claim 1]

A resin sealing device of a permanent magnet for injecting a resin member into magnet insertion holes to fix the permanent magnets inserted into a plurality of magnet insertion holes formed in a laminated rotor core in which a plurality of core pieces are laminated and which includes a shaft hole at a center, the resin sealing device comprising:

a conveyance tray on which the laminated rotor core is mounted;

a lower die on which the laminated rotor core mounted on the conveyance tray is placed, the lower die being provided with a first heating means that heats the laminated rotor core from below and moves up and down;

an upper die that is mounted on the laminated rotor core, has a second heating means for heating the laminated rotor core from above and a plurality of pots for containing a raw material of the resin member, is provided with a flow path for guiding the resin member from the pot to the magnet insertion hole in a bottom portion thereof, and moves upward in accordance with upward movement of the lower die;

a fixed frame fixedly disposed above the upper die with a gap serving as a work space between the fixed frame and the upper die at a lower limit position;

a plurality of plungers that pass through the fixed frame and press the resin member put in the pot of the raised upper die; and

a stopper that holds the upper die at an upper limit position.

(2) At the time of filing of the original application

The Scope of Claims originally attached to the application of the original application is composed of Claims 1 and 2, and the description of Claim 1 is as follows. (Exhibit Ko 14).

[Claim 1]

A method of respectively inserting permanent magnets into a plurality of magnet insertion holes of a laminated rotor core in which a plurality of core pieces are laminated, arranging the laminated rotor core between a lower die and an upper die, and resin sealing the permanent magnets in the respective magnet insertion holes, the method comprising:

disposing the laminated rotor core between the upper die and the lower die; and pressing the laminated rotor core with the lower die and the upper die to resin seal the permanent magnets in the magnet insertion holes of the laminated rotor core, wherein a shaft hole is provided at a center of the laminated rotor core and the magnet insertion holes are formed around the shaft hole.

(3) At the time of filing of the Patent (before the Amendment)

The descriptions of Claims 1 to 3 of the Scope of Claims at the time of filing of the Patent are as follows (Hereinafter, according to claim number, the invention relating to Claim 1 is referred to as "Invention 1 before the Amendment" and the like. Exhibit Ko 33).

[Claim 1]

A method of respectively inserting permanent magnets into each of a plurality of magnet insertion holes of a laminated rotor core in which a plurality of core pieces are laminated and resin sealing the permanent magnets in the respective magnet insertion holes, the method comprising:

disposing the laminated rotor core between an upper die and a lower die; pressing the laminated rotor core with the lower die and the upper die; and resin sealing the permanent magnets in the magnet insertion holes of the laminated rotor core.

[Claim 2]

The method of resin sealing permanent magnets to a laminated rotor core

according to Claim 1, wherein the laminated rotor core is pressed with the upper die and the lower die by raising the lower die.

[Claim 3]

The method of resin sealing permanent magnets in a laminated rotor core according to Claim 1 or 2, wherein the upper die is provided with a pot for pushing a resin member into the magnet insertion hole.

(4) The descriptions of claims of the Scope of Claims after the Amendment are as follows (hereinafter, the inventions relating to Claims 1 to 3 of the Scope of Claims after the Amendment are respectively referred to as "Invention 1," "Invention 2," and "Invention 3," and these are collectively referred to as "the Invention"; further, the following underlined part is the amended part of Claims of the Amendment. Exhibits Ko 9 and 50).

[Claim 1]

A method of respectively inserting permanent magnets into a plurality of magnet insertion holes of a laminated rotor core in which a plurality of core pieces are laminated and resin sealing the permanent magnets in the respective magnet insertion holes, the method comprising:

disposing the laminated rotor core between an upper die and a lower die; pressing the laminated rotor core with the lower die and the upper die without bringing the upper die and the lower die into contact with each other; and resin sealing the permanent magnets in the magnet insertion holes of the laminated rotor core.

[Claim 2]

The method of resin sealing permanent magnets to a laminated rotor core according to Claim 1, wherein the laminated rotor core is pressed with the upper die and the lower die by raising the lower die.

[Claim 3]

The method of resin sealing permanent magnets in a laminated rotor core according to Claim 1 or 2, wherein the upper die is provided with a pot for pushing a resin member into the magnet insertion hole.

3 Abstract of reasons of the JPO decision

The reason for the JPO decision is as described in the attached written trial decision (copy). In summary, (1) regarding the reasons for invalidation due to lack of novelty and inventive step on the premise of violations of requirements of division of the Application (Reasons for Invalidation 1 and 2), it can be considered that the Invention was described in the first parent application, the divisional applications

from the first generation to the fifth generation, and the description of the original application initially filed, so that the Application does not violate the requirements of division, and the application of the Patent is regarded to be filed on the filing date of the first parent application; that is, January 24, 2005, so that it cannot be considered that the invention described in Exhibit Ko 1 (Patent No. 3786946, date of issue is June 21, 2006) (hereinafter, referred to as "Exhibit Ko 1 Invention") is the invention described in the publication distributed before the application for the Patent, and it cannot be considered that it could have been easily invented by a person ordinarily skilled in the art based on the invention, (2) regarding the reasons for invalidation due to lack of inventive step (Reason for Invalidation 3), it cannot be considered that the Invention could have been easily invented by a person ordinarily skilled in the art by applying technical matters described in Exhibit Ko 2 (Unexamined Patent Application Publication No. 1993-278079) and well-known arts to the invention described in Exhibit Ko 5 (Unexamined Patent Application Publication No. 2001-157394) (hereinafter, referred to as "Exhibit Ko 5 Invention"), (3) regarding the reasons for invalidation due to violation of correction requirements (Reason for Invalidation 4), it cannot be considered that the matter "without bringing the upper die and the lower die into contact with each other" added in the Amendment is a new technical matter that is not described in the description of the original application initially filed, (4) regarding the reason for invalidation due to violation of enabling requirements (Reason for invalidation 5), the Detailed Description of the Invention in the Description discloses to the extent that a person ordinarily skilled in the art can implement the invention without requiring excessive trial and error, (5) regarding the reasons for invalidation due to violation of requirements for support (Reason for Invalidation 6), it can be recognized that the problem of the Invention, that is "the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die requires time either by a human hand or a machine, and the workability is extremely poor" can be solved by "disposing the laminated rotor core between an upper die and a lower die; pressing the laminated rotor core with the lower die and the upper die without bringing the upper die and the lower die into contact with each other; and resin sealing the permanent magnets in the magnet insertion holes of the laminated rotor core," so that the Invention is as described in the Detailed Description of the Invention, and (6) regarding the reasons for invalidation due to violation of requirements for clarity (Reason for Invalidation 7), it cannot be considered that the description of the Scope of Claims of the Patent is unclear to the

extent that the interests of a third party are unduly harmed.

(omitted)

No. 4 Judgment of this court

1 Regarding described matters of the Description

(1) The Description (Exhibit Ko 50) includes the following description (Figures cited in the following description are as attached.).

A [Detailed Description of the Invention]

[Technical field]

[0001]

The present invention relates to a method of resin sealing permanent magnets, which fixes the permanent magnets inserted in a plurality of magnet insertion holes formed in a laminated rotor core in which a plurality of core pieces are laminated, by injecting a resin member into the magnet insertion holes.

[Background of the Invention]

[0002]

Conventionally, as a method of fixing permanent magnets to a laminated core by resin sealing, for example, a method described in Patent Document 1 is known.

In the method of resin sealing permanent magnets described in Patent Document 1, a laminated core in which a plurality of core pieces are laminated by being fixed and integrated by punching and caulking or the like, a plurality of magnet insertion holes for inserting permanent magnets are formed in an outer peripheral portion, and a plurality of injection hole portions for injecting a sealing resin are formed is inserted in a bottomed hole portion of a lower die. After the permanent magnets are inserted into the magnet insertion holes, an upper die having an injection hole portion formed at a position corresponding to an injecting hole portion is placed on an upper end of the lower die so that the injection hole portion is aligned with the injecting hole portion, and while the lower die and the upper die are fixed to each other by a fastening means, the resin member is supplied at a predetermined pressure from a resin-supply hole portion communicating with the injection hole portion of the upper die to fill the magnet insertion hole with the resin member, and then the laminated core is heated by a heating means to cure the resin member, thereby fixing the permanent magnets to the laminated core.

[Prior art reference]

[Patent document]

[0003]

[Patent Document 1] Unexamined Patent Application Publication No. 2002-34187 (Fig. 1 to Fig. 6)

[Summary of the invention]

B [Problem to be solved by the invention]

[0004]

However, the conventional method of resin sealing permanent magnets has the following problems to be solved.

In addition, when the magnet insertion holes are filled with the resin member, the resin member is injected into the magnet insertion holes through the resin-supply hole portion formed in the upper die, the plurality of injection hole portions branched from the resin-supply hole portion, and the injecting hole portion of the laminated core. Therefore, it is difficult to uniformly fill each magnet insertion hole with the resin member, and reliability is deteriorated. In addition, a pump for supplying the resin member requires a large supply pressure, which makes the apparatus expensive.

Further, the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die is time-consuming either by a human hand or a machine, and the workability is extremely poor.

[0005]

The present invention has been made in view of the above circumstances, and an object of the present invention is to provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively.

[Means for solving the problem]

[0009]

The method of resin sealing of permanent magnets according to the present invention in accordance with the aforementioned object, which is a method of respectively inserting permanent magnets in a plurality of magnet insertion holes of a laminated rotor in which a plurality of core pieces are laminated, and resin sealing the permanent magnets in the magnet insertion holes, respectively, the method comprising:

disposing the laminated rotor core between an upper die and a lower die; pressing the laminated rotor core with the lower die and the upper die without bringing the upper die and the lower die into contact with each other; and resin sealing the permanent magnets in the magnet insertion holes of the laminated rotor

core.

[0010]

In the method of resin sealing permanent magnets according to the present invention, the laminated rotor core may have a shaft hole at a center thereof, and the laminated rotor core may be placed on a conveyance tray including a guide member to make the laminated rotor core fit into the shaft hole and may be disposed between the upper die and the lower die.

[Effect of the invention]

[0011]

In the method of resin sealing permanent magnets according to Claims 1 to 3, when the permanent magnets inserted into the plurality of magnet insertion holes formed in the laminated rotor core in which the plurality of core pieces are laminated are fixed by injecting a resin member into the magnet insertion holes, the laminated rotor core is pressed by the upper die and the lower die, and the magnet insertion hole is filled with the resin member, so that the resin sealing is surely performed, resin sealing can be performed in a short time by a simple process, productivity and workability are excellent, and work can be performed inexpensively.

C [Mode for carrying out the invention]

[0015]

Subsequently, an embodiment of the present invention will be described with reference to the accompanying drawings for understanding of the present invention.

As schematically shown in FIGS. 1 and 2, a resin sealing device 10 for permanent magnets according to an embodiment of the present invention is a device which fixes permanent magnets 14 inserted into a plurality of (eight in this embodiment) magnet insertion holes 13 formed in a laminated rotor core 12 in which a plurality of core pieces are laminated and which is provided with a shaft hole 11 at the center, by injecting a thermosetting resin 15 as an example of a resin member into the magnet insertion holes 13.

[0016]

The resin sealing device 10 for permanent magnets includes a conveyance tray 16 on which a laminated rotor core 12 is mounted, a lower die 17 on which the laminated rotor core 12 mounted on the conveyance tray 16 is placed and which is provided with a first heating means (not shown) that heats the laminated rotor core 12 from below and moves up and down, and an upper die 21 which has a second heating means (not shown) that is mounted on the laminated rotor core 12 and heats the laminated rotor core 12 from above and a plurality of (eight in the present

embodiment) pots 19 in which a raw material (referred to as a tablet) 18 of the thermosetting resin 15 is put, is further provided with a flow path 20 for guiding the thermosetting resin 15 from the pots 19 to the magnet insertion holes 13 in the bottom part, and is raised with the rise of the lower die 17.

[0017]

The resin sealing device 10 for permanent magnets further includes a fixed frame 22 that is disposed above the upper die 21 and is fixed to the upper die 21 at the lower limit position with a gap G (see FIG. 5) serving as a work space S for inserting the raw material 18, a plurality of (eight in the present embodiment) plungers 23 which pass through the fixed frame 22 and press the thermosetting resin 15 input into the pots 19 of the upper die 21 which has been raised, and a stopper 24 which holds the upper die 21 at the upper limit position when the upper die 21 is raised. The conveyance tray 16 includes a rectangular plate-shaped tray portion 26 with which a lower surface 25 of the laminated rotor core 12 comes into contact, and a diameter-fixed type rod-shaped guide member 27 provided to stand at the central portion of the tray portion 26 and fitted into the shaft hole 11 of the laminated rotor core 12. These will be described in detail below. The components are basically fastened by screws in consideration of assembly and replacement.

[0018]

As shown in FIGS. 1, 3, and 4, the rectangular plate-shaped fixed frame 22 is attached to an upper fixed plate 29 provided on an upper portion of a mounting frame 28. The lower die 17 is placed on an elevating plate 32 which moves up and down along four guide posts 31 connecting a lower fixed plate 30 provided at a lower portion of the mounting frame 28 and the upper fixed plate 29. The heating means is provided inside the fixed frame 22, so that the plunger 23 is heated in advance to facilitate the extrusion of the thermosetting resin 15, and a difference in thermal expansion between the fixed frame 22 and the lower die 17 is eliminated to eliminate a gap between the plungers 23 and the pots 19.

[0019]

The elevating plate 32 is moved up and down by a lower-die elevating means 33 provided on the lower fixed plate 30. The plurality of plungers 23 are simultaneously moved up and down by a plunger driving means 34 provided on the upper fixed plate 29.

[0020]

With reference to FIGS. 3 and 4, the resin sealing device 10 for permanent magnets will be described in further detail.

The rectangular upper fixed plate 29 and the rectangular lower fixed plate 30 are horizontally disposed at a vertical interval on an upper portion and a lower portion, respectively, of a mounting frame 28 made of shape steel or the like. Four corners of each of the upper fixed plate 29 and the lower fixed plate 30 are connected by four guide posts 31.

[0021]

A rectangular elevating plate 32 which vertically slides up and down along the guide posts 31 and on which the lower die 17 is mounted is horizontally disposed at an intermediate position in the vertical direction of the four guide posts 31. A lower-die elevating means 33 for driving the elevating plate 32 includes a servo motor 34a mounted on the lower fixed plate 30 and a worm jack 35 with a reduction gear which is driven by the servo motor 34a and mounted on the lower fixed plate 30, a disc spring 35b provided through a joint on an output shaft 35a projecting out to an upper side of the worm jack 35 with a reduction gear, and a load cell 36 provided at an upper end of the disc spring 35b and disposed in contact with a lower surface of the elevating plate 32. The pressing force of the lower die 17 against the upper die 21 can be measured by the load cell 36.

[0022]

The plunger driving means 34 for driving the plurality of plungers 23 includes a servo motor 38 provided on a mounting bracket 37 fixed on the upper fixed plate 29, a worm jack 39 with a reduction gear driven by the servo motor 38, a load cell 39a provided through a joint on the output shaft projecting out to the lower side of the worm jack 39 with a reduction gear, and a push rod 40 moving up and down in contact with the lower surface of the load cell 39a through a disc spring 39b. The pushing pressure of the plungers 23 is measured by the load cell 39a.

[0023]

As shown in FIGS. 5 to 7, the push rod 40 of the worm jack 39 is provided so as to penetrate the central portion of the upper fixed plate 29, and sliding metals 41 and 41a are attached to the penetrating portion. The push rod 40 at the upper limit position is disposed so as to penetrate a rectangular heat insulating plate 42 screwed to the lower surface of the upper fixed plate 29 and also penetrate a rectangular mounting plate 43 screwed to the lower surface of the heat insulating plate 42.

[0024]

On the lower surface of the upper fixed plate 29, on both sides in the left-and-right direction of the heat insulating plate 42, suspension metal fittings 46 and 47 are suspended by screw fastening via heat insulating plates 44 and 45 having an elongated

rectangular shape. Concave hooking grooves 48 and 49 facing each other are horizontally formed inside the suspension metal fittings 46 and 47 arranged facing each other, and both end portions of the fixed frame 22 are fitted into the hooking grooves 48 and 49, respectively. Heat insulating boards 46a, 47a are attached to the outside of the suspension metal fittings 46, 47.

[0025]

On the lower surface of the mounting plate 43, there are provided a pair of shutter plates 50 and 51 which are slidable in the left-and-right direction and used at the time of setup of the die. A shank-backing plate 53 is attached to a hooking portion 40a at the distal end of the push rod 40 via a horseshoe-shaped (U-shaped) shank-holder 52 that can be hooked by the hooking portion 40a. Further, a plunger holder 54 is provided on the lower surface of the shank-backing plate 53.

[0026]

Between the lower surfaces of the shutter plates 50 and 51 and the upper surface of the fixed frame 22, a plunger guide 55 for guiding the upward and downward movement of the plunger holder 54 is fixed to the fixed frame 22. Each of the shank-backing plate 53 and the plunger holder 54 is provided with a spring 54b for urging the eight plungers 23 downward through a connection fitting 54a.

[0027]

As shown in FIG. 8 (A), the plunger guide 55 having a substantially square outer cross section has a substantially circular inner shape, and projections 58 each having a U-shaped cross section and arranged radially are formed at equal pitches on the inner periphery of the plunger guide 55 at equal pitches in the circumferential direction. On the other hand, as shown in FIG. 8 (B), on the outer periphery of the plunger holder 54 having a substantially circular outer cross section, eight notches 57 each having a U-shaped cross section and radially arranged, through which the projections 58 are vertically inserted, are formed at equal pitches in the circumferential direction, and eight circular holes 56 in which the plungers 23 slide are formed at equal pitches in the circumferential direction between the adjacent notches 57. With such a configuration, thermal expansion of the plunger holder 54 and the plunger guide 55 is absorbed, and defects in the quality of the product and the movement of the dies (the upper die 21 and the lower die 17) are prevented from occurring. Further, since the projections 58 of the plunger guide 55 and the notches 57 of the plunger holder 54 are radially formed, it is possible to suppress the deflection of the plunger guide 55 at the time of die clamping.

[0028]

As shown in FIGS. 5 and 6, four sets of the fixed frame 22 and the upper die 21 are provided, and are connected by a pipe-shaped spacer 60 provided with a ring-shaped hooking portion 59 at an upper end portion and a bolt 62 which is disposed in the spacer 60 and formed with a male screw portion 61 at a lower end portion.

Spring receiving blocks 63 are screwed to both sides in the left-and-right direction of the plunger guide 55 on the upper surface of the fixed frame 22, and coil springs 65 are disposed between two receiving seats 64 formed inside each spring receiving block 63 and the upper surface of the upper die 21.

[0029]

As shown in FIG. 8 (C), eight circular holes 67 in which the eight plungers 23 slide are formed at equal pitches in the circumferential direction in the central portion of the fixed frame 22 having a substantially square outer cross section. Four circular through-holes 68 through which the spacer 60 passes are formed near four corners, and two circular insertion holes 69 through which the coil spring 65 passes are formed at an interval between the two through-holes 68 arranged in the fore-and-aft direction. Guide portions 71, each of which is an example of a sliding guide member and in which a concave notch 70 is formed, are provided at the four corners of the fixed frame 22.

[0030]

As shown in FIG. 9 (A), at four corners of the upper surface of the upper die 21, guide posts 72 each having a substantially rectangular outer cross section and inserted into the notches 70 of the guide portions 71 of the fixed frame 22 are provided to stand by screw fastening. In the central portion of the upper die 21, the eight pots 19 into which the eight plungers 23 are fitted are provided at equal pitches in the circumferential direction. The pot 19 is formed in a pipe shape having a ring-shaped hooking portion 73 at a lower end portion thereof, and is detachably attached to the upper die 21 from below.

[0031]

As shown in FIGS. 5 to 7 and FIG. 9 (B), a rectangular plate-shaped cavity block 74 is screwed to the lower surface of the upper die 21, and circular holes 75 in which eight lower pots 19a (see FIGS. 5 and 6) on which the eight plungers 23 slide can be mounted are formed at the center of the cavity block 74 at equal pitches in the circumferential direction. A shallow circular groove 76 is formed on the lower surface of the cavity block 74 and on the radially inner side of the circular hole 75, thereby forming a space into which the distal end portion of the guide member 27 of the conveyance tray 16 is inserted.

[0032]

A vent groove (not shown) for releasing air from the magnet insertion holes 13 to the outside is provided on a pressing surface 12a of the laminated rotor core 12 of the cavity block 74. On the other hand, a vent groove (not shown) for releasing air from the magnet insertion holes 13 to the outside is provided on a mounting surface 12b of the laminated rotor core 12 of the tray portion 26 of the conveyance tray 16. The depth of the vent groove is, for example, 30 to 50 μm . The pots 19 are provided at positions different from the positions corresponding to the magnet insertion holes 13, and the flow paths 20 communicating with the magnet insertion holes 13 are provided in the bottom portions of the pots 19 (see FIG. 2).

[0033]

As shown in FIG. 7, between the mounting plate 43 and the fixed frame 22, heat insulating plates 77 and 78 are removably provided on both sides in the fore-and-aft direction with the plunger guide 55 between them so as to face each other via brackets which are not shown.

[0034]

As shown in FIGS. 5 and 6, on the outer side in the left-and-right direction of the heat insulating board 46a and the suspension metal fitting 46 and the heat insulating board 47a and the suspension metal fitting 47, air cylinders 79 and 80 for mounting the stopper 24 are provided via a bracket 81, and the stopper 24 is horizontally advanced and retracted in the left-and-right direction by the air cylinders 79 and 80. Therefore, as can be seen from a comparison between FIGS. 5 and 6, the four stoppers 24 abut on the lower surfaces of both end portions in the left-and-right direction of the upper die 21 at the upper limit position, and the downward movement of the upper die 21 is restricted.

[0035]

As shown in FIGS. 5 and 6, a pair of rectangular guide blocks 82 and 83 are screwed to a lower central portion of the fixed frame 22 and an upper central portion of the upper die 21, respectively, so that the lower surface of the fixed frame 22 and the upper surface of the upper die 21 are in contact with each other, and the plunger 23 and the pot 19 are aligned with each other. A truncated conical groove portion 84 which is reduced in diameter along the upper side is formed in the central portion of the lower surface of the guide block 82, while a projection portion 85, which is reduced in diameter along the upper side and is fitted into the groove portion 84, is formed in the central portion of the upper surface of the guide block 83. The positioning is performed by corresponding tapered surfaces.

[0036]

As shown in FIGS. 5 and 6, the upper portion is held by the lower surface of the shank-backing plate 53 and the plunger holder 54, and a total of 16 ejector pins 86 capable of penetrating the fixed frame 22 and the upper die 21 are provided outside the plunger 23.

[0037]

As shown in FIG. 7, the lower die 17 is placed on the elevating plate 32 via a rectangular heat insulating plate 87, and three rollers 88, which are in contact with the lower surface of the tray portion 26 of the conveyance tray 16, are disposed in the lower die 17 at intervals in the fore-and-aft direction, and moreover, two pairs of rollers 88 are disposed in the left-and-right direction. Each roller 88 is urged upward via a spring 89 disposed immediately below the roller 88. The lower die 17 can be aligned with the upper die 21 by L-shaped clamping members 90 provided at the front and rear, and is fixed to the elevating plate 32 by a fastening bolt (not shown).

[0038]

As shown in FIGS. 3, 5, and 6, four reciprocating rods 91 that move up and down are disposed through the elevating plate 32, the heat insulating plate 87, and the lower die 17, and each reciprocating rod 91 is provided with an air cylinder 92 for driving via a guide mechanism. Four corners of the elevating plate 32 are slidably attached to the guide post 31 by a bearing portion 95 including bearing metals 93 and 94. Reference numerals 99 and 100 in FIG. 3 denote area sensors, reference numeral 101 in FIG. 4 denotes an area sensor, reference numeral 102 denotes an operation box, and reference numeral 103 denotes a control panel.

[0039]

Subsequently, a method of resin sealing permanent magnets according to an embodiment of the present invention using the permanent magnet resin sealing device 10 will be described mainly with reference to FIG. 10.

(a) The permanent magnet 14 sent from the previous process is inserted into the magnet insertion hole 13, and the laminated rotor core 12 set in the conveyance tray 16 is conveyed onto the lower die 17 by using a separate conveying means or the like, and is positioned and fixed with respect to the upper die 21 (hereinafter, also including the cavity block 74) (laminated rotor core supply work).

[0040]

(b) The lower die 17 is slightly raised by the lower-die elevating means 33 via the elevating plate 32, and the laminated rotor core 12 and the cavity block 74 are brought into close contact with each other. Then, the material 18 of the

thermosetting resin 15 is supplied to the pot 19 of the upper die 21 through the gap G (80 mm in the embodiment) between the fixed frame 22 and the upper die 21, and the material 18 is heated to about 170°C by the second heating means (tablet supply work).

[0041]

(c) When the viscosity of the raw material 18 is decreased by heating, the lower die 17 is further raised by the lower-die elevating means 33 via the elevating plate 32, and the laminated rotor core 12 set on the conveyance tray 16 is pressed against the upper die 21 (at this time, centering is performed by the pair of guide blocks 82 and 83, and the gap G becomes 0). By lowering the eight plungers 23 through the plunger holder 54 by the plunger driving means 34, the fluidized raw material 18; that is, the thermosetting resin 15, is pushed out from the pot 19, and the thermosetting resin 15 is filled in the magnet insertion hole 13 through the flow path 20 connecting the pot 19 and the magnet insertion hole 13.

[0042]

The second heating means of the upper die 21 and the first heating means of the lower die 17 keep heating the thermosetting resin 15 at about 170°C for about three minutes, so that the thermosetting resin 15 can be cured and the permanent magnet 14 can be fixed to the magnet insertion hole 13. At this time, since the permanent magnets 14 are stacked with the reference of the lower surface, a slight step is formed between the upper end surface of the laminated rotor core 12 and the upper end surface of the permanent magnet 14. Further, air in the magnet insertion hole 13 can be released to the outside through the vent grooves formed on the pressing surface 12a of the cavity block 74 and the mounting surface 12b of the tray portion 26 of the conveyance tray 16. (Mold clamping and resin injection work)

[0043]

In this way, since the raw material 18 of the thermosetting resin 15 is heated (at about 170°C), melted, and filled into the magnet insertion hole 13 from the upper surface of the laminated rotor core 12, the thermosetting resin 15 easily enters the magnet insertion hole 13.

[0044]

(d) As shown in FIG. 6, the four stoppers 24 are protruded, and the stoppers 24 are brought into contact with the lower surfaces of both end portions in the left-and-right direction of the upper die 21 at the upper limit position, thereby restraining the downward movement of the upper die 21. Then, the ejector pin 86 is lowered by a slight stroke (about 5 mm) by the plunger driving means 34 via the plunger holder 54,

and the lower die 17 is lowered by the lower-die elevating means 33 via the elevating plate 32 (die opening work). Thereafter, the conveyance tray 16 is removed from the lower die 17 together with the laminated rotor core 12, the laminated rotor core 12 is removed from the conveyance tray 16, and the conveyance tray 16 is sent to a subsequent process by the separate carrying means.

[0045]

(e) The plunger 23 and the pot 19 are cleaned by a cleaner 96 (plunger cleaning work).

(f) The lower die 17 is raised by the lower-die elevating means 33 via the elevating plate 32, and the air cylinder 92 is driven to raise the reciprocating rods 91, so that the upper die 21 is supported by the upper ends of the reciprocating rods 91 (upper die opening preparation work).

[0046]

(g) After the four stoppers 24 are retracted, the lower die 17 is lowered by the lower-die elevating means 33 via the elevating plate 32, the upper die 21 is lowered to the original position, and the lower die 17 is further lowered (upper die opening work).

(h) The four reciprocating rods 91 are retracted, and the insertion portion of the raw material 18 in the gap G between the fixed frame 22 and the upper die 21 is cleaned by a cleaner 97 (tablet inputting portion cleaning work).

(i) The upper die 21 and the lower die 17 are cleaned by a cleaner 98 (die cleaning work).

[0047]

The present invention is not limited to the above-described embodiments, and modifications may be made without departing from the scope of the present invention. For example, a case where the method of resin sealing permanent magnets according to the present invention is configured by combining some or all of the above-described embodiments and modifications is also included in the scope of the present invention.

Although the cavity block 74 is detachably provided on the lower surface of the upper die 21, the present invention is not limited to this, and the upper die and the cavity block may be integrally formed if necessary.

The conveyance tray 16 is provided with the diameter-fixed type guide member 27 to be fitted into the shaft hole 11 of the laminated rotor core 12, but the present invention is not limited to this, and a diameter expandable/contractible-type guide member whose diameter can be expanded/contracted according to the size of shaft holes of various laminated rotor cores may also be used if necessary.

[0048]

Although the vent grooves are formed in the mounting surface 12b of the tray portion 26 of the conveyance tray 16 and the pressing surface 12a of the cavity block 74, the present invention is not limited thereto, and the vent grooves may be omitted if necessary.

The sliding guide member of the upper die 21 is provided around the fixed frame 22, and the plunger holder 54 is configured to be guided by the plunger guide 55. However, the present invention is not limited thereto, and the plunger holder 54 may be guided by another method if necessary.

Although the spring 54b is provided at the upper end of each of the plungers 23, the present invention is not limited thereto, and the spring may be omitted if necessary.

The thermosetting resin 15 is used as the resin member, but the resin member is not limited thereto, and for example, when a heat generation temperature of a motor product is low, a thermoplastic resin may be used.

Although the flow path 20 for guiding the thermosetting resin 15 from the pot 19 to the magnet insertion hole 13 is provided in the bottom portion of the upper die 21, the present invention is not limited to this, and the pot may be provided at a position corresponding to the magnet insertion hole if necessary. In this case, a flow path for guiding the thermosetting resin 15 to the magnet insertion hole 13 is not required, and the amount of the thermosetting resin 15 used can be reduced.

(2) According to the described matters of the aforementioned (1), it can be recognized that the Detailed Description of the Invention of the Description discloses the following.

The Invention relates to a method of resin sealing permanent magnets, which fixes the permanent magnets inserted in a plurality of magnet insertion holes formed in a laminated rotor core in which a plurality of core pieces are laminated, by injecting a resin member into the magnet insertion holes ([0001]), and conventionally as a method of fixing permanent magnets to a laminated core by resin sealing, a method described in the following is known. In the method, a laminated core in which a plurality of core pieces are laminated by being fixed and integrated by punching and caulking or the like, a plurality of magnet insertion holes for inserting permanent magnets are formed in an outer peripheral portion, and a plurality of injection hole portions for injecting a sealing resin are formed is inserted in a bottomed hole portion of a lower die. After the permanent magnets are inserted into the magnet insertion holes, an upper die having an injection hole portion formed at a position corresponding to an injecting hole portion is placed on an upper end of the

lower die so that the injection hole portion is aligned with the injecting hole portion, and while the lower die and the upper die are fixed to each other by a fastening means, the resin member is supplied at a predetermined pressure from a resin-supply hole portion communicating with the injection hole portion of the upper die to fill the magnet insertion hole with the resin member, and then the laminated core is heated by a heating means to cure the resin member, thereby fixing the permanent magnets to the laminated core ([0002]). However, the method has the following two problems. One problem is that when the magnet insertion holes are filled with the resin member, the resin member is injected into the magnet insertion holes through the resin-supply hole portion formed in the upper die, the plurality of injection hole portions branched from the resin-supply hole portion, and the injecting hole portion of the laminated core, and therefore, it is difficult to uniformly fill each magnet insertion hole with the resin member, and reliability is deteriorated, and in addition, a pump for supplying the resin member requires a large supply pressure, which makes the device expensive (hereinafter, referred to as "the problem in the prior art 1"). The other is that the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die requires time either by a human hand or a machine, and the workability is extremely poor (hereinafter, referred to as "the problem in the prior art 2") ([0004] and [0005]). The object of the Invention is acknowledged to provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively.

2 Regarding Reason for Rescission 6 (Determination error on requirements for support)

In consideration of the case, Reason for Invalidation 6 (Determination error of requirements for support) will be determined first.

(1) It should be determined whether or not the invention for which a patent is sought is stated in the Detailed Description of the Invention by comparing the description of the Scope of Claims and the description of the Detailed Description of the Invention, and examining whether or not the invention described in the Scope of Claims is the invention described in the Detailed Description of the Invention and a person ordinarily skilled in the art could solve the problems of the invention on the basis of the invention described in the Detailed Description of the Invention or suggestion thereof, and whether or not a person ordinarily skilled in the art could solve the problems of the invention in light of the common general technical knowledge at the time of filing of the application even in the absence of the

descriptions or the suggestions.

(2) Regarding the Scope of Claims of the Invention

A The Scope of Claims of Invention 1 is as described in 2 (4) of No. 2 above, and usually, "between" means "a part sandwiched between two objects. A space/part sandwiched between articles" (KOJIEN, 6th edition), and "die" means "something that becomes the basis for creating a shape. Molds, paper patterns, etc." (KOJIEN, 6th edition), so that the matters specifying the invention that "disposing the laminated rotor core between an upper die and a lower die; pressing the laminated rotor core with the lower die and the upper die without bringing the upper die and the lower die into contact with each other," of Invention 1 is acknowledged to specify the layout of the laminated rotor core with reference to the upper die and the lower die when pressing the laminated rotor core by "disposing between an upper die and a lower die," and is acknowledged to specify a positional relationship or a state of the upper die and the lower die when pressing the laminated rotor core by "without bringing the upper die and the lower die into contact with each other". On the other hand, the Scope of Claims of Invention 1 does not specify the shape and structure of the upper die and the lower die, and the layout, state, or the like of the laminated rotor core in a case other than "pressing the laminated rotor core with the lower die and the upper die," and, for example, does not have the conveyance tray on which the laminated rotor core placed on the lower die as a structure, so that it is recognized that the Scope of Claims of Invention 1 includes not only the invention including the conveyance tray on which the laminated rotor core of Invention 1 is mounted, but also the invention that does not include the conveyance tray.

B In addition, although the matter specifying the invention that "the laminated rotor core is pressed with the upper die and the lower die by raising the lower die" of Invention 2 is added, it is acknowledged to specify the movement of the lower die when pressing the laminated rotor core, and it is recognized that other structures of the Scope of Claims of Inventions 2 are as described in the aforementioned A.

C Further, the matter specifying the invention that "the upper die is provided with a pot for pushing a resin member into the magnet insertion hole" of Invention 3 is acknowledged to specify the structure relating to resin sealing about the upper die, and it is recognized that other structures of the Scope of Claims of Inventions 3 are as described in the aforementioned A.

(3) Regarding the problem to be solved by the invention described in the Detailed Description of the Invention and means for solving the problem

A As described in 1(2) above, on the premise that there are the problems in the

prior art 1 and 2, the problem to be solved by the Invention (the problem of the Invention) is recognized to "provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively".

B Here, the "productivity" means "a degree that labor and other production factors input into a production process contribute to productivity output" (KOJIEN, 6th edition), and it can be understood that "enables work to be performed inexpensively" indicates a degree of compensation for work. As the causes of compensation for this work, various factors can be thought from items such as "an expensive pump" in the problem in the prior art 1 and "a machine" in the problem in the prior art 2 to "a human hand" in the problem in the prior art 2, so that it is also understood that the problem of the Invention is to solve the problem of the Invention not only by solving both of the problems in the prior art 1 and 2, but also by solving either one of the problem in the prior art 1 or 2, so that it can be understood that it is also enough to solve either one of the problem in the prior art 1 or 2 for solving the problem of the Invention.

Accordingly, it can be recognized that the JPO decision made determination on requirements for support on the basis of the matter that the problem of the Invention is to solve the problem in the prior art 2, so that it cannot be considered that there is an error in the recognition of the problem of this point.

Therefore, the allegation of the Plaintiff relating to the problem of the Invention against that (the allegation of an error that the JPO decision does not recognize the point that "it is difficult to uniformly fill each magnet insertion hole with the resin member, and reliability is deteriorated" as the problem) and the allegation of violation of requirements for support based on this point cannot be accepted.

C Subsequently, according to 1 above, in the Detailed Description of the Invention of the Description, regarding processes of fixing the laminated rotor core on the lower die and removing it from the lower die again in the method of resin sealing permanent magnets according to the Invention, it is described that "(a) The permanent magnet 14 sent from the previous process is inserted into the magnet insertion hole 13, and the laminated rotor core 12 set in the conveyance tray 16 is conveyed onto the lower die 17 by using a separate conveying means or the like, and is positioned and fixed with respect to the upper die 21 (hereinafter, also including the cavity block 74) (supply work of a laminated rotor core)" ([0039], hereinafter, referred to as "the process (a)") and that "... Thereafter, the conveyance tray 16 is removed from the

lower die 17 together with the laminated rotor core 12, the laminated rotor core 12 is removed from the conveyance tray 16, and the conveyance tray 16 is sent to a subsequent process by the separate conveying means" ([0044], hereinafter, referred to as "the process (d)"), and regarding the conveyance tray that is essential in the processes (a) and (d), it is described that "the conveyance tray 16 includes a rectangular plate-shaped tray portion 26 with which a lower surface 25 of the laminated rotor core 12 comes into contact, and a diameter-fixed type rod-shaped guide member 27 provided to stand at the central portion of the tray portion 26 and fitted into the shaft hole 11 of the laminated rotor core 12" ([0017]).

According to the descriptions above, regarding the process of fixing the laminated rotor core on the lower die or the process of removing it from the lower die, it is recognized that the invention described in the Detailed Description of the Invention of the Description is to "convey the laminated rotor core 12 set in the conveyance tray 16 including a rectangular plate-shaped tray portion 26 with which a lower surface 25 of the laminated rotor core 12 comes into contact, and a diameter-fixed type rod-shaped guide member 27 provided to stand at the central portion of the tray portion 26 and fitted into the shaft hole 11 of the laminated rotor core 12 onto the lower die 17," and is to "remove the conveyance tray 16 from the lower die 17 together with the laminated rotor core 12, the laminated rotor core 12 is removed from the conveyance tray 16".

(4) Examination on requirements for support regarding the Invention

A As mans for solving the problem in the prior art 2, Invention 1, as described in 2 (2) A above, is acknowledged to specify the layout of the laminated rotor core with reference to the upper die and the lower die when pressing the laminated rotor core, and to specify a positional relationship or a state of the upper die and the lower die, whereas the invention described in the Detailed Description of the Invention of the Description, as described in 2 (3) C above, is to "convey the laminated rotor core 12 set in the conveyance tray 16 including a rectangular plate-shaped tray portion 26 with which a lower surface 25 of the laminated rotor core 12 comes into contact, and a diameter-fixed type rod-shaped guide member 27 provided to stand at the central portion of the tray portion 26 and fitted into the shaft hole 11 of the laminated rotor core 12 onto the lower die 17," and is to "remove the conveyance tray 16 from the lower die 17 together with the laminated rotor core 12, the laminated rotor core 12 is removed from the conveyance tray 16," so that, according to the Detailed Description of the Invention of the Description, it is understood that the conveyance tray is an essential configuration. Then, Invention 1 includes not only the invention including

the conveyance tray on which the laminated rotor core is mounted, but also the invention that does not include the conveyance tray, and if assuming the description of the Scope of Claims which does not include the conveyance tray, it cannot be considered that Invention 1 falls within a range that a person ordinarily skilled in the art could solve the problems of Invention 1 that the work of inserting the laminated core into the bottomed hole portion of the lower die, heating the laminated core, and then taking out the laminated core from the bottomed hole portion of the lower die requires time either by a human hand or a machine, and the workability is extremely poor (the problem in the prior art 2), and could provide a method of resin sealing permanent magnets, which is excellent in productivity and workability and enables work to be performed inexpensively, on the basis of the Detailed Description of the Invention. Then, in this respect, Invention 2 and Invention 3 include the invention that does not include the conveyance tray, so that the same applies to them.

B Further, in Paragraph [0010], it is described that "in the method of resin sealing permanent magnets according to the present invention, the laminated rotor core may have a shaft hole at a center thereof, and the laminated rotor core may be placed on a conveyance tray including a guide member to make the laminated rotor core fit into the shaft hole and may be disposed between the upper die and the lower die," so that there is the statement of the Detailed Description of the Invention based on the assumption that the conveyance tray is not an essential structure. However, as described in 2 (4) A above, according to the statement of the Detailed Description of the Invention of the Description, the conveyance tray is made to be an essential structure so as to solve the problem in the prior art 2, so that it is understood that an alternative structure to the conveyance tray is required. However, even in the statement of the Description, although there are descriptions ([0047] and [0048]) relating to the specific structure of the conveyance tray, there is no description that specifically suggests the alternative structure to the conveyance tray, and there is no evidence sufficient to find that the alternative structure would be obvious to a person ordinarily skilled in the art. Therefore, it cannot be considered that it falls within a range that a person ordinarily skilled in the art could solve the problem relating to the processes of fixing the laminated rotor core on the lower die and removing it from the lower die, in light of the common general technical knowledge at the time of filing of the application even in the absence of the specific statements in the Detailed Description of the Invention. In this respect, Invention 2 and Invention 3 are also the same.

C In view of the above, the Invention includes the invention that is not

described in the Detailed Description of the Invention of the Description, and thus does not satisfy with the requirements stipulated in Article 36, paragraph (6), item (i) of the Patent Act.

D In this respect, in the JPO decision, it is determined that the Invention is as described in the Detailed Description of the Invention of the Description, since it can be recognized that the problems of the Invention could be solved by "disposing the laminated rotor core between an upper die and a lower die; pressing the laminated rotor core with the lower die and the upper die without bringing the upper die and the lower die into contact with each other; and resin sealing the permanent magnets ...". Also, the Defendant alleges that there is no error in the recognition of the JPO decision that determines the Invention satisfies the requirements for support even if it is not provided with the conveyance tray.

However, for a premise for the above determination, in the Description, it can be considered that "as the embodiments of the invention solving such problems, it is described that '(a) The permanent magnet 14 sent from the previous process is inserted into the magnet insertion hole 13, and the laminated rotor core 12 set in the conveyance tray 16 is conveyed onto the lower die 17 by using a separate conveying means or the like, and is positioned and fixed with respect to the upper die 21 (hereinafter, also including the cavity block 74)' ([0039]), '(b) The lower die 17 is slightly raised by the lower-die elevating means 33 via the elevating plate 32, and the laminated rotor core 12 and the cavity block 74 are brought into close contact with each other...' ([0040]), '(c) When the viscosity of the raw material 18 is decreased by heating, the lower die 17 is further raised by the lower-die elevating means 33 via the elevating plate 32, and the laminated rotor core 12 set on the conveyance tray 16 is pressed against the upper die 21' ([0041]), the permanent magnets are fixed to the magnet insertion holes by the thermosetting resin, and then 'the lower die 17 is lowered by the lower-die elevating means 33 via the elevating plate 32' ([0044]), and 'Thereafter, the conveyance tray 16 is removed from the lower die 17 together with the laminated rotor core 12, the laminated rotor core 12 is removed from the conveyance tray 16, and the conveyance tray 16 is sent to a subsequent process by the separate conveying means' ([0044]). Therefore, there is described the invention providing the effect that 'when the permanent magnets inserted into the plurality of magnet insertion holes formed in the laminated rotor core in which the plurality of core pieces are laminated are fixed by injecting a resin member into the magnet insertion holes, the laminated rotor core is pressed by the upper die and the lower die, and the magnet insertion hole is filled with the resin member, so that ... can be

performed in a short time by a simple process, productivity and workability are excellent, and work can be performed inexpensively' ([0011])," so that it is recognized that the JPO decision determines that the embodiments of the Invention composed of the above-mentioned processes described in the Detailed Description of the Invention of the Description could solve the problems.

Therefore, the JPO decision merely means that it can be recognized that a person ordinarily skilled in the art could solve the problem regarding the embodiments of the Invention described in the Detailed Description of the Invention of the Description, and it cannot be considered that the JPO decision determined, through comparing the description in the Scope of Claims with the description in the Detailed Description of the Invention, by examining whether or not the invention described in the Scope of Claims is the invention described in the Detailed Description of the Invention, and whether or not it can be acknowledged that a person ordinarily skilled in the art could solve the problems of the invention on the basis of the description, and whether or not a person ordinarily skilled in the art could solve the problems of the invention in light of the common general technical knowledge at the time of filing of the application even in the absence of the descriptions or the suggestions.

Accordingly, it cannot be considered that the JPO decision determined that "the invention for which a patent is sought is stated in the Detailed Description of the Invention" prescribed in Article 36, paragraph (6), item (i) of the Patent Act.

(5) Summary

Therefore, none of the Invention complies with requirements for support, so that the determination of the JPO decision that the Invention complies with requirements for support is erroneous.

3 Conclusion

As described above, there are grounds for Reason for Invalidation 6 alleged by the Plaintiff, and the JPO decision should be rescinded without even determining the other reasons for rescission, and thus the Court rules as in the main text.

Intellectual Property High Court, First Division

Presiding Judge:	HONDA Tomonari
Judge:	TOYAMA Atsushi
Judge:	AMANO Kenji

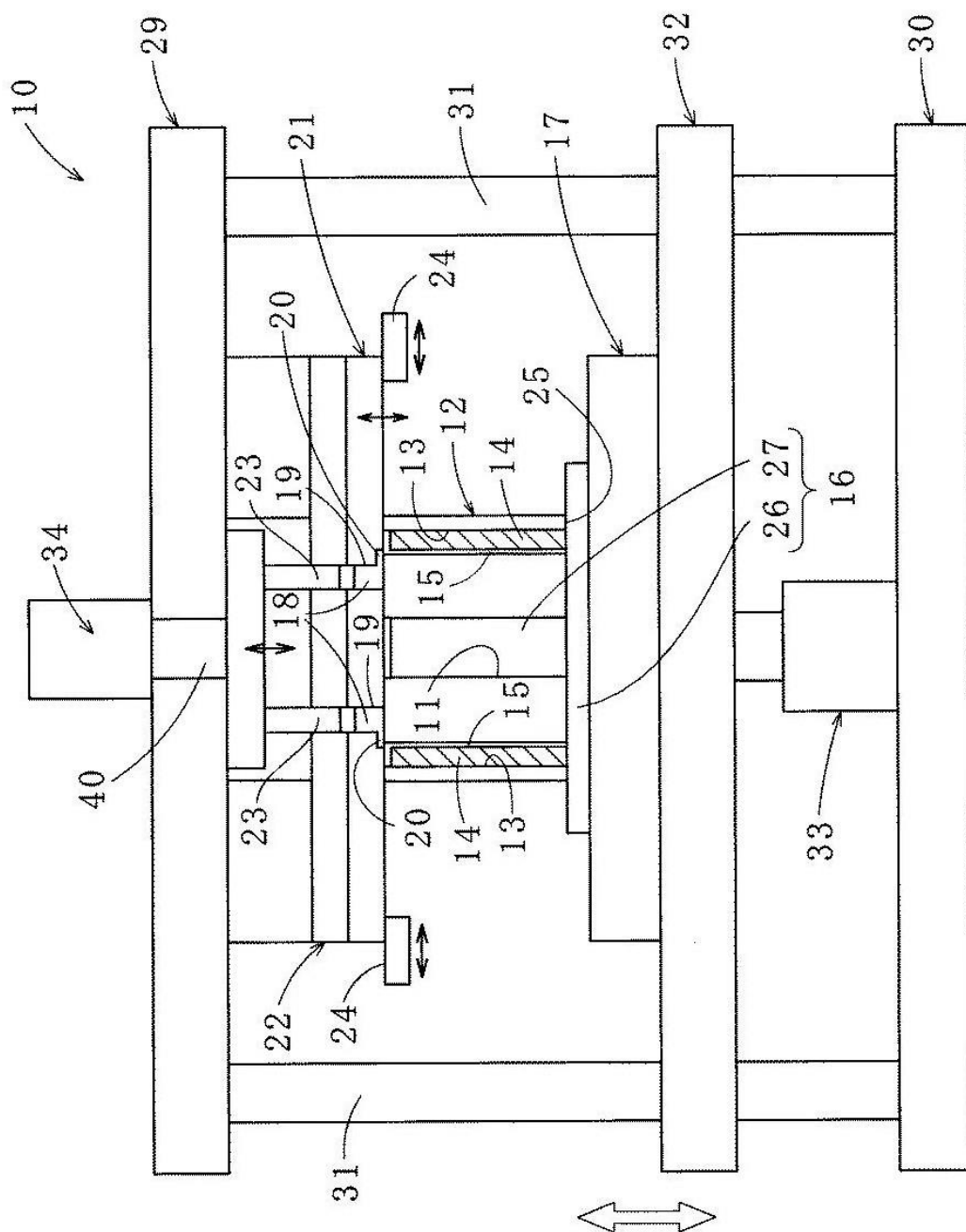


FIG. 2

<2>

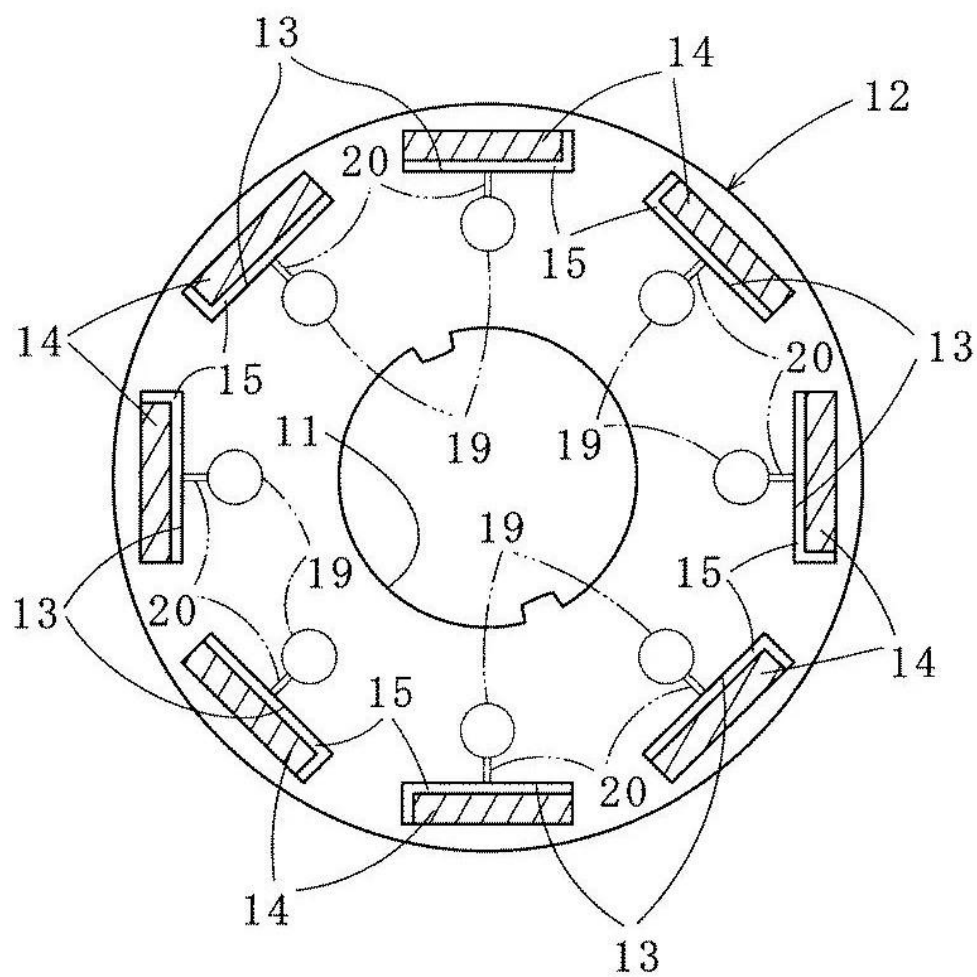


FIG. 3

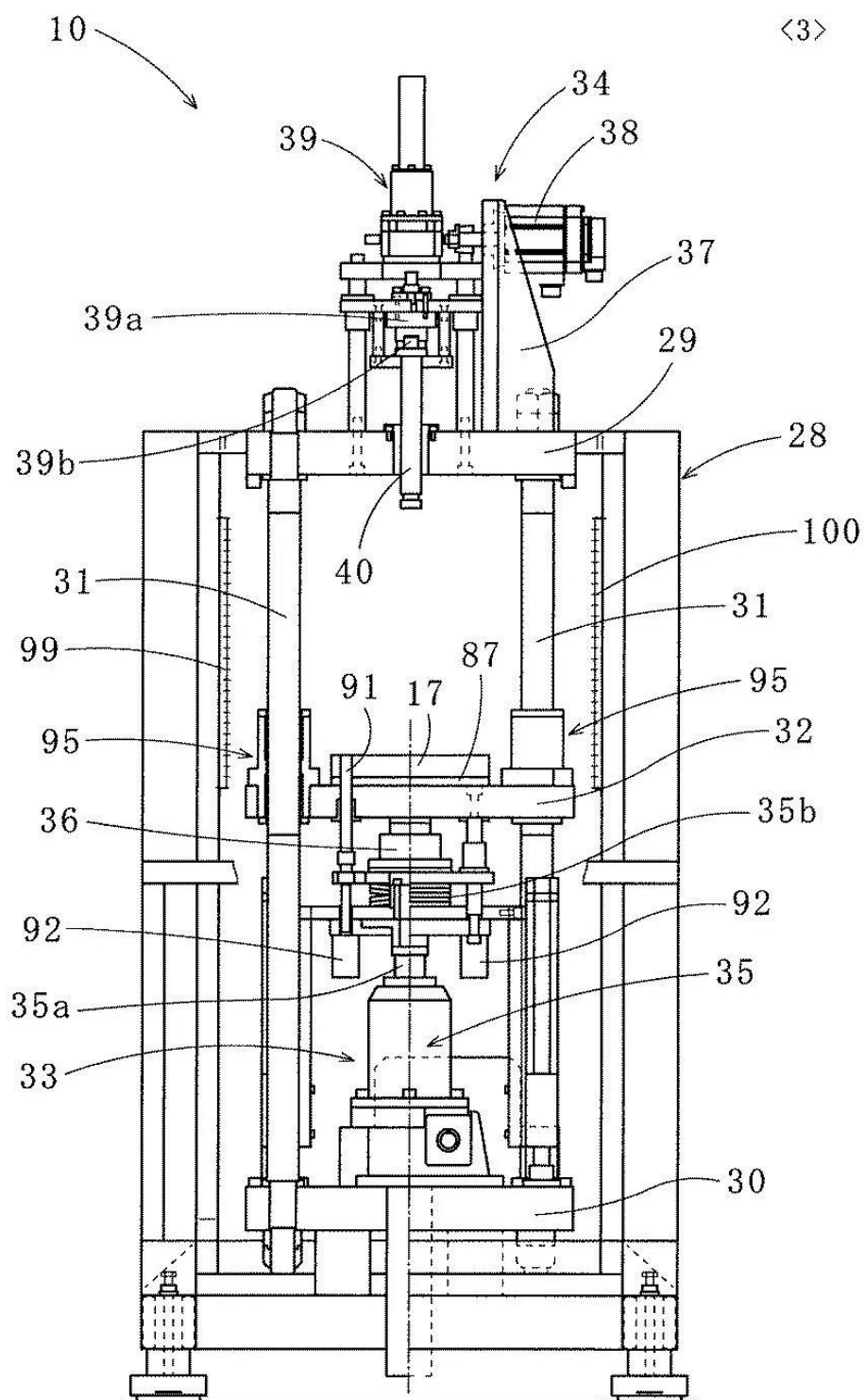


FIG. 4

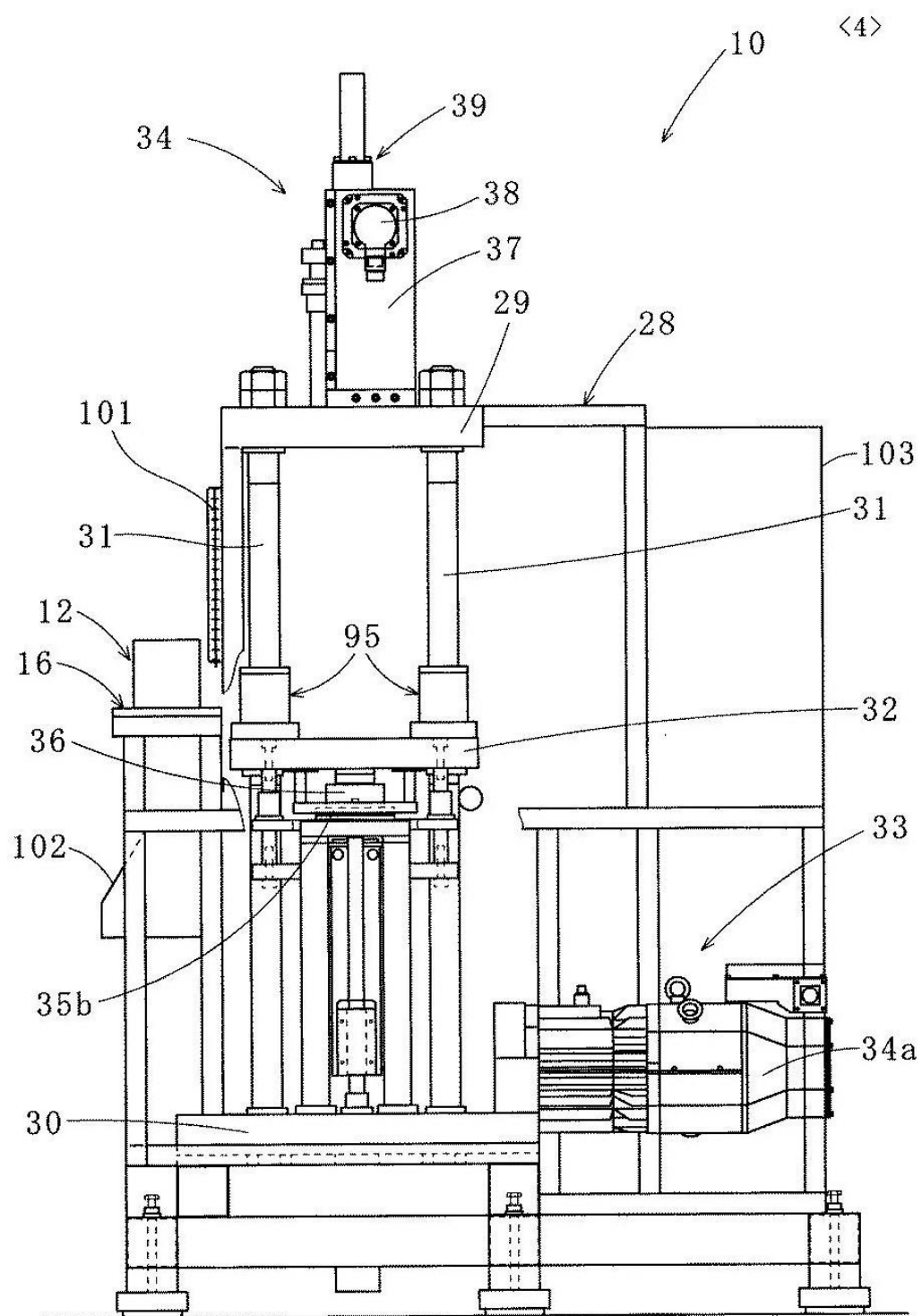


FIG. 5

LEFT \longleftrightarrow RIGHT

<5>

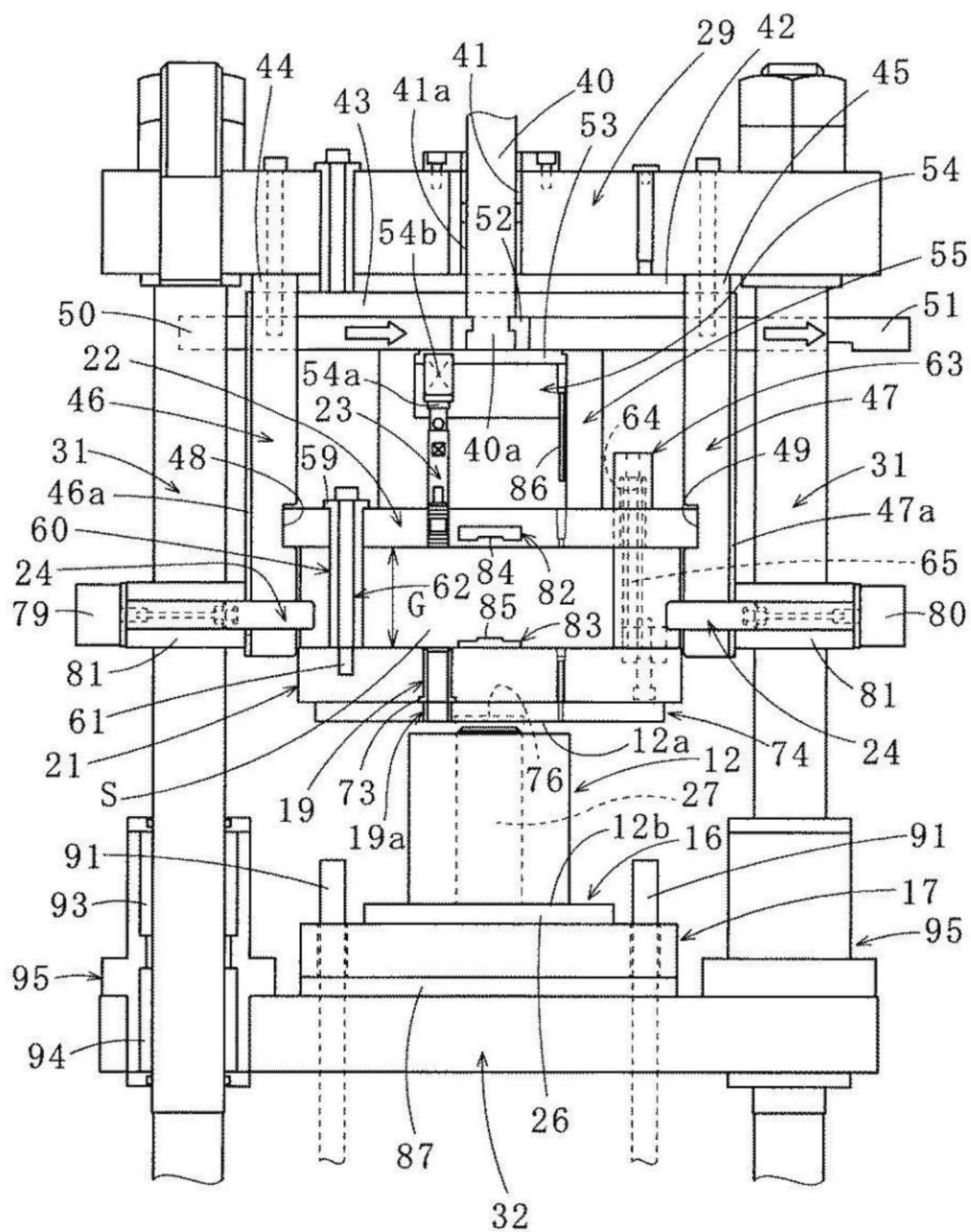


FIG. 6

<6>

LEFT ↔ RIGHT

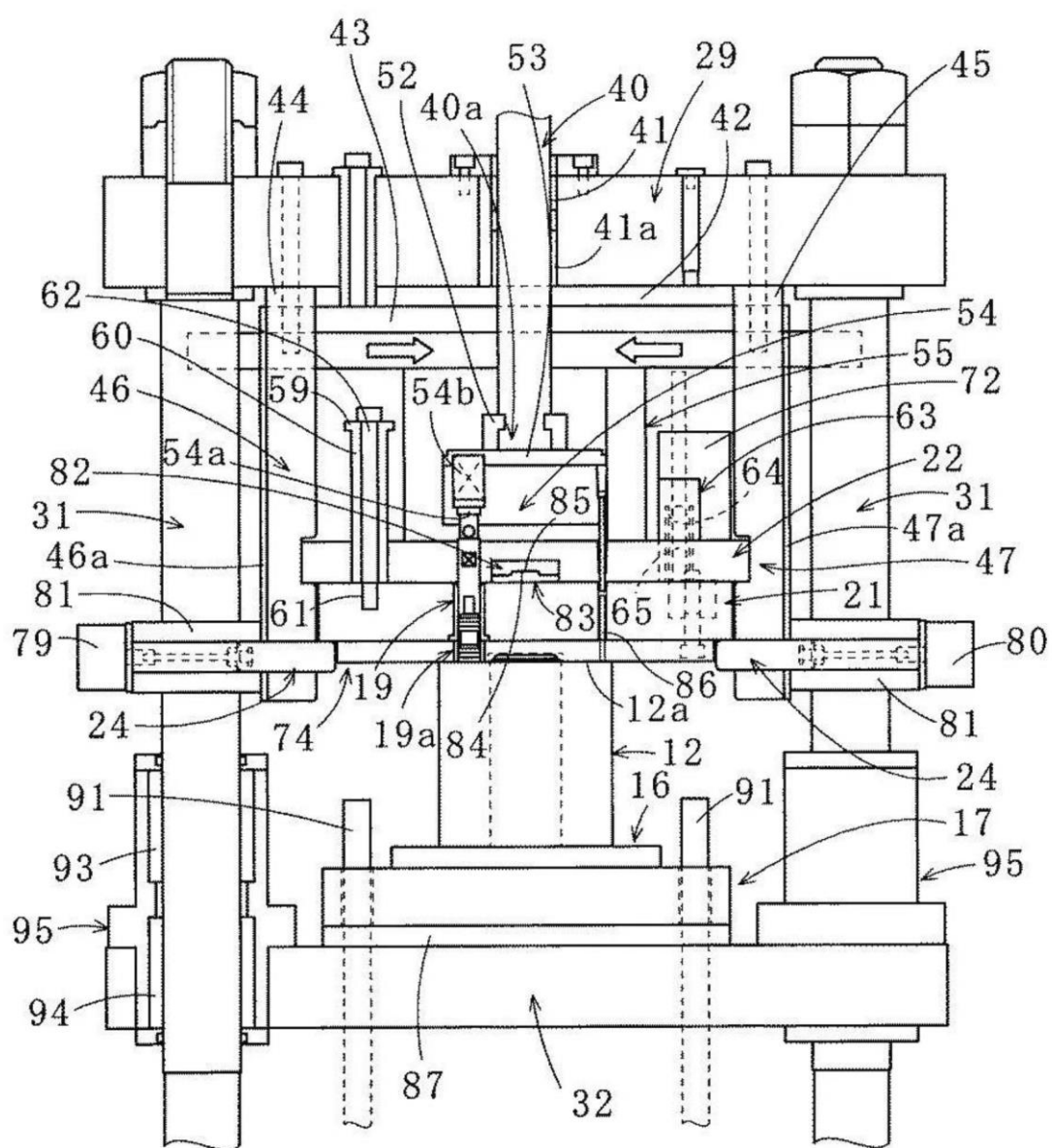


FIG. 7

<7>

FRONT \longleftrightarrow BACK

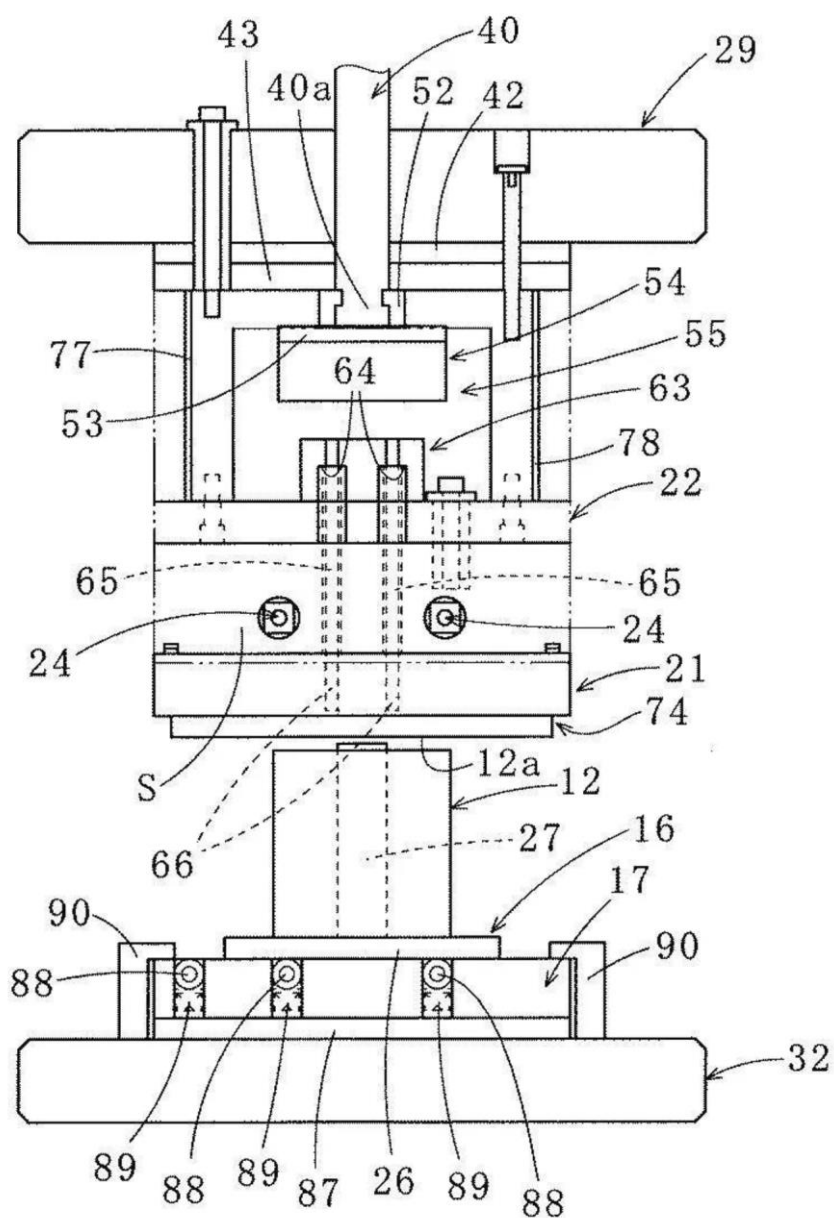


FIG. 8

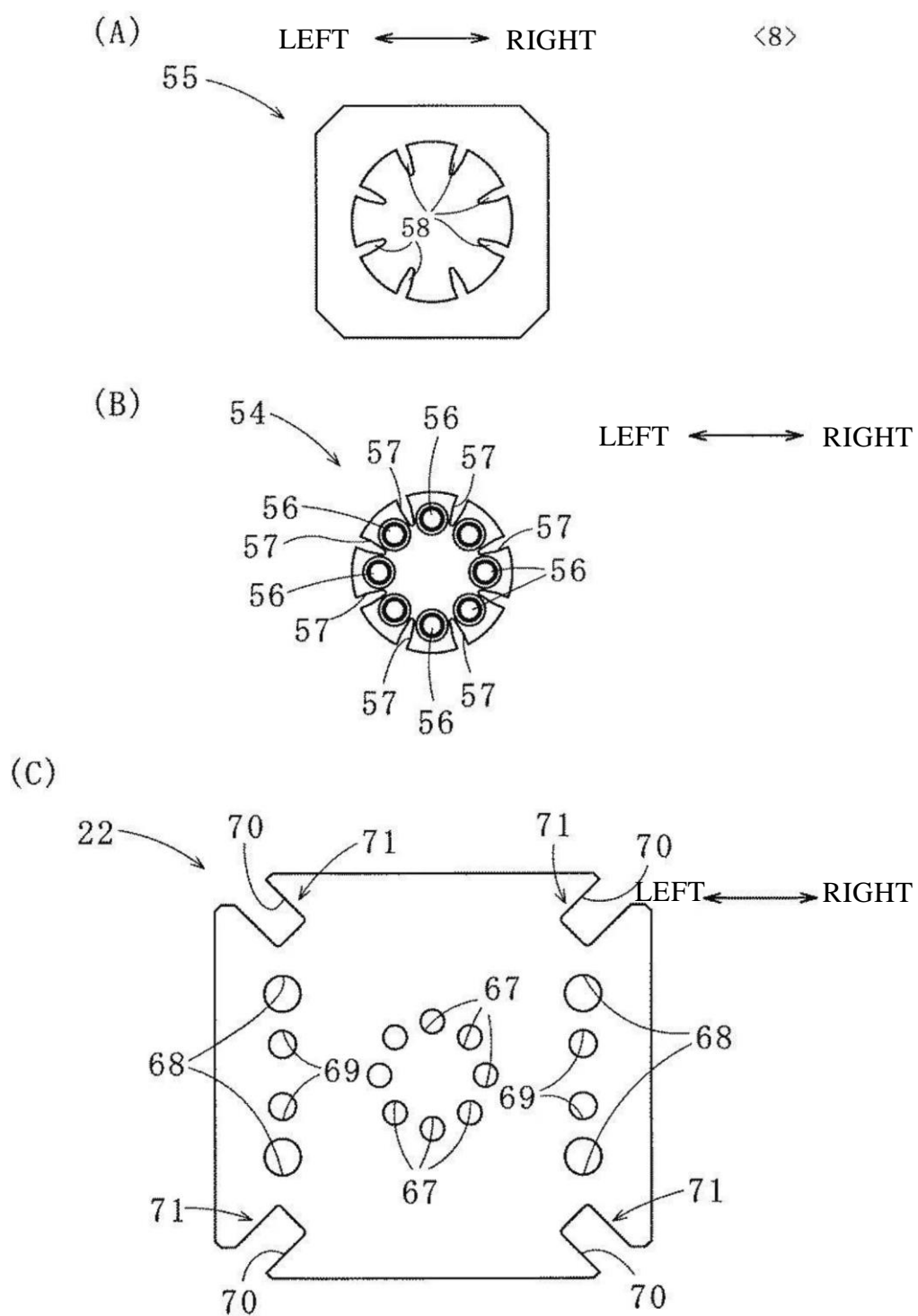


FIG. 9

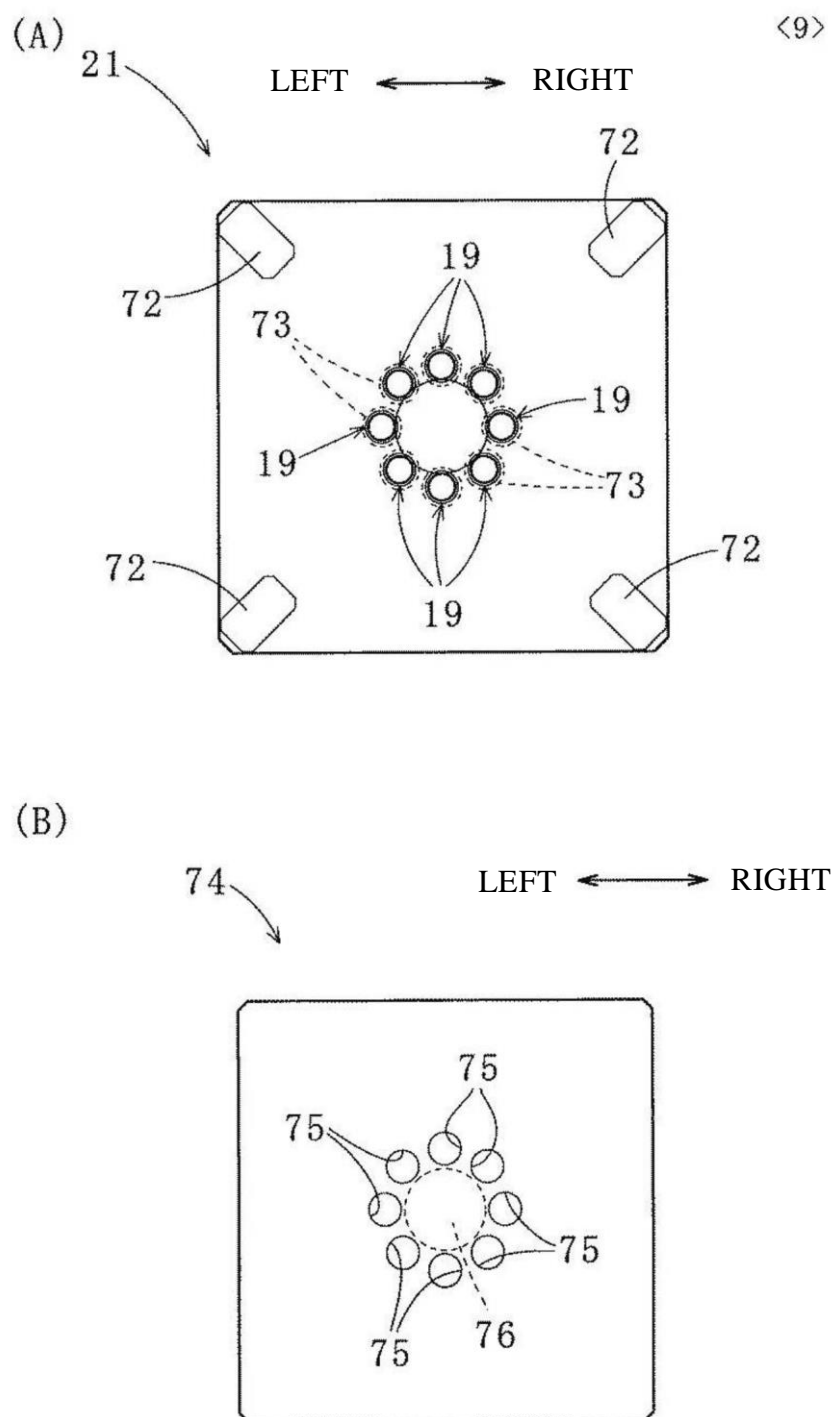


FIG. 10

